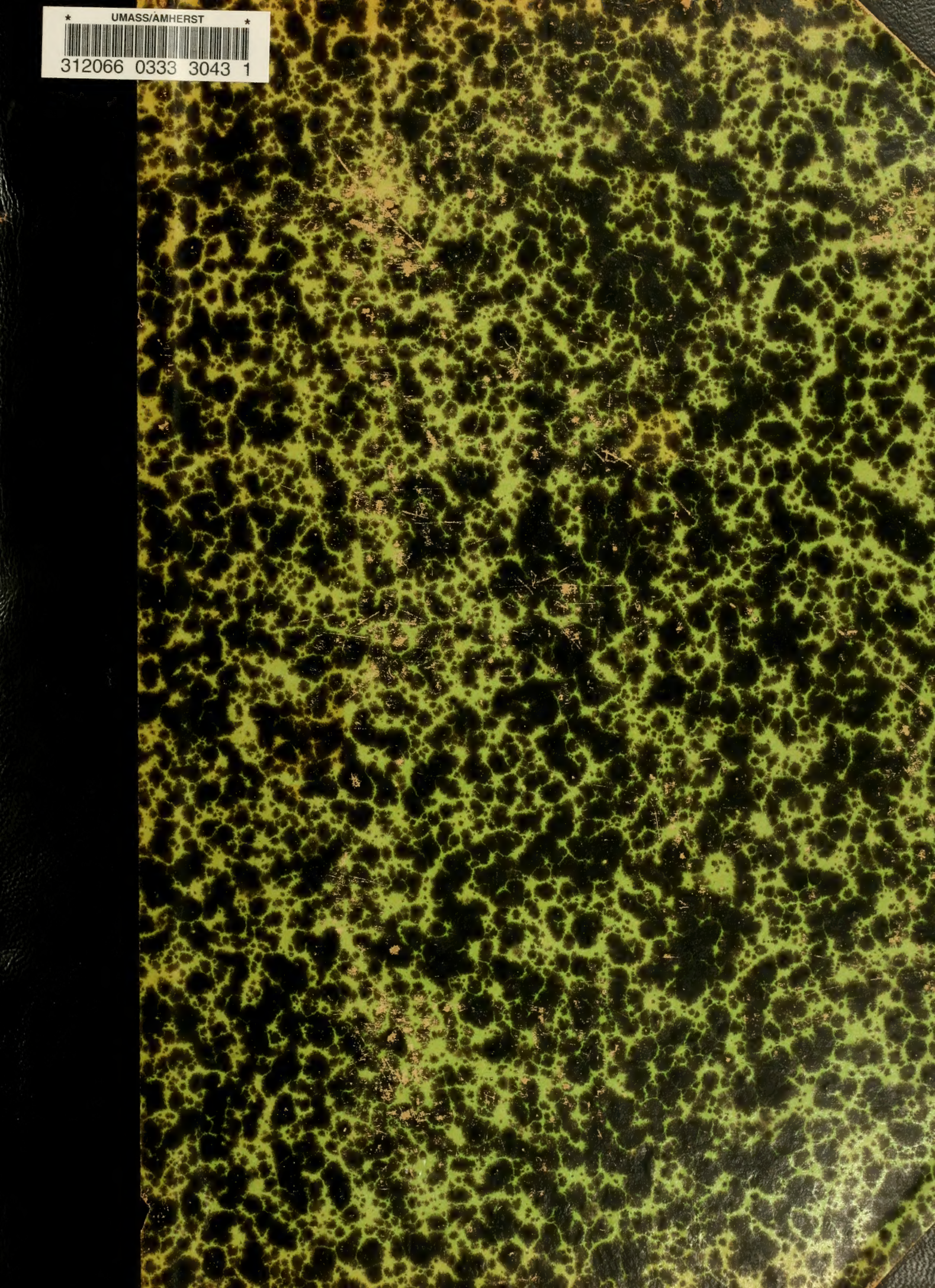


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JAMES KELWAY.



AN

ILLUSTRATED WEEKLY JOURNAL

OF

HORTICULTURE IN ALL ITS BRANCHES.

FOUNDED BY

W. Robinson, Author of "The Wild Garden," "English Flower Garden," &c.

"You see, sweet maid, we marry
A gentler scion to the wildest stock;
And make conceive a bark of baser kind
By bud of nobler race: This is an art
Which does mend nature,—change it rather: but
The art itself is nature."

Shakespeare.

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TO

JAMES KELWAY,

OF LANGPORT,

THE THIRTY-SIXTH VOLUME OF "THE GARDEN"

Is dedicated

IN ACKNOWLEDGMENT OF HIS WORK AMONG GARDEN FLOWERS.

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W. R., January 4, 1890.



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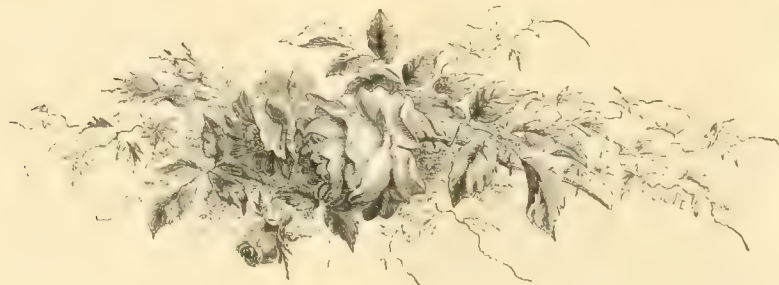
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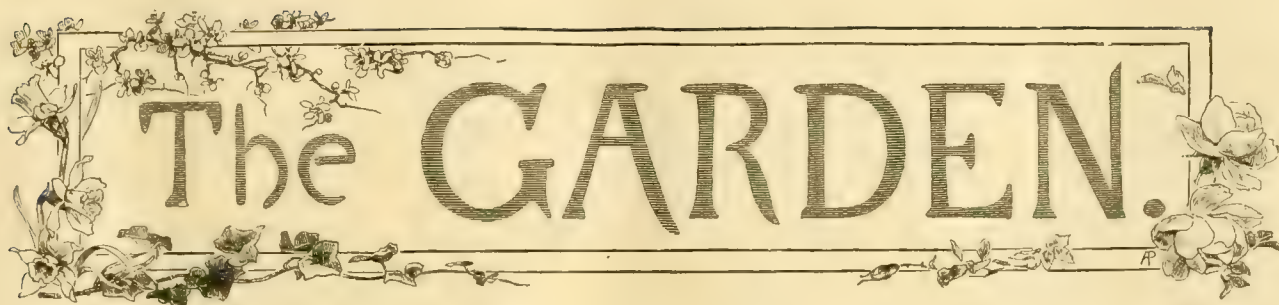




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The GARDEN.

VOL. XXXVI.

FRUIT GARDEN.

W. COLEMAN.

WATERING OUTSIDE BORDERS.

If "a stitch in time saves nine," the timely watering of outside borders is repaid over and over again, not only by an improvement in the weight and quality of the crops, but also by keeping the foliage fresh and free from insects. Although the rainfall in some parts of the country has been heavy, in others it has been extremely light and quite inadequate to the requirements of Vines and Peaches whose roots have the run of borders from 2 feet to 3 feet in thickness, with a foot or more of clean drainage beneath them. Upon such borders, composed principally of porous materials through which water passes quickly, a summer fall of 20 inches to 30 inches—that is, during the period in which the occupants have to perform all their work—is not too much. But instead of spreading this supply over the whole of the growing period, the bulk of the water should be given when the fruit is swelling and stoning and growth are in full force. Mid-season and late Grapes just now will take any reasonable quantity of water. If tepid and of a generous nature so much the better, but lacking the convenience for making it warm in any other way, the temperature may be increased and the quality improved by exposure for twenty-four hours in open tanks, which should abound in every well-appointed garden. Where the whole of the water is moved by physical strength, the labour of course is heavy, but in nine cases out of ten, pipe water, which requires most exposure to the sun and air, may be forced into open tanks several feet more or less above the level of the highest border. Wherever a broad, shallow, open tank can be provided for the reception of the raw material, a stop tap screwed for the attachment of a hose pipe may be let into the bottom, and from this a handy boy just as well as a man can water all the borders within the radius of the pipe. Pipe or hose-watering being rather deceptive, it is absolutely essential that the outlet within a given time be ascertained, and then, having calculated the area of any given border, the operator must work a given number of hours before he is allowed to move forward. Where water is scarce or plentiful even, especially if cold, its application can be economised and its temperature raised by passage through a good layer of fresh stable litter on its way to the surface of the border; indeed, timely mulching,

especially after warm thunder showers, not unfrequently renders artificial watering unnecessary, but in this case a good soaking after a hot, dry day carries a great deal of warmth down to the surface roots. If we walk through a set of houses after a hot, dry time, how often do we notice that suspicious tinge of brown upon the leaves not only in husky corners, but more or less over every part of the trellis. Heavy thunder rain, although it does not kill spider, gives the occupants of the houses such a perceptible step forward, that we often wonder how they can have been allowed to reach this pass, when by setting pipes and barrels going the advent of spider might have been prevented.

Peach trees, again, with their thousands of leaves spread out in an artificial way within 1 foot or 16 inches of broad squares of hermetically lapped glass, not unfrequently languish, and plead, as plainly as trees can plead, for copious supplies of water. The syringe or engine may be applied most lustily upon the lower sides of the leaves, but the upper sides, often exposed to a roasting temperature, get but a very imperfect bath, and even if they do obtain an abundance, spider will spread and fruit will drop so long as the plants are kept dry at the roots. The spread of spider, the premature dropping and ripening of Peaches and the shanking of Grapes, due to a dribbling system of watering, surely are serious evils; but the mischief, unfortunately, does not end here, as the roots denied water near the surface descend in search of it below the drainage, if not actually into the subsoil, and what follows? All goes fairly well so long as the weather continues dry, and yet there is just a tendency to black foot-stalks, although the berries may not be too sour for eating. In due course the clusters are cut and used, but the Vines persist in forcing crude laterals when they ought to be resting. A wet season follows; those unripe roots perish; the Vines the following spring break weakly, show thin clusters, which set badly, if they do not run away into tendrils, when the cultivator, after putting up with an indifferent crop of fruit, finds that he must lift the roots and re-make the border. The stitch in time in the form of copious watering has been neglected, and very many stitches must be put in before the Vines can be restored to a fruitful condition. Peach trees whose roots are forced down into the subsoil are equally sensitive and unmanageable, as they form gross watery shoots, which set very few flower-buds and these of inferior quality. A few may develop perfect flowers, but the major-

ity of them rot or drop, and confusion the following year is confounded. The stitch in time has been missed, and root-lifting is the only way out of the difficulty. A Vine in a well-drained border will take 30 inches of water; a Peach tree will take 24 inches. A rain-gauge will register that which falls from the clouds, and an observant cultivator will make good the deficiency.

EXTENSION TRAINED PEACHES IN FRANCE.

THE extension system has lately been tried on an extensive scale in one of the most noted private gardens in France against the severely methodical restrictive system adopted by the French gardeners, and with very satisfactory results. At this garden the flower and fruit departments are under different heads. The proprietor resides in England occasionally, and being dissatisfied with his Peach crops grown on the French method as compared with some recent experiences of English Peach culture, he had a long Peach house put up about four years ago, planted with fan-trained trees from Veitch's, put in charge of a young English gardener, under the control of the flower garden superintendent (a Frenchman), who had recommended the experiment. The trees were planted thickly to cover the wall and allowed to extend as fast as they liked on the lines often laid down in *THE GARDEN* (a periodical regularly read in the French garden in question). The French fruit growers came to see the English trees and were horrified. The method of training adopted was not scientific; it was coarse; it was barbarous. "Never mind," said the Englishman; "you go on with your fishing rods and I'll grow the Peaches;" and he did. The trees were planted early in 1886 and did well; bore a nice crop in 1887, a splendid crop in 1888, and promise equally well this season, the trees having become so large that every alternate tree has now to be removed. They are as big or bigger, and finer trees than the fantastical horizontal and other specimens in the famed fruit garden on the same estate that have been in training for twenty or thirty years, and in the matter of crops, either in quantity or quality, the extension-grown giants simply extinguish them. The ultimate result may probably be the extinction of the French methods, for the soil and conditions in France undoubtedly favour the full development of the Peach tree on the extension system.

J. S. W.

Strawberries.—We have again managed to connect the forced and outdoor Strawberries with the help of Black Prince, an old variety, but still very useful, and when fully ripe of irreproachable flavour. When required for dessert purposes it should be treated as an annual, *i.e.*, strong runners

should be obtained as early as possible and pegged into small pots or squares of turf, the latter being the more expeditious way. If these runners are well attended to in the matter of water, they will be nice strong stuff by the end of July. A south border that has been cleared of early Potatoes is a good site; it should receive a liberal dressing of manure and be deeply dug. If the soil is at all light a firm treading will be required, after which the young plants after receiving a thorough soaking may be inserted at 9 inches apart each way in 5 feet or 6 feet beds. A mulching of strawy manure immediately after planting before the ground has time to become dry will complete the operation. A distance of 9 inches apart for the plants may seem close, but it is not too close for this annual planting and with such a variety as Black Prince. Much finer fruit is obtained in this way, but if quantity is required, old plantations are the best, as this Strawberry is a prodigious cropper, and if liberally treated will fruit well in the same quarters for several years. It makes a very rich preserve, and is probably about the best variety for this purpose where its dark colour is not objected to. The same annual treatment applies to La Grosse Sucrée, and a batch of this variety treated in exactly the same manner as that indicated above may be planted yearly with Black Prince; it will tread very closely on the heels of the latter, and in fact be ready for use before Black Prince is over. I have made a special trial this year of the comparative earliness of La Grosse Sucrée and Vicomtesse de Thury, and the former was ready exactly seven days before Vicomtesse H. de Thury, so that it may be distinctly classed second in the order of ripening. I am speaking here of the older varieties, not having tried Noble; if this is as early as Black Prince, it must be from its vastly superior size a most remarkable acquisition.—E. BURRELL, *Claremont*.

NOTES ON PLANTING VINES.

ANYONE having Black Hamburg Vines in the early or second early houses which, through old age or other cause, have not produced so good crops of Grapes during the last few years as could be desired, I would strongly advise to cut all the bunches as soon as they are ripe, with about 9 inches of wood attached to each bunch. The wood attached to the bunches should be inserted in bottles of water resting on the edges of the shelves in the Grape or fruit room, or any other conveniently dry and cool place until the Grapes are required for use. This done, root out the old Vines, remove the probably exhausted and sour soil from a narrow strip of the border, say 5 feet wide, examine the drainage, and, if necessary, re-arrange it, placing over it a layer of thinly cut turf, Grass side down. Then fill the space excavated with a compost consisting of sound turfy loam, four parts wood ashes, four parts lime rubble, four parts fresh horse droppings, and about an ordinary-sized garden barrowful of fresh soot, mixing the whole well together before wheeling it on to the border. In preparing the border, make allowance for the soil settling down about 6 inches within as many weeks from the time of making it.

PLANTING THE VINES.—Before commencing this operation, the woodwork, glass, and brickwork should be thoroughly cleansed; the latter should be washed with hot lime and the former with soft soapy water. If home-grown Vines are not at hand, the cultivator should buy them from someone who is reputed for the cultivation and sending out of clean, healthy Vines. The plants, when thoroughly moist at the roots, should be turned out of the pots, have the drainage removed, and the soil all round the ball of earth and roots loosened with a pointed stick and be then planted at 3 feet apart and about 1 inch deeper than they were in the pots. Make the soil firm about them in planting, then put a stick to each plant for support, and secure the stick to the trellis, leaving it sufficiently long to subside about 6 inches with the soil. With this object in view, tie the sticks loosely to the wires, so that sticks, Vines, and soil may all sink

together. Having done this, give sufficient tepid water through a rose to settle the soil about the roots, and afterwards give a surface-dressing of horse droppings or other short manure to the thickness of 2 inches or 3 inches. Shade the Vines with mats for a few days until roots have pushed into the new soil, and damp them slightly overhead three times a day until they have made fresh growth, after which syringing in the morning and afternoon will suffice, damping, however, the surface of the border, pathways, and walls twice during the interval on bright sunny days, say at 11 and 1 o'clock.

STOPPING THE VINES.—After the Vine roots have got hold of the soil, every means should be taken to concentrate all the energies of the Vine in the thickening of the rods and the enlargement and consolidation of the buds. The lateral shoots springing from the axils of the leaves must be pinched at the first or second joint, as also should the sub-laterals, and those which afterwards appear should be pinched close back. The main rods, after they have made 2 feet of growth, should likewise be stopped, afterwards pinching out the laterals resulting from this stopping, and thereby causing the latent bud at the base—which, if the laterals had been allowed to grow as leaders, as is frequently the case, would not move till next year—to push into growth after the lapse of eight or ten days. The sap, in the meantime, will be necessarily directed to the development of both stems and buds. Thus treated from the first, an uniform plumpness of buds is secured along the entire length of the several rods.

WATERING AND VENTILATION.—Give copious supplies of clear water to the roots when the condition of the soil indicates dryness, following with a few tubfuls of liquid manure to each strip of border. Syringe the Vines and house generally morning and afternoon at closing time, about 4 o'clock on bright sunny days, as much with a view to promoting a growing atmosphere as preventing the Vines from being attacked by red spider. Ventilate the vineries freely between the hours of admitting fresh air in the morning (after that which should be put on late in the evening had been taken off for an hour when damping the Vines, &c., at 6 a.m.) and taking it off in the afternoon, so as to secure a short-jointed and consolidated growth, without which good results need not be expected. Vines thus treated will reach the top of the rafters before the end of the season, and, if necessary, may be allowed to bear a few bunches each next year. This method of procedure has everything to commend its adoption, seeing that a crop is taken from the old Vines this year in time to establish young ones for carrying a light crop next year.

H. W. WARD.

WORK IN FRUIT HOUSES.

PINES.

WHEN the earliest house is cleared of fruit and old stools it will require a thorough cleansing, but it will hardly be advisable to turn out the bed; not that there is so much difficulty in turning out an old one as in managing the heat in a new one. Much, however, depends upon the quality of the materials put in last autumn; whether they are still fairly sound or much decayed, also whether the cricket, the cockroach, and the woodlouse are plentiful. Pine pits should be cleared to the very bottom at least once a year, and, barring the danger from new beds made up in June or July, I question if there is any better season for carrying out a vigorous onslaught upon filth and living enemies. Boiling water, hot limewash, soft soap, and scrubbing-brushes are the articles against which garden destroyers cannot stand, but they must be plied with energy and judgment, otherwise time and materials will be thrown away. When the new bed is made up, say of dry Oak leaves harvested last autumn, it should be beaten and trodden until quite solid, and then great watchfulness will be needful, as the introduction of solar heat and moisture often raises the bottom heat to the point of destruction in a few hours. Assuming, however, that the heat has declined to 90°, or lower, and that the pit

is to be refilled with the most forward Queens, each plant should be firmly rammed and top-dressed with large lumps of fibry turf, not only to catch surface-roots, but also to keep the collars steady and dry, an important matter at all times, but especially so when the plants are resting in the autumn. As these plants may not require a second removal, they should be placed 2 feet apart each way, and leaves or tan being so acceptable, plunging should simply consist of placing the pots in shallow basins for the present. Here the treatment, both as regards heat, air, water, and moisture, they have received may be continued, but provided the browning of the foliage can be prevented the lighter the shading the better.

Successions.—As the filling of the early fruiting pit will necessitate the rearrangement of the next, the beds should be levelled and made very firm. Then, if any plants needed to make up the requisite number require potting, they should be shifted at once. The beds being old and reliable, deeper plunging here will be safe, but in this case I would err on the safe side, as the slightest disturbance often induces a flush of bottom-heat just when the tender roots are most susceptible to injury from violent fermentation in the bed. As these plants will be kept growing until the end of September, and we may have at least two brilliant months before us, they should have plenty of room pretty close to the glass, ventilation should be liberal, atmospheric moisture abundant, and root water sufficient to keep the soil in a good, moist growing condition. If these or the earlier plants show a tendency to throwing suckers they should be removed with the pincers, but, Queens excepted, this rarely happens, unless they are kept too close and moist. A bottom-heat of 85° from leaves is a most genial temperature, but a few degrees higher or lower make very little difference, always provided that of the air ranges from 70° at night to 85° by day with plenty of ventilation, and 90° is touched after closing with solar heat. The syringe just now may be used as freely as at any time, but unless the house is dry and fiery, damping the walls and surface of the bed early in the morning and a light overhead syringing in the afternoon will be ample.

Potting Pines.—As soils vary so much and water plays a most important part in making or destroying roots, the pots selected under any circumstances should not be too large. In some loams the plants will root as freely as Pelargoniums, in others they are shy, especially after they get beyond 6-inch pots. In the first case I would give Cayennes and Rothschilds 14-inch, Queens 12-inch, and Jamaicas 10-inch pots. In the second they should range from 12 inches down to 9 inches, as pots minus roots are not only the most common, but the most certain cause of failure. If the compost, consisting of rough fibry loam, bone-dust, lime rubble, and a dash of soot, is used dry and firmly rammed, plants in 6-inch to 8-inch pots may be shifted on into the fruiting sizes, and, provided the balls are thoroughly moist, watering may be deferred until new roots are on the move. A bottom-heat of 90° is not too high for newly-potted plants, but this temperature should not be exceeded, as it is necessary to keep them moist and close, at least for a time, when a stronger heat forces a weak, elongated growth out of the stored-up sap. It will be necessary to shade for a few hours during the hottest part of the day to keep the pits constantly moist, and fire-heat being objectionable, to close early under solar influences until the plants are re-established, when ordinary treatment can be resumed.

Suckers.—Where a sufficient number of the best plants have been placed in the fruiting pots, any that have not filled those they occupy must be replunged, when the best suckers may be potted to fill up the pit. The best suckers at this season are those taken from recently discarded stools, and these being thoroughly ripe and brown at the base, they must be trimmed and potted at once before they become dry. Pots 6 inches to 8 inches in diameter are not too large, and the compost being dry, they may be firmly rammed, watered at once, and plunged to the rims in a temperature of 85° to

90°. A close frame over a manure bed sustained by fermenting linings is the best place for suckers, as they root quickly and make fine plants before the autumn. A little light shade is a great help, and light dewing over on fine afternoons prevents waste until new roots are formed.

Early orchard house.—As the bulk of the Peaches and Nectarines will now be quite cleared of their fruit, provision must be made for another year by potting and getting them thoroughly established without loss of time. The first thing to be considered is the compost; therefore, as all stone fruits like and must have lime, the loam should be dry, rather heavy, and of a calcareous nature. The correctives and stimulants may consist of bone-dust, lime rubble, burnt earth, and a dash of soot, or, the staple being too light, dry pounded marl may be substituted for the burnt earth. The pots should be clean, dry, and very carefully crocked with potsherds, half-inch bones or oyster shells, and sufficiently large to admit the potting stick, as the compost must be thoroughly rammed. All preliminaries completed, the balls of the trees must be well soaked in tepid water the day before they are turned out, as no after-watering will restore a ball that is dry at the time of potting. When turned out all crocks and inert soil must be removed, straggling roots shortened, and others coiling picked out with a sharp-pointed stick. When placed in the pot, resting, of course, upon some of the roughest of the compost, the top of the ball should be quite 2 inches below the level of the rim—first, to allow for an inch of compost above it; and, second, to leave room for copious supplies of water. When all the trees have been transferred to their new clean pots they should be rearranged in the house, which must be kept rather close and moist by frequent damping and dewing, and, the weather being very hot and the outside air dry, slightly shaded. This, however, should not be carried to excess, as it is better to allow slight flagging for a few days than to draw a weak growth before the trees have taken to the new compost. When the foliage becomes crisp and the laterals commence fresh growth, ordinary treatment for a week or so may precede removal to the open air.

Reducing the balls of older trees with the view to their replacement in the pots they have previously occupied is an operation which requires a little more care; hence the advisability of allowing the wood and buds to get further advanced before they are turned out. The pots, I may say, should be well washed and made quite dry, otherwise the soil will stick to the sides. The balls of very old trees we sometimes pare down with a sharp knife, pick out the smooth surface, and repot immediately; but the old compost can best be removed by the immersion of the balls for a short time in tubs of warm water, and, whilst in the bath, working it out with sticks or the fingers. When the balls are properly reduced and the roots trimmed, the trees should stand for a little time to drain, and, provided the new compost is dry and warm, close moist treatment will restore them to active growth in eight or ten days.

Late houses.—The final thinning having been finished, all strong growths must be kept constantly pinched, also shoots which will be removed after the crop is gathered. Weak ones, on the other hand, must be left full length, as the removal of the point buds may ruin them for another year. When quite through the stoning process and the fruit is perceptibly on the move, the roots will take good top-dressing, also copious supplies of chilled diluted liquid every day. The heat, too, may be increased a little after closing, but unless the fruit is wanted it is best to keep the side ventilators constantly open, and raise the air temperature by closing the top lights about 5 o'clock on fine afternoons. Liberal thinning, good feeding, and syringing are imperative points, as it must be borne in mind that fifty fully-developed Peaches will weigh in the aggregate quite as much as double the number which have exhausted the trees in the process of forming the stones. If Cherries and early Plums are grown and the house is crowded, the first and possibly the second may

be removed to another airy structure to make more room. Early Pears, too, may be taken into the open air to ripen, but on no account must the roots feel the want of water, as one mishap may ruin the crop and injure the trees for another year.

Strawberries for the orchard house should now be layered, or rather pegged down upon 6-inch pots firmly filled with good rich soil. Many people think anyone can shift a plant from a 3-inch to a 6-inch or 7-inch pot, but unless thoroughly alive to the process of ramming until the pot is nearly half full, the plants are liable to sink too deep before the end of the season. By adopting the more simple process of filling the fruiting pots first and pegging the runners on the top, the small root-cramping pot is dispensed with, and the crown resting on the surface, its natural position, becomes as round as a nut, as red as a Cherry, and large enough to throw up one good truss instead of two weak ones.

Maiden trees of Plums, Pears, and Cherries, potted last autumn and plunged out in a warm open border, must be kept closely pinched at the sixth leaf for pyramids, and at every foot as the leaders ascend. If laterals and sublaterals push, these may be pinched and repinched to a single leaf, first, to throw force into the buds nearest the main stem; and second, to expose them to the ripening influence of sun heat and fresh air. The pots, 8 inches to 9 inches in diameter, being pretty well filled with roots, mulching with good rotten manure, copious watering, and evening syringing are operations which must not be neglected.

Pot Vines intended for starting in November will now be plumping their buds and the canes will be changing to the bright brown colour which indicates ripening. As this process must not be pushed too fast, feeding and syringing may still be continued, but more air must be given and the house kept drier through the night. When the canes, stopped at 6 feet to 9 feet from the pots, have coloured their whole length a few of the laterals may be taken away close to the main buds, commencing at the base and working gradually upwards. A few laterals, however, must be left near the tops to run wild, also each main leaf must be carefully preserved; the first to prevent the buds from breaking prematurely, the leaves, to feed and perfect the bunches. Some growers place the canes in the open air to ripen, but unless the season and situation are good and the Vines can be secured to south or west walls, the best result follows keeping them in the house and ventilating precisely as we ventilate early vineries.

Vines from eyes of the current year now filling 7-inch pots with roots may be raised quite above the plunging material where they will require more frequent supplies of water, and that of a generous nature. If too crowded, a few of the most forward may be removed to other structures where they will have the benefit of solar heat under glass, plenty of light, and more air than might be good for those left behind. Planting canes intended for cutting back when dormant may be pinched when they have made 6 feet to 8 feet of growth, and a few plump ripe buds at the base being very important, all laterals, save a few at the top, must be kept pinched at the first leaf. If a batch of eyes were put in early enough, say before Christmas, to make fruiting canes, if not already done, they should now be shifted into 10-inch pots. Making fruiting canes in one season is sharp work, especially if they are wanted for early forcing; hence the importance of steady bottom heat for hastening the formation of roots, plenty of solar heat, and an abundance of light. The longest and strongest canes are not always the best, as we often see imperfectly ripened rods, as thick as one's thumb, failing to show a single bunch, whilst hard, thoroughly matured canes the substance of cedar pencils show compact clusters from every eye. Stout, short-jointed canes by all means let us have, if possible, but we must not sacrifice maturity to substance. For very early forcing well-managed cut-backs are to be preferred, but for giving a quantity of Grapes along the upper parts of newly planted houses, Hamburghs, Madresfields, Foster's Seedling, Sweet-

waters, all the Frontignans, Muscats, and Gros Colmans, propagated and well grown this season, may be rested and ready for starting in March next. In the choice of pots for these yearlings it is best to err on the safe side, as medium-sized pots fill quickly, and once the plants are well rooted they can be fed to any extent.

WORK AMONGST HARDY FRUITS.

I will endeavour to ignore the fact that the fruit crops generally, if not actually nil, are extremely thin, and will assume that thinning is now in full force. Happy and fortunate the few men who have to pull off fruit, which the majority of growers this year so much covet; and fortunate, if unhappy, those amongst the latter who succeed in saving their trees. The management of Peach trees upon open walls within the past few years has come rapidly to the front, and so it should, for we give them the best walls, the best of compost, and treat them right royally where other species are allowed to go from instead of to the wall. Amongst wall trees, Peaches and Nectarines, I believe, are better cropped than the hardier Pear and Plum, and, strange as the fact may appear, the hardier Nectarine is not so well furnished as the tender Peach. Peach trees fortunately are remarkably clean and free from aphids; consequently insecticides have not been required. So far, then, fruit or no fruit, we have made a good start, as each shoot is speeding its way without a single check, the elements are propitious, and far-seeing growers are improving the occasion by extra disbudding and training thinly close to the walls. My own trees started, if anything, just a little too strong, but by withholding water from the roots and walls and cutting all gross shoots well back to the lowest laterals the growth is now as satisfactory as I ever saw it on Midsummer Day. Where crops of fruit are swelling it will be necessary to mulch and water; also to thin well, as it will not be wise to make willing friends do duty for lazy neighbours. When all the trees in large gardens are abundantly cropped one is apt to over-tax them, but this is bad practice, as they are sure to resent it—first, by giving small flavourless fruit; and, second, by giving none the following year. A Peach to each square foot of foliage is a heavy crop, and although it is yet early to reduce to this average, no one should leave more when stoning is finished. Trees which have missed their crop need not be watered, at least for the present, but water later on may be needful to the plumping of the buds; also to the suppression of spider. Pears, Plums, and Apricots, both against walls and upon open quarters, must be pinched and repinched, as it is more than ever important that the spurs and all shoots already laid in have full exposure to light and air. Aphides just now are on the increase, and the hot, dry weather continuing may yet be very troublesome. Here, as elsewhere, the stitch in time in the form of tobacco water or soapsuds followed by pure water through the hose must not be neglected. Apricots now swelling full crops of fruit will derive great benefit from good syringing, and being so quickly affected by drought, the roots especially should never feel the want of water. The fine, active fibres nearest the surface are of most value to the existing crop, but those lying deeper must not be overlooked; hence the wisdom of mulching well and watering copiously. Trees of all kinds which have been root-pruned, transplanted, or in any way disturbed must now be looked to. The stored-up sap and heavy rains combined hitherto have kept them going, but the sun heat now getting into the soil will soon tell adversely if mulching and watering are neglected. Bush fruits, including Gooseberries, Currants, and Raspberries, will require close and careful netting, as the birds, this year unusually plentiful, are always most troublesome in hot, dry weather. Gooseberries and Red Currants in this locality are plentiful and good, but the tips of the shoots of the latter are curled, blotched, and blighted. Having made a strong growth, we have thinned out the shoots and taken off all the worst points preliminary to netting. Black Currants are badly blighted, and Raspberries, especially old plantations, have

broken imperfectly. Strawberries are not the abundant and rich succulent crop the profuse blossom led many to anticipate. Young plantations are the best, but these even are not swelling more than half their fruit, a fair proof that the unripe crowns were exhausted by the flowering process. If not already done, late varieties like Elton, Oxonian, and Filbert Pine should now be tied or trussed up, watered if necessary, and securely netted. Layering will now be in full force, and as a great number of plants are blind, these for stock purposes should be avoided. W. C.

ROSE GARDEN.

TEAS AND HYBRID PERPETUALS.

At the present time there is some danger of a few of our Roses suffering serious loss through the open classes for the best twelve or any other number of Roses. On the face of it, nothing could seem fairer or better than such a class. But in practice it often works unjustly towards Teas, which are so useful, beautiful, and profitable as to deserve a class to themselves. Not only this. Judges are placed in a somewhat unfair dilemma when called upon to discharge the compound duty of not only determining the best six, twelve, or any other number of Roses, but likewise of deciding whether twelve semi-perfect Teas or twelve equally perfect Perpetuals are the best. Experience also clearly demonstrates that some jurors prefer Teas to Perpetuals, and *vice versa*. Now were the classes separated, we should at least get rid of the main cause of personal favouritism. We could hardly hope to eliminate the whole of it, for until the latter end of Rose showing, jurors will always be found who will prefer particular Roses of the same type over others equally fond of a different type or variety. For example, there are jurors as well as growers who will prefer a perfect dozen blooms of La France over a dozen equally good Marie Baumanns, or twelve A. K. Williams to Mme. Gabriel Luizet.

But while such partial, personal favouritism is probably inevitable, it might be well to confine it to the narrowest possible dimensions by at least limiting the competition to the extent of preventing Teas and Hybrid Perpetuals from unfairly contending against each other in a contest necessarily unequal from structural considerations. The size and mass of the Perpetuals so often fill the eyes and weigh down the judicial verdicts of judges as to excite the sympathy of the general public on behalf of the defeated, but by no means disgraced Teas.

Even at the Regent's Park show the other day, though the conquering Perpetual Mrs. John Laing was faultless in form and exquisitely soft, fresh, and pure in colour, yet there were not a few who cast more longing eyes on the beautiful dozens of the Princess of Wales and Comtesse de Nadaillac. Neither was the injustice in this case confined to the Teas. It seemed equally or more unfair to pit the merits of Rose Mrs. John Laing—which seems a decided improvement on Mme. Gabriel Luizet, which seems everywhere doing its very best this season as if it feared being supplanted by a rival—against the very unique beauty of these Tea varieties. I know that many societies do offer prizes for the best twelves of Teas, and likewise of Perpetuals, and the more generally this system is carried out the better for the improvement of both of these invaluable classes of Roses. D. T. F.

The multiflora Rose.—Mr. F. L. Temple, of Cambridge, Mass., speaks in an enthusiastic way of the value of this stock in America. The true hardy

kind is meant. It has been propagated by the hundred thousand in America of late years. It is hardy and very vigorous, root action prompt and extraordinary, and altogether it deserves the immediate attention of our own Rose growers.

ROSES PRINCESS OF WALES AND COMTESSE DE NADAILLAC.

WORDS fail to convey any idea of the many shades of colour in these two Roses. Could you aid my descriptions with one of your richest coloured plates of these two Roses, a good deal might be done. Even then, possibly, you could hardly reproduce Princess of Wales and Comtesse de Nadaillac as grown and exhibited by Mr. Prince.

Only last week reference was made in THE GARDEN to the range of colour so often noted among Maréchal Niel Roses. Never were the extremes of colour, of size, and quality among Maréchal Niels so glaringly apparent as at the Regent's Park show, nor more vivid illustrations found of the truth that it would do for a button-hole or for furnishing a tea saucer. But yet, though semi-blanché Maréchals are often found, it still continues a golden Rose, with more or less gold in it, and little or no other colour. But these two Roses, with their rich mixture of copper, flesh and yellow of many shades, each have the elements of a many-toned trio of colour in themselves. But when the two Roses are mustered in force in close proximity, they hold one with such a spell of complete satisfaction, that neither the beauty nor fragrance of other Roses, nor the eager interruptions of excited exhibitors can ruffle or disturb. It is not that the two Roses are alike. But it is the colour that rivets all eyes and enchains all hearts. A good deal must also be attributed to the comparative novelty of this charming exhibit. For though Comtesse de Nadaillac is nearly twenty years old, it does so badly in many places that it is far too little grown and not often exhibited, as seldom or never has it been staged in such exquisite form and colour as at the Botanic Gardens on June 19. The blending of purple-flesh colour with or into soft apricot or orange must be seen to be realised. The Princess of Wales variety, being hardly yet seven years old, is, of course, yet more rarely grown, and perhaps has hardly ever been exhibited in such perfection of form and colouring. The buds are long and tapering, with centres of deep yellow, while the outer petals are light yellow suffused with rose, something in the way of Marie Van Houtte. In fact, were it desirable to change the colour duet into a trio, the Marie Van Houtte or Mme. Ducher might be added to the Comtesse de Nadaillac and Princess of Wales.

These effects, however, must be seen to be appreciated, and it would be as hopeless to attempt to portray the charms and beauties of a finished landscape to the born blind as to unfold the delicate touches and soft and satisfying under-tones of this rose colour duet to those who know little or nothing of these two Roses, either in their highest individual perfection or in the accentuated force and growing beauty of masses of each in contrasting harmony. D. T. F.

Tea Roses at Oxford.—On looking at the Roses at the Oxford Rose Show the other day, I was struck with the marvellous colours always to be found in Mr. Prince's Teas. There must be something in the soil of his Longworth nursery that conduces to this end. He grows a good many of his Teas on walls, while he has a large number also in the open ground. He makes a point of taking great care of his plants in winter. About a week before Christmas he unties or loosens such as are fastened to the walls, and removes sufficient soil from about the roots to allow of the plant being gently bent down to the ground, pegging or tying it down neatly to make a compact prostrate line of branches. He does not attempt, however, to cover up the plants until there are several degrees of frost, otherwise they would begin to shoot, thus tending to weaken considerably their spring

growth. When there are more than 8° or 10° of frost Mr. Prince covers the plants sufficiently with mats or straw to keep out the rain as well as frost, the rain, by forcing the growth, doing as much harm as the frost. This covering is removed as soon as the frost lessens in severity, as to keep them needlessly covered up would be to start them into growth, with the added danger that the effects of spring frosts would be more severely felt. When danger from severe frosts is over, the covering is removed; but the branches are not liberated and put in their proper places against the wall until about the middle or end of February. This is a simple and effectual process, and it can be adopted also for plants growing in the open air. I am inclined to think it is this care of his Tea Rose that enables Mr. Prince to show such glorious blooms from the plants at all times.—R. D.

China Roses.—Would the editor of THE GARDEN kindly tell the writer how to manage the common pink China (Monthly) Rose? The plants are in rather a deep soil, but good exposure, and are growing tall and with small leaves and no growth near the bottom of the plants. How and when should they be pruned, and in the above case would it be well to cut them down and when? Otherwise the plants seem strong and of a good size.—A LOVER OF FLOWERS.

* * The best plan to adopt would probably be to cut the plants down now, so that there might be time for fresh growth from the base of the plant to ripen before the autumn. But the "small leaves and no growth" sounds rather as though the plant lacked water or a sufficiently rich soil. China Roses always repay for rich feeding, and if the plants are not cut down now probably the best course would be to give them a good watering and then mulch with manure.—ED.

Own-root Roses.—If I had ever doubted the capacity of own-root Roses to grow and flower satisfactorily, every doubt would have been dispelled this summer, as, apart from my own now somewhat lengthened experience, I have seen in two different places this season numbers of plants that had been raised from cuttings in the most vigorous health, and producing an abundance of flowers of high-class quality. These cases illustrate in the most forcible manner how easily own-root Roses may be raised, and how well many of the varieties of Hybrid Perpetuals thrive when so dealt with. In both instances the cuttings were taken off in the autumn and planted in the open ground; one lot had the protection of a shrubby border and some shade from distant trees; the others were planted in the open quarters of a nursery. In both cases a fair percentage of the cuttings grew, and now in their fifth year they are making excellent growth and flowering very freely. Some people raise an objection to own-root Roses, because all the varieties have not the same vigorous habit when increased in this way. I do not wish to imply that all Roses do well on their own roots, but the majority of them will. For those who are not acquainted with the sorts that thrive under this treatment, the best thing they can do is not to take cuttings from weakly plants. If they select the longest and strongest shoots, which should be 3 feet or more in length before they are made into cuttings, no mistake will occur.—J. C. C.

Rose Homere.—I agree with "A. H." in THE GARDEN, June 29 (p. 594), that this Rose is not always satisfactory. At the same time, its behaviour is puzzling. In the garden of Mr. J. Marshall, Taunton, where the soil is neither very light nor very heavy, it does very well as a standard, the plants scarcely ever being without flowers of excellent quality from early summer to late in the autumn. In this case the plants are very lightly pruned. In another garden I am acquainted with, several rather old plants that have occupied positions in well-sheltered beds in the open air very rarely produce perfect blooms. The plants make good growth, and plenty of flower-buds are formed, but they either split or come with a green centre. Looking at the fine growth other Roses in the same beds are making and the sheltered situation they occupy, I am inclined to think that the cause of

failure in this case is that the Rose is united to an unsuitable stock. I have never known *Homère* to prove unsatisfactory when grown under glass, and for covering walls with a fairly warm aspect in the open air in the west of England it is thoroughly reliable.—J. C. C.

TEA ROSES IN 1889.

THE Roses at the Regent's Park show on the 19th were a pleasant surprise to most rosarians, notwithstanding some might say, in consequence of the mildness of the season, the plants looked somewhat weak and washy in many districts. So near to the middle of June was also early for a good muster of the finest Roses. The first week of July is more likely to bring forth the richer creams of our modern Rose harvests. Seldom, however, have finer Roses been seen than at the Regent's Park show. The quality was also so good as to give additional point to the finer blooms through the force of contrast. Some blooms of *Maréchal Niel*, *La France*, *Marie Baumann*, *Etienne Levet*, *Comtesse de Nadaillac*, *Princess of Wales*, *Mme. Gabriel Luizet*, *A. K. Williams*, *Mme. Cusin*, *Mrs. J. Laing*, *Mme. de Watteville*, *Rubens*, and *Prince Arthur* were very perfect; while it was pleasing to note such old favourites as *Charles Lefebvre* and *General Jacqueminot* still holding their own among the dark Perpetuals. *Violette Bouyer* seems specially pure and white this season, while the majority of the higher-coloured Roses were several tints more intense than their normal hues.

Messrs. Wm. Paul's collection of Roses seemed to prove that most varieties and species are quite up to their average vigour. There were numbers of species and varieties seldom seen at Rose shows, all effectively arranged and shown in groups or masses.

And yet there were wonderfully blanched samples of some Roses, notably *La France* and the *Maréchal Niel*, at the Regent's Park, though we were assured that all the *Maréchals* shown were from the open air, as were also the fine dozen exhibited by Mr. Prince, of Oxford. But what has come of *Her Majesty*, *The Bride*, *The Puritan*, and other novelties? Among Perpetuals that are growing or blooming especially well this season are the following: *Star of Waltham*, *Paul Neron*, *Marchioness of Exeter*, *Duchesse de Caylus*, *Mme. Gabriel Luizet*, *Marie Finger*, *Climbing Captain Christy*, *Annie Wood*, *Beauty of Waltham*, *Mrs. Baker*, *John S. Mills*, *General Jacqueminot*, *Comtesse de Paris*, *Violette Bouyer*. Among Teas the finest are *Gloire de Dijon*, *Homère*, *Princess of Wales*, *Comtesse de Nadaillac*, *Jean Ducher*, *Marie Van Houtte*, *Anna Ollivier*, *Alba rosea*, *Rêve d'Or*, *Niphetos*, *Jules Finger*, *Souvenir d'un Ami*. Among those weaker in growth or generally worse than usual are *A. K. Williams*, *Boule de Neige*, *Ferdinand de Lesseps*, *Duchess of Bedford*, *John Bright*, *Jean Souperet*, *Duchess of Connaught*, *Mme. T. Levet*, *Alfred Colomb*, *Mme. Lacharme*, *Le Havre*, and *Dr. Sewell*.

Whilst the two most magnificent and useful of all our Roses—*La France* and *Maréchal Niel*—have neither bloomed so freely nor grown so strongly as usual, on the other hand the first blooms of the *Souvenir de la Malmaison* have seldom come so perfect in form nor those of *La France* so brilliantly coloured at this season. D. T. F.

SHORT NOTES.—ROSES.

Rose Gloire de Dijon.—The noble *Gloire de Dijon* Rose mentioned in THE GARDEN, June 22 (p. 569), is at Baylham Mill, not Baytham Irwill.

Tea Rose Primrose Dame.—Some small bushes of this Rose planted in April have during the past week been producing wonderful flowers for the size of the plants. The flower is of a fine globular form and of a primrose hue, which deepens to apricot in the centre. Judging from our small plants, this Rose gives great promise for the future.—A. H.

Rose Maiden's Blush.—It is a pity this beautiful old Rose is not more grown, as it will do well under almost any conditions. We have a lot planted against an old wall with a west aspect, and at the present time the plants are covered with hundreds of

splendid blooms. All the attention the plants receive is to fasten them up to keep them off the path.—THOS. B. FIELD, *Stanley Hall Gardens, Bridgnorth*.

Mme. Plantier.—This well-known Noisette Rose was remarkably beautiful a few days ago at Kew, where there are several standard plants of it near the Palm house. The flowers are of the purest white, and delightful in the mass. It should come into the best selection of garden Roses.

Rose W. A. Richardson.—This has been the best Rose on the wall. Its wealth of glossy foliage heightens the effect of the deep apricot-coloured buds. Unfortunately, I find there is either natural variation or some spurious form in commerce, for some bushes will give flowers which, though of the same form, have no more colour than the old *Safrano*.—A. H.

—In answer to "M. T." (GARDEN, June 29, p. 593), I have grown this Rose in the open ground for several seasons both as a climber and a standard. As a standard, however, it is too rampant, and if the knife be used too freely it is at the expense of the flowers. At Peterborough this Rose does very well outside in different positions, and stands the winters well. We have several here under glass and upon a wall in the open air. In both cases the plants have flowered well, but in the open, I think, better of the two. Cuttings strike readily, and this Rose does very well upon its own roots.—W. A. COOK, *Calne*.

—In answer to "M. T." (GARDEN, June 29, p. 593), I have one Rose, viz., *W. A. Richardson*, growing and flowering freely upon the walls in every aspect. Most of the plants were put out four years ago, and have never had the slightest protection. Some of the trees are now covering a space of 24 square feet, and for the last four weeks have been one mass of bloom. I find the colour comes out best on those planted upon the N.W. wall. My soil is very light and gravelly, and all the help I give the plants is a good mulching and plenty of liquid manure in dry weather. I also have them growing in the open borders as standards and half standards. These plants make plenty of growth, but do not flower so freely as those against the walls.—THOS. B. FIELD, *Stanley Hall Gardens, Bridgnorth*.

FLOWER GARDEN.

FLOWER GARDEN NOTES.

SPIRÆAS.—Next to *Delphiniums* the noblest-looking plant in the herbaceous garden at the present time is *Spiræa Aruncus*. Some of the plants have flowering plumes 6 feet in length, and there are none shorter than 5 feet. Their light, feathery, creamy white panicles of flowers show up grandly against a hedge of *Lawson's Cypress*. If backed up with plenty of greenery—*Rhododendrons*, *Conifers*, or *Yews*, there can be no doubt but that this *Spiræa* would have a grander effect than even the noble *Pampas Grass* or the more graceful *Arundo conspicua*. Deep and richer soil than for shrubs in general would be needed, but the furnishing of this would not be a formidable operation. Given this and abundant root moisture, it will be excelled by no other summer-flowering lawn plant. I know of no other way of increasing the stock of it except by division of roots, and this can be done at any time after the plants have died down. The dwarf and bushy *Astilbe* (*Spiræa japonica*) is also at the present time a fine feature in the herbaceous border. It looks best in groups of from three to nine plants, the masses of upright, light, feathery, pure white flowers at the present time contrasting finely with the blue *Veronica spicata* and the prostrate growing *V. rupestris*. The crimson Japanese Meadow Sweet (*Spiræa palmata*) flowers a little later, otherwise, owing to the contrast in colour—white and crimson—it would be desirable to plant the two kinds in mixture. As, however, they do not flower simultaneously, it is preferable to plant them in separate groups. The new *Spiræa astilboides* will, as soon as it becomes better known, be grown in all gardens. It promises to grow as large as *S. Aruncus*, and the flowers are more light and feathery and nearly pure white. There is a variegated-leaved variety of *japonica*, but it is not of

much account; indeed, we have discontinued growing it because it does not keep its foliage well, especially if it suffers from the least drought.

CANNAS.—Were the hardness of *Cannas* better known, their popularity for the summer decoration of the flower garden would assuredly increase. Their hardness has been well tested here. For several consecutive winters the plants were left in the ground and all started well, and, as a matter of course, made a much finer growth than did plants lifted and wintered indoors; the foliage, unfortunately, is liable to get torn by wind, but this can be prevented by selecting sheltered positions for the plants. Massed in front of shrubs in good sized clumps on the lawn, and in bays, or recesses of the same, no plants produce a finer tropical aspect. Large beds of the plants should be planted rather closely together and also be sheltered from east and north; thick planting will also help to preserve the foliage. The soil should not be of a less depth than 2 feet, light loam enriched with decayed cow manure being the material in which the plants thrive and winter best. The foregoing remarks are only applicable to what must now be called the old foliage type of *Cannas*, of which the best varieties are *Premices de Nice*, *nigricans*, *iridiflora*, *Ehemanni*, and *Auguste Ferrier*. As yet I have had very little to do with the new race of fine-flowering *Cannas*, but that little is sufficient for me to say with certainty that they are destined to become popular bedding plants. The growth is dense and dwarf, yet massive, the leaves being as broad as those of the old type, and they bloom profusely, the flowers of some kinds being at least six times as large as those of the original type, while they quite eclipse them in brightness of colours—scarlet, crimson, rose, carmine, orange, and yellow being the prevailing shades. Everyone wishing for fine foliage and finer flowers in one and the same plant should grow these new dwarf *Cannas*.

IBERIS (*Candytufts*).—The evergreen species of *Candytufts* have and are still flowering exceptionally well this season. They are gay for six or eight weeks in late spring and early summer, and yet they are by no means common to gardens. They are hardy, evergreen, free-flowering, and long-lasting, and should be grown as largely as *Wallflowers*. The pure white variety, *Iberis corifolia*, is my favourite. It is the first to flower and the latest to cease blooming. The variety *gibraltarica*, a whitish pink in colour, is an excellent companion plant, has larger flowers, and blooms nearly as freely. The varieties *sempervirens* and *sempreflorens* are other excellent *Candytufts* that are perhaps better suited for planting on rockwork than in ordinary flower borders.

WORK TO BE DONE.—To peg down bedding plants, and to keep foliage beds true to design, clipping or pinching as may be required according to the nature of the plants to be operated on. No flowering plants should be allowed to seed, as this stops the succession of bloom. Especially is this likely to be the case with tufted *Pansies*, single *Dahlias*, *Verbenas*, *Calceolarias*, and *Sweet Peas*. Disbud *Dahlias* if quality rather than quantity is desired. Tie up the main branches before there is danger of their being broken by wind, rain, or by their own weight. Clip evergreen hedges and *Box edgings*. The weather has been so hot and dry that water is required. This should be given in quantity about twice a week. W. W.

Poppies.—The *Shirley Poppies* here continue to excite the warmest admiration. They merit it, for they are indeed remarkably beautiful. I am persuaded, however, that the wonderful profusion of bloom and remarkably fine flowers produced are chiefly due to the fact that the plants were raised from seed sown last autumn, and then transplanted with balls of soil singly during the winter. The earlier flowers seemed to be rather lost in the foliage, but that was a temporary defect. As the flowers from the side branches open it is found that they are thrown up well above the leafage on long stems, and have a very commanding appearance. Many of the blooms are semi-double,

here and there one or two, perhaps, quite double but none excel in beauty and in fine form and elegance the singles, because of the great breadth of petal, the two outer ones making a complete cup, and the two inner ones doing the same. Beyond the form and very great abundance of the blooms, their singularly beautiful colours specially attract attention. Almost only the zonal Pelargonium and the Begonia seem to rival these Poppies in colour production, but then the Poppies have such fine and graceful blooms. Many of the edged flowers are singularly pleasing, the colours showing no strong contrasts, but many refined ones. There is not a touch of black to be found in any of the flowers, but in many, especially in the scarlets, there is a white spot at the base of each petal, which is very pleasing. Whilst *Papaver umbrosum* is earlier and dwarfier, the Shirley Poppies produce finer flowers, and for a much longer period.—A. D.

Washing out the roots of plants.—I am glad to see "H. P." in *THE GARDEN* (p. 527) agreeing with the above practice, which I invariably adopt, especially when planting in the open air shrubs or Roses that have been grown in pots. I am convinced that it is the best thing to do. Moreover, how can a plant be expected to thrive or make a healthy growth if it is put into the ground with its roots matted into a hard ball? Last year in the middle of May I had to plant out about 200 Tea Roses which were in small pots, the plants being in full growth. I had a barrel of water brought to the beds, every ball washed out, and thus the roots became disentangled. After having been carefully planted and the soil watered home, although hot days followed, not a plant suffered, but all grew and gave a good autumn bloom. All the plants also came safely through the past winter. In dividing tufts of hardy plants, washing out is of great assistance and importance, as the divided plants are much better than those obtained by the orthodox way of ruthlessly chopping a large tuft into pieces with a spade, many shoots being often destroyed by the process. If the roots left upon the divided piece are brought into firm and direct contact with the fresh soil, growth starts much sooner and is healthier and stronger. It is not too much to say that success or non-success may depend wholly upon due attention being paid to this little, but important matter.—A. H.

Hoteia japonica.—When I was at Glen Eyre, Southampton, in the spring, I saw a big batch, some several hundreds probably, of *Hoteias* growing finely out in the open ground, and showing a luxuriant leafage. I have some plants here also growing just a little within the shelter of trees, and these have done equally well. I am of the firm belief that there is no reason whatever for our going to Holland for roots or clumps of these flowers, as they may be produced in enormous quantities and exceedingly fine at home. They should also be produced very cheaply, for probably 10,000 could be grown on an acre of ground, and as the Dutch price is 10s. per 100, the crop should be a paying one. Roots broken up, if grown on in good soil, should make potting clumps in two years, and as the dense growth of the plants kills weeds, the labour after once planting ought to be but trifling. Even the flower-spikes might be sold for some price, and carrying them would not harm the roots, as there is such a wealth of foliage usually to each plant. Those who have not seen a big mass of the white *Hoteia* outdoors can hardly realise how beautiful it is grown simply as a hardy plant. We treat it so much as a forcing pot plant, that for ordinary border decoration it has been somewhat overlooked. It is true that there are several very pretty hardy *Spiræas*, of which very beautiful are *palmeta* and *Aruncus*, but neither blooms so freely nor produces spikes of bloom so well adapted for bouquets or vases as the *japonica* variety. Perhaps some of our market growers already produce their own forcing clumps, and if so, a word as to their methods would be interesting.—A. D.

Pæonies.—Herbaceous Pæonies are at present most striking, and form a very distinct feature in the herbaceous garden. In groups among dwarf shrubs they have a splendid effect. I find they

do with very liberal treatment—mulching with good manure and plenty of water—during the flowering period. They do well in almost any position in shade or sunshine, they bloom very freely, and when grown in pots plunged in a good position they become matured early and form excellent plants for forcing.—M. T.

TUFTED PANSIES.

A MAGNIFICENT gathering of these in rich variety has come to me from Messrs. Dicksons, of Edinburgh. In colour, form, and fragrance they are far superior to anything that can be found among the blotched and belted race of show varieties. The gathering included such well-known and beautiful kinds as Countess of Hopetoun, Holyrood, and Archie Grant, but there were others in different and distinct shades not nearly so well known as they ought to be.

Those who are fond of the Countess of Kintore with its unique colour should grow *The Mearns*, which is a rich maroon, with lighter, almost white upper petals. Mrs. Holmes, Duke of Albany, and Duchess of Albany belong also to the type of which the Countess of Kintore is such a typical example. Royalty was a very rich, but soft yellow, with just a faint streak about the eye. A desirable yellow kind would be one without the slightest marking. We have pure whites, but as yet I do not know of a pure yellow, although it should be possible to easily obtain one. *Alba odorata* and *virginialis* may be added to the list of pure whites. Both are distinct and pretty, and fit associates for such standard kinds as Countess of Hopetoun and Mrs. Kinnear. It is a pity people call those white Pansies which have a great blue-black or purple eye. The so-called White King does not merit such a name, because it is not white, and the great eye in this variety, like that of many others, is coarse, and detracts from the beauty of the flower.

Some of the blue varieties, with an eye of a darker shade, are pretty, because there is harmony of colouring. Among these *Ajax* and *Formosa* are indispensable. Probably in the south of England we shall never grow these flowers as do Messrs. Dicksons. Even those sent by post, after their long journey looked cooler and fresher than ours upon the plants. Nevertheless, I am convinced that the tufted Pansies have a use in gardens the extent of which has not yet been fully realised. Those who have a cool, moist, half-shaded border might have tufted Pansies in full beauty the whole season through, but upon warmer soils their season should be in May. Good plantations made in autumn would during the latter part of April and throughout May be perfect sheets of blossom, whilst in the cool soils a spring plantation would continue flowering through the summer. But for spring and early summer alone these Pansies are indispensable in the flower garden. Their beauty will not be fully appreciated in the spring bedding, but it might be possible to have Pansy borders where the plants could remain till their beauty faded. After that they could be taken up, divided, and replanted in a nursery, the north side of a wall being a good place for such, and the border could be filled up with summer flowers kept on hand for the purpose. This is only one suggestion; others might be made; but in whatever way grown, I should like to see the cultivation of tufted Pansies taken up in gardens on a far more extensive scale than at present.

A. H.

Ramondia pyrenaica alba.—In reference to the note of "O. F. Lehenhof," at p. 606 of *THE GARDEN*, I should like to ask if there are not two or more varieties of the white *Ramondia*? I know the woodcut figure in *THE GARDEN* (Vol. XXVI, p. 129) to which he alludes, and if that illustration is a true one, as I believe it must be, then all I can say is that the white variety we grow here does not come up to that standard in size and form of flower, although the plant itself is quite as robust as the typical lilac-purple form growing beside it, and which all who have seen admit to be fairly luxuriant and beautiful, as covered with a canopy of a hundred or so of its Potato-like flowers. If

there is such a thing as a pure white-flowered *Ramondia pyrenaica* at Zurich, all I can say is that here we have a small flowered white suffused with flesh colour, with yellow stamens, so that it seems possible that the white varieties vary as much as the lilac-purple ones are known to do, and of which we have examples here. Our white-flowered *Ramondia* was a free gift to our collection, but I believe the kind donor paid something like fifteen or twenty francs for the plant as a baby, and although now well established and vigorous as far as leafage goes, the blossoms (as judged by the woodcut "O. F." cites) are, although numerous, very small, and certainly not white, *i.e.*, pure white, as *R. pyrenaica alba* is said to be.—F. W. B., *Dublin*.

Narcissus bulbs dying.—I should be obliged if you would kindly tell me under "E. C." in next week's *GARDEN* the cause of my losing my *Narcissus* bulbs. I send two as a sample of the way they rot. On looking at them early in the year I observed they were attacked by a small white caterpillar (of which you will see a specimen), and now the wireworms seem to be more plentiful than the former. The roots are eaten away and the bulbs are in some cases a mere pulp. The soil is naturally very light and poor, but of course receives some preparation for the *Narcissi*, which mostly bloom well. The common and more vigorous kinds are equally liable to the disease, to which more plants have succumbed this season than usual. Are the grubs the actual cause of the disease, and is there any remedy?—EDWARD L. M. COLVILLE.

* * * Your *Narcissus* bulbs are attacked by the bulb mite (*Rhizoglyphus echinopus*) and by snake millipedes. It is a very difficult matter to destroy these pests. I should take up all the bulbs and wash them well and only replant such as seem uninjured and put them into soil where bulbs have not been recently.—G. S. S.

SHORT NOTES.—FLOWER.

Enothera Lamarckiana is one of the strongest growing of the evening *Primroses*. It attains a height of 4 feet, and has bright yellow flowers of a very beautiful shade.

Pyrethrum corymbosum.—Those who have to meet a large demand for cut flowers should grow this *Pyrethrum* in quantity. The flowers, which are white, are about the size of a shilling, and borne in huge corymbs.—A. H.

Eccremocarpus scaber.—This is a delightful old-fashioned climber for walls, trellises, and pillars, and it is now in full bloom. The growth is exceedingly elegant, free, and vigorous; the flowers tubular and rich orange-red. It is a climber we should like to see more of.

Cyrtanthus Macowani.—This is a bright little Cape bulb, flowering freely last week in Messrs. Barr and Son's Tooting Nursery. The flowers are tubular, brilliant scarlet, and produced six or eight together in an umbel. It is a choice bulb for those who like such plants.

Arenaria loricifolia is a charming dwarf rock plant, making a dense carpet of mossy growth, now covered with pure white flowers. There is a patch of it in the herbaceous ground at Kew, but the rockery is its proper place. It was introduced from Switzerland early in the present century.

Double white Hepatica.—The name of this plant has been found sometimes in trade catalogues, but probably by error. The plant itself seems never to have been offered to the trade, and all the reports of its existence treat of accidental, not constant sports. A similar case among others is mentioned by William B. Boyd, Faldonside, Melrose, in *THE GARDEN*, March 11, 1882, p. 173. I have never seen nor heard of a figure published of the double white *Hepatica* anywhere.—J. H. KRELAGE, *Harlem*.

Linums.—These are very beautiful in the herbaceous ground at Kew, especially *L. perenne*, a graceful plant, as slender and delicate as Grass, the flowers rich blue, and about the size of a penny. *L. tenuifolium* is just as graceful, but it is of dwarfier growth; the flowers are about the same size and pure white. *L. campanulatum* is quite different; it makes a dense bushy plant, the leaves deep green, and the flowers rich yellow. Hard by was blooming the beautiful *L. grandiflorum coccineum*.

TREES AND SHRUBS.

GIANT IVIES.

THERE are many types of Ivy, each beautiful in its way, and each having its own special characteristics in leaf, growth, and requirements as to soil and position. The small-leaved kinds are usually tenderer than those with more vigorous and bolder foliage; and the Ivy enthusiast who grows a complete collection will find that several delicate varieties will need his special care and attention. The charm of the Ivy is its diversity of character. It has neither flower nor fragrance to render it attractive, but it has a richness and variety of foliage that

soil, moist preferred, and a fairly shady position. Shade is not essential, but it is desirable, as everyone knows who has noticed the richer and more luxuriant leafage produced by plants not exposed to the full glare of a summer sky from morn till even. There is in a suburban garden a damp shady wall entirely devoted to the large-leaved Ivies, and they quickly covered it with a mass of the most splendid leafage, tropical in its aspect, and cool and refreshing in summer. Some plants put in at the same time as the above, but in a hotter aspect and poorer soil, have not made half the progress. In the Royal Horticultural Gardens at Chiswick there is a good collection of Ivies, and the difference in the growth of

sometimes as much as 8 inches or 9 inches in length, sufficient to cover a large plate. There is a very rich mass of it in the gardens of Gunnersbury House, Acton, until lately the residence of Mr. H. J. Atkinson, where it rambles over a shed and the fruit room at the lower part of the grounds. It is just this kind of place that suits the large-leaved Ivies. Their massive foliage is in complete harmony with rough buildings and outhouses, though by this we do not mean to infer that they are not good wall kinds. More familiar than *dentata* is *Rœgnieriana*, which is a comparatively common Ivy, and may be found in many suburban gardens in positions where a smaller leaved type would have been in better keeping. It is a noble variety, climbs well, and the leaves are each often as much as 7 inches long and 5 inches wide, leathery, deep green, and very glossy. *Algeriensis* also has large leaves of a paler green than those of *Rœgnieriana*, thinner in texture, smooth, and variable in shape. Some of the forms of *canariensis* have very large foliage, but *dentata* and *Rœgnieriana* have the best claim to the distinction of "giant." There are some gardens where Ivies are well represented, but there is usually an undesirable repetition of Virginian Creepers, especially the close-growing, small, glossy-leaved *Veitchi*. We say nothing in disparagement of these, but a few more climbers of the nature of the Ivy would break the formality, and there can be no two opinions as to the richer beauty of the glossy-leaved Ivy *dentata* over the wild, coarse, and untidy *Ampelopsis*. We commend the larger-leaved Ivies to those who have out-buildings to cover with rich vegetation.



Hedera dentata.

atone for its failings in other respects. It is needless now to review the genus at any length, as our readers will find a lengthy article, illustrated by a few of the leading kinds, in THE GARDEN of November 24, 1888, and to that we refer them for detailed information. We confine our remarks here to what we have called the giant Ivies to distinguish them from the large selection of those having average and small-sized leaves. The kind illustrated, viz., *dentata*, has the greatest right to be called "giant." It has larger leaves than any Ivy, not excepting *Rœgnieriana*, *algeriensis*, or the largest form of the Irish Ivy. There is a special beauty in this class when appropriately placed, and they offer no difficulties in culture when given in the first instance a good loamy

those plants in a moist shady aspect, and those in the full sun is remarkable. It teaches us the value of well studying the nature of the things we plant. Many people made a false start in the cultivation of the Ivy. Any soil, situation, and treatment are thought fit for the most beautiful of evergreen climbers; but a good soil and careful attention until the plants show by their strong growth they can take care of themselves are well repaid by a more rapid growth and a richer surface of finely-coloured leaves. *Dentata* we have fixed as the largest-leaved Ivy. A good idea can be obtained of it from the accompanying illustration, which is taken from a young shoot. Its leaf is of cuneiform shape, occasionally toothed at the edge, of a fine rich green colour, and

It is very funny to read the following in an American journal about the probably toughest plant in Britain:—

The English Bilberry, the pretty little *Vaccinium Myrtillus*, is in flower. This is a small, glabrous shrub, growing only 8 inches or 10 inches high, with angled green branches, ovate, thin leaves, globular, solitary nodding, pale green flowers, tinged with red, and round, nearly black fruit, covered with a glaucous bloom. It is a native of Northern and Central Europe, extending to the great mountain ranges of Southern Europe, often covering wide tracts of ground. It is hardy here, but a delicate plant, requiring special care and attention.

Phillyrea Vilmoriniana.—From several sources I have heard that this handsome evergreen shrub is very difficult to propagate from cuttings, but such is not my experience, for I put in a considerable number about this time last year and nearly every one of them has struck root. The method I followed was to form the cutting entirely of the current season's growth, selecting for the purpose shoots of moderate vigour, as the very strong ones would not be so likely to root. Most of the shoots were cut off just at their base, as roots are produced more readily from the part immediately in contact with the older wood than from any other. The cuttings were dibbled into well-drained pots filled rather firmly with fine sandy soil, and, after being watered, were placed in a close propagating case where there was just a little gentle heat. The majority of the mstruck before winter, while with the return of spring the remainder soon took root.—T.

Flowering shrubs.—It seems that scarcity of bloom on flowering shrubs is this season general. Rhododendrons, which have always been so laden with bloom, are not so this season and mostly confined to certain kinds. Great numbers of healthy plants have scarcely shown a bloom. The masses of these are not without interest, as their dull, heavy-looking foliage is well balanced by single plants of Lilacs (which have not flowered so freely as usual), Laburnums, Golden Spiræas, Golden Elders, Retinosporas of sorts, variegated Hollies, Brooms, yellow and white. These are unusually beautiful and have flowered very abundantly; in fact, wherever Brooms have been planted, they

have done grandly this year. Hollies still retain their berries. The active growth which they are making does not seem to affect them. I never remember seeing such a growth on shrubs before, and many have had to be cut in to keep them from injuring their fellows. Shrub pruning does not seem to be generally understood. Very often Evergreens are left till they are overgrown and become naked towards the ground, and then a severe cutting follows. I prefer going over them yearly, just as growth is commencing, and doing a little while growth is active, avoiding formal pruning, but keeping the plants dense; flowering kinds are cut when the blooming is just over.—M. T.

CHINESE SHRUBS.

GYMNOCLADUS CHINENSIS—Easily distinguished from the North American species by its smaller and more numerous leaflets and much thicker pod. It is the Soap tree of China, the beans of which are used by the Chinese women to wash their hair. Described as a very handsome tree, growing in the provinces of Anwei, Chekiang, Kiangsi and Hupeh; figured in Hooker's "Icones Plantarum," t. 1412. It is in cultivation, I believe, in England and France.

MUCUNA (STIZOLOBIUM) SEMPERVIRENS—This is a new shrubby evergreen climber or trailer, producing branches of enormous length, like *Wistaria sinensis*; but it is doubtful whether it would bear the same amount of cold. *Wistaria sinensis* ranges from the mountains near Pekin to Ningpo, and Kinkiang and Ichang, if not even further south. Indeed there is a specimen in the Kew herbarium from Hongkong, collected by Wright, though without any indication of its origin, whether wild or cultivated. When this beautiful shrub was introduced into England, about the year 1816, it was nearly killed by being placed in a hot-house. At the same time *Rhynchospermum* or *Trachelospermum jasminoides* will flourish in a hot-house and flower abundantly, and almost equally as well out of doors in the south-west of England. Of this I have seen specimens from the hills near Shanghai, as well as from Formosa, Hongkong, and Ichang, and Maximowicz reports it from the north-west provinces of Shensi and Kansuh. Therefore, *Mucuna sempervirens* may prove hardy in the south and west of England and in similar climates. Respecting the climate of Ichang, Dr. Henry says that it is considerably milder than that of Shanghai, especially in the winter, and that very good Oranges are grown there. As there is not more than a degree of difference in the latitudes of the two places, one would have supposed the contrary to be the case, Shanghai being on the coast and Ichang between four or five hundred miles inland. Dr. Henry describes the flowers as very large, purplish, and somewhat fleshy, but when I described the plant, we had only quite young flower-buds, though flowers from Ningpo were suspected to belong to this species. This point has not yet been settled, and later consignments by Dr. Henry are not accessible at the present moment. On the other hand, M. Franchet, who is elaborating the magnificent collections made by the Abbé Delavay, sends to Kew flowers from the much more elevated region of Yunnan, which he identifies with *Mucuna sempervirens*, after having seen authentic fruiting specimens. These flowers are not more than half the size of those alluded to above from Ningpo, which are $2\frac{1}{2}$ inches to 3 inches long, and certainly do not belong to the same species; yet the Yunnan flowers may belong to *M. sempervirens*, and their relatively small size be due to a colder climate. It seems unlikely that Dr. Henry would have described the Yunnan flower as very large. Be that as it may, there is a living, flourishing plant at Kew, and we may not have long to wait for fresh flowers. Dr. Henry writes to the effect that the creeper from which specimens were taken occurs on the banks of the Yangtse, and is remarkable for its size and beauty. It extends along the face of the bank, and is supported by trees and rocks. The diameter of the main stem is sometimes as much as a foot.

ÆSCULUS.—Until quite recently it was supposed that *Æsculus chinensis* was in cultivation. In

1887 a young tree bore fruit in the celebrated arboretum at Segrez, and on comparison with type specimens it proved to be the Japanese *Æ. turbinata*, which is easily distinguished from the Chinese species by the much larger, fewer flowers in the clusters, and the broader leaflets of a rusty brown beneath. *Æ. turbinata* forms a small round-headed tree, hardy in the north of France and south of England. In foliage it is not unlike the common Horse Chestnut, but the leaves are borne on longer petioles and are fawn-coloured on the under surface. The flowers are somewhat smaller and similarly coloured, pink and white, with brown anthers. A coloured figure may be seen in the Japanese "Phonzo Zoufon," part lxii., plate 17, and the fruit is figured and described in the *Revue Horticole*, 1888, p. 496.—W. BOTTING HEMSLEY, in *Garden and Forest*.

THE LARGE-FRUITED CYPRESS.

(*CUPRESSUS MACROCARPA*.)

WHETHER as an ornamental, fast-growing, or, indeed, generally useful Conifer, but especially for planting in wind swept maritime districts, the large-fruited or Lambert's Cypress is particularly useful. Of late years it has been largely planted as a seaside tree, and rightly, too, for it is beyond doubt one of the most valuable subjects for planting along the seacoast, as it thrives perfectly well even down to high-water mark, and where its branches are not at all unfrequently lashed by the salt spray.

For cold, high-lying inland districts it is ill adapted, and repeated trials to get it established and to grow in anything like a satisfactory manner far away from the seacoast have been productive of but little good, it being essentially a maritime subject, the ozone of the atmosphere and usually mild air of the coast suiting it well.

As an ornamental tree it ranks high, the decided green of its thickly-produced foliage and usually massive proportions rendering it, when of fair size and in good health, one of the most desirable of our lawn or woodland evergreen trees.

There seem to be two distinct forms in cultivation in this country, one of a broad table-headed and Cedar-like appearance, and the other of usually strict habit, and with a greater inclination to throw the strength of its substance into the formation of stem than that of many weighty side branches. Both forms reproduce themselves from cuttings or by grafting, so that whichever is most desirable may be readily enough propagated in quantity. Seed is produced in great abundance, and young plants may be quickly reared from these, and this, in my opinion, is the most suitable method of increase, the young plants possessing greater vigour and requiring less pruning than such as are raised from cuttings. The timber of *Cupressus Lambertiana* or *macrocarpa*, as produced in this country, is of very superior quality, it being hard and close grained, and capable of a good polish. Usually the graining is beautifully gnarled, not unlike some choice pieces of the wood of the best kinds of Walnut, and the glossy polish is both clear and distinct. As to the quality of soil that is best suited for the wants of this Cypress, a number of experiments carried out some years ago clearly proved that a friable, open loam, resting on broken rock produced in a given number of years the finest, most healthy-looking, and largest specimens. Rocky *débris*, particularly if mixed with decomposed drift, would seem to be peculiarly well suited for its wants, the long roots evincing a great liking for running between broken up masses of rock. Many fine examples of this tree on other soils than those just described are not wanting, but that it will eventually attain to the largest proportions amongst rocky *débris* is, I think, pretty conclusive.

Should any person unacquainted with planting wish to procure and use this highly ornamental Cypress for his lawn or garden decoration, let him proceed as follows: Unless the soil, where it is to be planted is free and rich, substitute other of better quality by digging out a pit 6 feet in diameter and a yard deep; fill this up with big stones and

leaf-mould or any free loamy soil; procure a well-rooted plant about 4 feet in height; spread the roots well out on the prepared bed, and at 6 inches from the ground level and cover over with soil. Staking may be necessary if the situation is exposed.

A. D. WEBSTER.

Genista virgata.—This Broom forms a striking feature in Kew Gardens, in many parts of which large rounded bushes, 10 feet or more in height, are to be found, and which are heavily laden with blossoms. It is certainly one of the most conspicuous shrubs we have in flower at the present time, its value in this respect being still further enhanced by the fact that the bulk of the yellow-flowered Leguminosæ, including the Laburnums, are all over. Like most of its class, this Broom will grow on dry sandy soils, and it will also hold its own fairly well, even under the shade and drip of trees. It is of quick growth, and consequently soon attains flowering size, yet it is a comparatively rare plant. It was long-known at Kew as *G. elata*, but the specific name has now been changed to *virgata*.—T.

GARDEN FLORA.

PLATE 708.

SINGLE-FLOWERED PÆONIES.

(WITH A COLOURED PLATE OF P. WHITLEYI. *)

THE single-flowered Pæonies have not been forgotten in the fashion for single flowers that has made itself manifest in the past three or four years, and the charming displays of them at the leading exhibitions this season will do much to bring them before a flower loving public. Such a variety as the single Whitleyi, represented in the coloured illustration, is a type of flower that has a grace peculiarly its own, and a purity, boldness, and yet refinement certainly wanting in the double varieties, of which there is now a lengthy list. We miss in the single kinds the brilliancy, richness, and fulness of the double varieties; but there is room for both in the garden, when judiciously placed, so as to obtain fine effects without a garish display of colour or crude contrast. There is an art in properly placing a plant with due regard to its surroundings that is not in the happy possession of everyone who attempts to make good effects, and the Pæony is one of those things that suffers from indifferent management. It is usually relegated to a hot border, where it does grow, because its vigorous constitution fits it for almost any position, but in such a place its noble leafage and gaudy flowers are scarcely seen in their best light. Groups of separate and the best kinds should be formed upon the outskirts of the lawn, in the pleasure grounds, by the sides of carriage drives, wild garden, or spots where a richly-coloured flower is wanted to light up the garden landscape, and to give a rich effect from a distance. In respect to the single-flowered section, it is almost essential to provide some shade, as the tender flowers, which offer little resistance to adverse conditions, are quickly and irretrievably damaged by heavy rains, and in a hot sun soon lose their fresh colours. The ephemeral character of the flowers of the single Pæonies is one of their disadvantages, but it may be remedied by planting near trees, so that the plants may have the shelter and shade of overhanging branches, and shade is in no way detrimental, but retards the flowering and protects the frail blooms from the bright sunshine of early June days. If a display is required as long as possible, plant *P. officinalis*, with *P. albiflora* and its varieties to form the succes-

* Drawn for THE GARDEN by H. G. Moon, in the Broxbourne Nursery, May 28, 1889. Lithographed and printed by Guillaume Severeys.

sion, as the last-mentioned of the two does not commence to bloom for several day later.

There is one thing that should be a comfort to amateurs who have little time comparatively to give to the culture of plants and a short purse, and that is the *Pæony* requires very little attention; also once a good stock is obtained it is an easy matter to increase it by division of the roots. The luxuriant rows of the old double crimson variety, that makes rich rounded bushes of vegetation in many a cottage garden and stately parterre, are evidence of the peculiar suitability of the *Pæony* for our climate and soil. Some preparation is necessary when the finest growth possible is desired, and the first essential is a strong, moist soil, such as is given by Messrs. Kelway and Sons, Langport, Messrs. Barr and Son, Tooting, Mr. Ware, Tottenham, and Messrs. Paul and Son, Broxbourne. The natural staple will suffice if it is deeply trenched and plenty of manure worked in so as to give the plants a good start in life. When this is done and the planting finished, the great point which many do not realise is to leave them alone to grow in their own way into large bushy specimens. More hardy flowers are killed with kindness than from any inherent weakness in the plants themselves. Few things dislike disturbance at the roots more than *Pæonies*, especially the single kinds, and more particularly the species which are mentioned in the course of this article. In the propagation of *Pæonies* no more division of the roots should be practised than is absolutely necessary, as the parent plant is weakened by the process, and the best time for this and also planting is October, though the work may be done any time between then and the following March. In hot weather, such as we are experiencing at the present time, it is advisable to thoroughly water the clumps of single *Pæonies* of the choicer kinds, as without this assistance the plants are likely to suffer considerably.

The flowers of the single *Pæonies* give a varied series of colours, from the clear white of the single *Whitleyi* to the deep maroon of such kinds as *Millais*. The list is ever increasing—a reflex of the energy of the florist who is always adding new varieties, each having some special characteristic in shape or colour; some are almost of cup-like form, others open, and in a few varieties the stamens are distinctly twisted, the colours various, and when gold and crimson are combined the flower is as rich as a gorgeous robe.

There are many species and varieties which are worth a place in the garden, and we may have, for the sake of introducing as much variety as possible, a few of the species that are seldom seen except in botanic establishments or the garden of some keen enthusiast.

P. ALBIFLORA.—This is the parent of the many double varieties of *Pæony* that flower in June, and it forms a charming succession to *officinalis*, which is in beauty quite a fortnight earlier. Of the double varieties of each of these distinct species we have nothing to do with now, as it is only the single types that we are considering. The true *P. albiflora* is a beautiful flower, usually of a pink or white shade, but variable, and with the handsome blooms standing well above the tufts of foliage. The stems, which rise about 2½ feet high, are usually branching, and the flowers are exceedingly sweet. And this reminds one that the *Pæony* is one of our most fragrant hardy flowers. In some instances the scent is unpleasantly pungent, but occasionally as sweet and refreshing as that of the Rose. The leaves are comparatively large, broad, bright green, with veins of a rich red colour. It is a native of China and Siberia, from whence we believe it was introduced about the year 1550. There are several described varieties of it, and amongst the

number *P. a. Whitleyi*, the single form of which is represented in the coloured plate, and is thus known in the trade. The flowers were sent us by Messrs. Paul and Son, of Broxbourne. It is a pure white variety, and with a golden bunch of stamens in the centre to give life to the bloom. The type was introduced from China early in the present century by a Fulham nurseryman of the name of *Whitley*, from whom we presume it obtains its title. The stems reach a height of 3 feet, and the flowers are very large, quite double, the outer surface of the petals of a reddish tint, and the inside straw colour, which changes gradually to a clearer shade. The fragrance reminds one of *Elder*. Other good forms are *rubescens*, *laciniata*, *fragrans*, and *Humei*, all varieties of *albiflora*.

P. ANOMALA is less desirable than the single *albiflora*, but those who wish for a representative collection should have it. The flowers are rich crimson, and pretty in their setting of lanceolate leaves. It is a European species, and was introduced towards the close of the sixteenth century. *P. Fischeri* and *intermedia* are synonyms. It is not striking in the garden, but is a distinct and interesting form.

P. ARIETINA is allied to *peregrina*, and has rosy crimson flowers. In the variety *Baxteri* the colour is crimson, and both bloom together. The type is a European species, with a stem from 2 feet to 3 feet high, and is the same as *P. cretica*.

P. TENUIFOLIA is an exceedingly elegant garden plant, the foliage feathery, finely divided, and graceful. It is well worth growing both in its single and double form, and when in bloom has a charming appearance with the crimson flowers surrounded by the linear leaves. In the *Botanical Magazine* it is mentioned as growing naturally in the Ukraine and about the precipices on the borders of the Volga. A good garden flower is the double variety, which is well known. The type was introduced about the year 1760.

P. PEREGRINA is common in cultivation, and is a Levantine species with crimson flowers and bold foliage. It is synonymous with *P. pubens*, and was introduced as far back as the early part of the year 1600.

P. OFFICINALIS in its single state is a beautiful garden flower, bright crimson in colour, the petals imbricated and bold. It has a stout glabrous stem between 2 feet and 3 feet high, and was cultivated in England as far back as 1548.

P. WHITMANNIANA is a very distinct and handsome species found in *Abeharia* by Count *Woronzoff* as recently as 1842; it occurs in the Caucasus and North Persia, and has yellowish white flowers borne on a single stem that rises about 2 feet in height. It is as yet rare in cultivation.

There are several other single *Pæonies* that those anxious to have a good collection apart from the intrinsic beauty of the various types might include, such as *Browni*, very rare, if it is in cultivation at all; *corallina*, a good species for the wild garden, but very scarce; the crimson-flowered *decora*; *Emodi*, rare; *humilis*, *mollis* and *triternata*. Such types are only for the enthusiast in the culture of the flower. We have a rich series of florists' varieties that are infinitely superior, giving a surprising range of various shades, and making rich clumps of foliage. The single types when grown in masses make a rich effect, more so than when a single clump is disposed here and there, as quantity is required to make up for the handsomer, showier, and larger flowers that are borne by the double kinds. A few good single types are—

NABIS.—A flower of large size, good form, and bright purple in colour.

ABOLANI.—A variety of excellent form, the colour of the flowers rose-purple.

MILLAIS.—A bold, handsome flower of a deep maroon colour, a contrast to varieties of a lighter shade.

BRIDESMAID.—A beautiful variety, globular in

shape, and exceedingly delicate in colour, this being white, with a lovely flesh tint.

PEREGRINA BRILLIANT.—A beautiful single type, the flowers well shaped, and bright rose-magenta in colour.

AGLAIA.—A beautiful variety, the flowers rich crimson.

FLORENTINE.—Desirable for its decided pink colour.

CALLIPHON.—A distinct kind, with well-shaped flowers of a rose shade.

BROTERI bloomed, we believe, for the first time in England three years ago with Messrs. Barr and Son, of Tooting; the flowers crimson and fragrant. It grows about 2 feet in height.

SABINI.—A variety of *officinalis*, the colour rich crimson, and the stamens yellow.

CHRYSANTHEMUMS.

E. MOLYNEUX.

LARGE-FLOWERED ANEMONE SECTION.

LADY MARGARET FAMILY.—Of all the varieties contained in this section of *Chrysanthemums*, there is, perhaps, not one so highly prized for exhibition as *Lady Margaret* when seen in good condition. Well-grown blooms carry very full centres, which is the most essential point to aim at in the cultivation of this section. Of course a full-centred bloom having a thin irregular ray of guard florets could not be considered perfect, but it hardly ever occurs that a full-centred *Anemone* bloom is deficient in guard florets, except when they decay, or get damaged by insects or any other cause. As a rule good ray florets and perfect disc go hand-in-hand. There is one defect in this variety—the extremely tall growth which strong plants make during the season, a height of 7 feet being nothing unusual for this variety to reach when the plants are allowed to grow away at will without having their points removed at any stage. *Lady Margaret* is easily known by its foliage and manner of growth; the leaves are deeply serrated and the young bark is exceptionally dark, while the lower part of the stems quickly assumes a ripened appearance. The variety is not characteristic for great strength of branches, and under ordinary circumstances produces cuttings freely. As a whole, it is one of the most certain sorts to produce blooms, and one generally depended upon by exhibitors for specimen flowers. Owing to its naturally tall growth it is not so well adapted for cultivation in the form of dwarf bushes intended to produce abundance of flowers for conservatory decoration only.

MISS ANNIE LOWE is a sport from *Lady Margaret*, which it resembles both in the formation of the blooms and in growth, except that in the latter respect the bark is not so dark in colour. The flower is of very pleasing colour, the guard florets being bright yellow, while the disc is of a much lighter shade. It is a variety which is certain to be largely grown, both for exhibition and home decoration on account of its attractive colour, which stands quite alone in this section. At present it has not been seen in such good condition as its parent, owing possibly to the absence of suitable plants. In the course of another season we may expect to see this variety developed more in the form of its parent. It requires exactly the same method of cultivation as does the bulk of *Anemone* sorts—to be grown on the tall system, the buds to be thinned to one bloom on a shoot, and these to be limited to three to a

plant. It was during the year 1887 that this variety was introduced.

MME. GODERAU FAMILY.—With the exception of *Fleur de Marie*, this variety is one of the oldest leading varieties in this section, having been introduced as far back as 1854, while *Fleur de Marie* dates back eight years further. The form of *Mme. Goderau* is of the finest, having a full centre and evenly rounded guard florets, its only fault being the smallness of its blooms. This has a deterrent effect upon the cultivation of sorts of this class. The introduction of the more showy Japanese *Anemones* has, no doubt, been the main cause of the lack of interest in the growth of large-flowered *Anemone* kinds, and at one time the sorts belonging to the new section bade fair to elbow out the older and more prim-looking of the two, but since societies have given encouragement by offering prizes for both sections in separate classes, both kinds will have a much better chance. As a decorative variety *Mme. Goderau* is appreciated by many persons. The majority of the plants do not grow over 4 feet high when they are treated on the tall method. The guard florets are white, the centre being pale sulphur.

MRS. M. RUSSELL is a sport from the above, and was brought out in 1887. It has all the characteristics of its parent in habit of growth and formation of the flowers, which are certainly more attractive in their colouring. This is deep yellow in the guard florets, while the disc is of a much lighter shade. This variety, owing to the smallness of the blooms, is valuable for decorations, and for this purpose it is mainly cultivated.

KITCHEN GARDEN.

HARDY BROCCOLI.

THERE are no really hardy varieties of Broccoli, the nearest approach being found in the old *Miller's Dwarf Late White* and the *Purple Sprouting* (see illustration). Superior hardness, however, is the only recommendation of



Purple Sprouting Broccoli.

the former, but the sprouting forms of Broccoli, both purple and white, might well be more extensively grown in private gardens than is the case generally. These have not unfrequently survived the choicer varieties, hundreds of tons being cut from the open fields and sent to the markets in times of scarcity of green food

long before they had formed sprouts; but they cannot be said to be very profitable or much in demand when the Broccoli proper are available in large quantities. Of the ordinary Broccoli there are numerous excellent varieties, and these, if rightly treated, may be rendered comparatively hardy without detriment to the size or quality of the hearts. The first to succumb to frosts are those with long naked stems, the latter being the most vital part of the plant, and it follows that all cannot well be too dwarf and sturdy. It must be a very severe frost that will destroy the majority of Broccoli when they are well furnished with leaves close to the ground, the only exceptions to the rule being the *White* and *Purple Cape* (see illustration), *Walcheren*, and *Osborn's Winter White*, none of which are much hardier than Cauliflowers. The strong-growing *Early Penzance* is very delicate, and of little service except in Cornwall; while the invaluable *Veitch's Autumn Protecting* unfortunately is also far from being hardy. *Snow's Winter White*, *Spring White*, *Cooling's Matchless*, *Dilcock's Bride*, *Leamington*, *Frogmore Protecting*, *Model*, *Champion Late White*, *Gilbert's Victoria*, *Standwell*, *Lauder's Goschen*, *Safeguard*, *Late Queen*, *Wilcove Improved*, *Ledsham's Latest* of All



Purple Cape Broccoli.

may all be classed as fairly hardy, but whether they will survive extra severe weather depends principally upon the method of culture adopted.

Heavily manured, deeply dug, and loose ground causes Broccoli to form rank growth and long stems, which eventually lose their lower leaves, and are exposed to all weathers. Nor should the rows of plants be put out among Potatoes, or in any other position where they are liable to become badly drawn. Such positions may answer well for autumn Cauliflowers and the earliest Broccoli, these being lifted and stored in houses, pits, and sheds before severe frosts cripple them, but very rarely can hardy plants be prepared except in open and comparatively solid ground. Not unfrequently Broccoli grown in the open fields escape when the greater portion of those in private gardens have collapsed. The former being put out on firm and only ploughed ground, also receiving the benefit of plenty of light and air, naturally form sturdy growth, the leaves effectually protecting the stems. Very few gardeners can devote open, well-exposed quarters to Broccoli culture, but they can in most instances plant on firmer ground, and allow the plants more room than heretofore. If the ground has already been manured and either trenched or dug, the first proceeding should be to level the surface and heavily trample it, making it as solid as possible. Then if the

rows of plants are put out 3 feet apart, a distance of not less than 30 inches separating them in the rows, the probability is all will grow strongly, yet sturdily, and be capable of resisting all but the most severe frosts. In the southern counties Broccoli may be planted in close succession to early Potatoes, and the old *Celery* quarters also answer well. The surface of the ground being duly cleared of all weeds and rubbish and levelled, this also should be heavily trampled prior to putting out the Broccoli plants. Where the early and second early Peas can be cleared off by the middle of July, Broccoli may be put out in succession, and without any manuring or digging. We usually follow the earliest Peas with a breadth of *Snow's Winter White*, and this crop is cleared off in time for the ground to be got into good order for other early vegetables in the following spring.

Some of the hardiest and best breadths of Broccoli I have ever seen were planted in close succession to Strawberries. It is the practice in many gardens to plant a few or many fresh rows of Strawberries every summer, an equal number of worn-out old plants being destroyed. These naturally leave the ground in a very solid state, but not so greatly impoverished as might be imagined. As a matter of fact, Strawberries that have been liberally treated throughout their career do not nearly exhaust the supply of various fertilising constituents contained in the soil, and it is therefore most unwise to manure and dig nearly cleared ground preparatory to putting out Broccoli. We find it expedient to arrange the rows of Strawberries 30 inches apart, and after these are cut off with a spade and the ground cleared of all rubbish, the rows of Broccoli are planted midway between the old lines of Strawberries, also 30 inches apart. In some instances it is necessary to form the holes with the aid of a crowbar, but as a rule the plants can be put out with a trowel. Planting with a crowbar or a dibber answers very well when the plants are drawn from a seed-bed, but any that have been pricked out ought to be moved with a ball of soil about the roots and replanted with a trowel. In any case, the soil should be firmly fixed about the roots and a good watering given.

The sprouting Broccoli hold their lower leaves well, and therefore may be more liberally treated, especially seeing that the stronger the stems are the more plentiful will the sprouts be. These should be planted early on well-manured ground and allowed a distance of 30 inches apart each way, but on light or poor soils a distance of 2 feet apart is ample.

W. IGGULDEN.

Laxton's Supreme Pea.—This Pea, one of Mr. Laxton's raising, is well known, because it made a great reputation when originally sent out, and it was looked upon as a standard garden and market gardener's Pea. It grows about 4 feet in height, has handsome, well filled, and slightly curved pods, the dry seed being medium-sized and of a pale greyish blue colour. It is found very difficult to maintain a true and fine stock of it, and it is necessary to "rogue" it twice, as the seedsmen say—once when the plants are young, when anything that is running up and differs in character is pulled out; the other period of roguing is when the Peas are podding. There appears to be something inherent in this Pea that causes it to run out and assume different forms. It is a Pea in large demand, and thus the task of keeping it true to character is rendered all the more laborious. During June the work of roguing is carried on extensively

by our London wholesale seed houses. In some of the home counties, and in some farther afield, such as Lincolnshire, Peas are largely grown for the wholesale seed houses, who enter into a contract with farmers to grow for them a certain number of acres of two or three or more varieties, the seedsmen sending the Peas which have to be sown, as they keep selected stocks for this purpose. When the Peas are in pod the seedsmen send reliable men, who go among them in the fields and pull out all plants that are not true to character. This is done with great care, and it is a process absolutely essential to keeping the stocks perfectly true. One can well imagine what a disagreeable task this must be in such a summer as 1888, or, indeed, at any time when the weather is rainy.—R. D.

KITCHEN GARDEN NOTES. EXHIBITION PEAS.

DURING July and the early part of August innumerable flower shows are held in various parts of the country, and at the most of these, vegetables are largely shown. In many instances classes are provided specially for Peas, and in any case a good dish ought to be found in every collection of vegetables. Very good samples may frequently be gathered from rows treated in the ordinary manner, but, as a rule, those exceptionally fine and well-filled pods to be seen at most shows are not so obtained. It will always be found that the finest pods are to be had from thinly-grown plants that have only just arrived at a bearing stage. When, therefore, it is seen that pods are forming before they are wanted for exhibition they ought at once to be removed, and not till about ten days before the show should they be allowed to remain on the plant and develop to their full size. This is by no means a wasteful proceeding, as the principal portion of the crop is not destroyed, but only retarded. If one or two long rows cannot be extra well treated, then be content with less and do them well. From first to last the soil about the roots ought to be kept in a moist state, and liquid manure, rich in phosphates and potash, freely given, nothing answering so well as the blood manure to be obtained of most butchers. Whatever is used ought to be applied when the soil is comparatively moist, and it should be given liberally at least once a week. When the time has arrived for reserving the best-shaped pods the point of the haulm should be pinched out, and this will further concentrate the sap on the light crops left on each plant. Thus well treated, the plants will produce extra large, well-coloured, and closely-filled pods, which, if gathered while the dew is on them, and carefully laid on clean paper and kept cool till wanted, will be in prime condition when examined by the judges. Telegraph, Strata-gem, Telephone, Triumph, Dwarf Mammoth, and Matchless are all fine varieties and suitable for exhibition during July; while the favourites for August are Duke of Albany (one of the best), Autocrat, and Ne Plus Ultra. The last named is the least showy of all the varieties recommended for exhibition purposes; but if well grown and shown when quite fresh it always counts well, the fact of its being generally considered one of the most serviceable Peas in cultivation having some weight with the judges.

EXTRA LARGE BROAD BEANS.

Much that has been advanced concerning show Peas is also applicable to Broad Beans. These when exhibited ought to be long, straight, well-filled, yet perfectly fresh, and the plants to produce such must not be exhausted long before the pods are required. It is advisable to place a stake to each reserved growth, and also to top the plants after the pods are set. As a rule exhibition varieties, such as Seville Longpod, Monarch, and the extra long Leviathan or Aquadulce, do not set heavy crops, but should there be exceptions, then must the pods be freely thinned out, only those that give promise of growing to the largest size being reserved. Plenty of soft water, liquid manure, and a mulch of some kind will do the rest. After July, Broad Beans have but little weight in collections of vegetables, and ought only to be

shown in the classes that may be provided for them. In the southern counties it will have become too hot for the long-pod section, and the best of the true broad-pods ought to be specially grown for exhibition in August.

KIDNEY AND RUNNER BEANS.

July, or before the runner Beans are available, is the time to show the former in collections, but in many prize schedules, classes are specially provided for them. In any case the pods shown cannot well be too long and straight, of even size, and tender, and these, again, can only be had from unexhausted plants. Canadian Wonder is the most popular exhibition variety, but a good selection of Negro Longpod is nearly equal to it. The seed ought to have been sown about eleven weeks before the date of show, in rows not less than 2 feet apart, the plants being eventually thinned out to a distance of 12 inches apart, and each receive a stake. Given good room, kept upright, and not starved at the roots the plants grow strongly, branch freely, and produce abundance of long, straight, deep green pods. These ought to be freely thinned out, any formed previous to about seven days before the show being pinched off early. Those shown should be of a uniform size and length, and ought to snap clean in two when tried by the judges. If they will not do that, they are too old, and will be passed over in favour of younger and it may be smaller pods. Exhibition varieties have become more numerous of late years; the Jubilee, Ne Plus Ultra, Girtford Giant, Giant White, The Czar, and Mammoth Scarlet, if not perfectly distinct in all cases, always produce extra fine pods. The plants ought to be grown thinly, that is to say, from 12 inches to 18 inches apart, should receive liberal supplies of soft water and liquid manure, sewage answering as well as anything I have tried, and be kept from producing heavy crops. Only one or two of the best formed young pods ought to be left of each cluster that may set, and these favoured ones will rapidly attain a length of 12 inches or thereabouts, and a breadth of 1 inch or rather more. Quality, however, must not be sacrificed to great size, as should the pods be of a bad colour and too old to snap cleanly in two, it is very doubtful if they will receive the award of a first prize.

ONIONS FOR EXHIBITION.

For the early shows or those held in June and early in July the Early White Naples Tripoli is the best that can be shown, this, though not attaining a great size, being usually of good form or not too flat and hollow at the base, and it can be exhibited clean and tempting in appearance. Later on, the Flat Italian Tripoli, notably White Mammoth and White Elephant, are most suitable, but by the middle of August very fine bulbs of White Spanish varieties can be had—in the southern counties, at any rate. In order to have these sufficiently early it is necessary to sow the seed in the open ground about the middle of August and transplant early in the spring, or the plants may be raised in heat very early in the year, and eventually put out where they are to mature. According to my experience the best shaped and the most perfectly ripened bulbs can be had without having recourse to the watering-pot, but those who have to deal with a naturally dry hot soil must water the plants in hot dry weather. Nor should the watering be delayed till the ground has become thoroughly dry and the bulbs have partially ceased to swell, as a renewal of moisture at the roots in this case is apt to cause a second and very uneven swelling. Extra large handsome bulbs being required, the plants ought to have good room, the larger Tripolis, including the heavy Giant Rocca, being put out fully 9 inches apart, and the rest either planted or thinned to a distance of about 6 inches apart in the rows. The firmer the root-run, the more handsome and solid will the Onions be. Frequently and lightly stir the surface with a Dutch hoe, this process being most often repeated where the soil is apt first to run together and then crack badly in hot weather. A free use of soot on all soils with a small quantity of salt for light ground is good for Onions, and a light surfacing of either guano or one of the many special manures acts very beneficially. When it is seen

which will form the most perfect exhibition bulbs these should have extra attention, those predisposed to form strong tops and ill-formed bulbs not paying for it. When it has become necessary to water, first lightly loosen the surface of the ground with a plunging fork, then sprinkle over the manure and wash it in. The following day the surface should again be loosened and the moisture will be more closely preserved if a thin mulching of either Coconut fibre, leaf-soil, or even fine dry soil is at once given. Follow up the watering as often as the soil is found approaching dryness, half measures being worse than useless. If the necks are inclined to be coarse, or the bulbs do not swell so rapidly as could be wished, carefully twist down the tops and this will have the effect desired.

CLEAN CARROTS.

Strong, heavy land or ground that contains much raw manure generally produces coarse, ugly roots, the cleanest and best shaped being drawn from free-working or light sandy peaty soils that were freely manured for the preceding crop. Those who have not specially prepared their clayey land for Carrots must not thin out the plants too freely, but if they are from 5 inches to 6 inches apart a considerable number of the roots may turn out of better form and colour than expected. When left to about 12 inches apart the roots become coarse and are liable to crack badly. The stump-rooted or Horn varieties require even less room. For the early shows the Nantes Horn are best, and a really good dish of this popular variety is hard to beat even as late as August. The light hot-beds and surfacing of fine sandy soil used for forwarding Carrots, whether covered with a frame or not, ought to be stripped of their contents, especially if either of the larger Horn varieties are grown. If a few of these are left just clear of each other all over the bed and not allowed to suffer for want of water (they do not require much of this if the manure underneath is moist), several dishes of very clean, comparatively large and brightly coloured roots can be drawn at any time during July and the early part of August, and these will count well on the exhibition table. Those on warm borders will also grow to a good size if similarly treated, while any in the open should have the surface soil about them frequently stirred, and they will further be much benefited by a mulching of Grass from the mowing machine or some other kind of mulching. Very handsome samples of the New Intermediate or Matchless can be drawn from the rows in the open ground, and last season we had Scarlet Perfection very good from heavy land.

HANDSOME TOMATOES.

Fruit to win prizes ought to be both large and handsome in appearance, that is to say, should have no ugly central scars and be as near perfect in form, according to the type, as possible. The preference ought also to be given to those of a deep rich red or scarlet colour, any of the Perfection type, including Ham Green Favourite and Hackwood Park Prolific being of the most "taking" appearance, and next to these a good selection of Old Red. The pink or cornelian red varieties are objectionable in point of colour only, and I would not compete with them unless a collection of Tomatoes were shown or a good dish of a rich red variety was not forthcoming. On nearly all the strong bunches of bloom the first to open is extra large and malformed, this, if preserved, being followed by an equally ugly fruit. These ugly flowers ought to be pinched out as soon as possible, this greatly strengthening the remainder. Then if each cluster of fruit is when quite small reduced to about three in number, all will attain exhibition size and form. Young plants usually produce the finest fruit, but if given occasional top-dressings of good loamy compost to encourage root action, lightly cropped and otherwise liberally treated they will continue to produce fine fruit. Plants in pots may be allowed to root through into a rich bed or border of soil, and this will keep them in a vigorous, yet fruitful state. If the fruit has a tendency to crack, cut early and ripen on a dry shelf. W. I.

Early Milan Turnip.—This variety has again proved the earliest of all. We dug up roots of it on

May 21, and they measured 5 inches and 6 inches in circumference. I regard it as a most valuable early kind.—J. MUIR.

ORCHIDS.

W. H. GOWER.

CATTELEYA WARNERI.

THE various members of the genus *Cattleya* are again attracting the attention of Orchid growers in a marked manner. And no wonder, for the size of the flowers, coupled with their beautiful colours and markings, and the number of varieties which are produced, render *Cattleyas* very effective. Many years ago I remember seeing a magnificent collection of plants and varieties of *C. Mossiæ* (the like of which does not exist even at the present day in any one collection) in Mr. Robert Warner's houses at Broomfield, Chelmsford. These plants were grown and flowered splendidly, and I believe it was Mr. Warner's love for these *Cattleyas* which induced the Messrs. Low, of Clapton, to name the kind I now have under consideration after him, and which flowered at Broomfield for the first time in Europe, now close upon thirty years ago. Since its first introduction, many thousands have been brought to this country. Few of these, however, have borne flowers of such excellence as the first plants, whilst many have produced blooms greatly inferior both in size and colour; indeed I much question if better forms of this plant have ever been seen than the one first flowered by Mr. Warner in 1860. This plant is a near ally of *C. labiata*, the species upon which Lindley founded the genus, but if it were again to be named I do not think such a name would be given, as it simply means a lip, or at most a full lip; and there are several kinds which now considerably exceed that in dimensions.

I recently saw a very fine form of *C. Warneri* in flower (with many other *Cattleyas*) in the Cambridge Lodge collection at Camberwell, a form nearly equalling the original in size and depth of colour, and forming a magnificent contrast to the various forms of *Mendeli* and *Mossiæ*, by which it was surrounded. *C. Warneri* much resembles the old *C. labiata*, but it flowers at a different season, and there are great differences which can be easily seen in the living plant, but which those who only pore over their herbarium specimens and refuse the aid of garden plants would never detect. The pseudo-bulbs are stout, and bear on the apex a broad, strap-shaped leaf, which is flat, thick, and fleshy in texture, deep green on the upper side, paler below, where it is frequently tinged with red. The flowers are produced through the months of May, June, and July from a growth of the previous year, and the scape bears as many as five blooms, each measuring from 6 inches to 8 inches across; the sepals and petals are deep rosy mauve; the petals are large and full, and crisp on the front edges. The lip on the outside is of the same colour as the sepals and petals; the large expanded front lobe is beautifully crisp on the margin, the greater part of it being of a rich rosy crimson, the basal part at the sides creamy white; disc and throat orange-yellow, streaked with white and rosy lilac. This beautiful *Cattleya* is a native of Brazil, but I do not think its precise locality has ever been disclosed, although, as it has been found by several people, there can be no real benefit to anyone in thus refusing to let us know under what conditions it is found in a state of nature. It grows well, however, in the intermediate house with other allied kinds, that is to say, in a temperature of from 75° to 85° in the daytime. This may be allowed to

fall to 65° at night, and in the winter months during the day from 65° to 70°, falling at night to 60°. In a temperature lower than this I do not consider it advisable to keep *Cattleyas*. During the winter months little or no moisture should pervade the house, but the plants themselves should not be kept entirely dry, or at least should not be allowed to become so dry as to cause the slightest shrivelling in the pseudo-bulbs, for when this begins with *Cattleyas* it is not easily stopped, and the affected plants usually require a long time and special attention to again restore them to health. During the resting season, therefore, it is requisite to carefully watch them, and supply a sufficient quantity of water to just keep the bulbs plump, without causing them to start prematurely into growth. In the summer, *Cattleyas* enjoy an abundance of moisture in the atmosphere, but although they like a fair amount of water at the roots, this may be easily overdone, and is, in fact, frequently administered in far too great a quantity by amateur growers, so that the soil becomes so overcharged with moisture, that the potting material becomes sour, from which moment *Cattleyas* will begin to deteriorate in health. This, I feel persuaded, is one of the chief reasons why this genus has been under a cloud for some years.

Trichopilia crisa.—The various members of this genus again appear to becoming popular, and this species, for which Mr. Williams has long been noted, is now flowering with him in great profusion, bearing between twenty and thirty flowers on small plants, the large trumpet-shaped lip being rich crimson, slightly paler at the edge, where it is narrowly bordered with white. It is a profuse bloomer, coming from Central America. It should be grown in the intermediate house.

Vanda teres.—A box of flowers of this beautiful species comes without a name or address, and therefore I cannot tell why they are sent. I observe that Mr. Williams has a very free-flowering variety of this plant, and just now many plants not more than a foot or 18 inches are blooming. His system of keeping a high, moist temperature and fully exposing them to the full sunshine appears to be effectual in producing an abundance of flowers every season. I, however, am of opinion that this variety is naturally free-blooming.—W. H. G.

Odontoglossum cirrhosum Klabochorum.—I recently received a grand flower of this variety from Mr. Fraser, gardener to Mr. White, Arddarroch, with the remark that it was a fine form of the species, which it certainly is. It is a long time since I saw this variety. The flowers are much larger than those of the typical plant, the white very pure, and the sepals and petals heavily blotched and spotted with rich deep chocolate. I am pleased to see this species return to popularity. It thrives under the coolest treatment, and just now affords a pleasing contrast to *O. Alexandræ*.—G.

Colax Puydti.—This is a species introduced from Brazil by M. Linden some ten years ago, but which has not become common in English gardens; indeed I have never seen it in flower in England until recently, when I observed a plant in the auction rooms in Cheapside. This, however, was an inferior form to those which I have observed on the Continent. It has quite the habit of *C. jugosus*, but the sepals are green, faintly dotted with blackish purple; the petals also have a green ground, which is nearly covered with very deep purple blotches and spots; the lip violet-purple. It is a very distinct plant, and a charming companion to its more beautiful congener, *C. jugosus*.—G.

Cattleya Sanderiana.—The more this species becomes established the more highly developed are its flowers. We recently noted this species marvellously fine in several collections round London, but the form which comes from Mr. Cypher, at Bath, from Mrs. Studd's collection

is a really beautiful flower. The bloom, which is round and compact, measures close upon 8 inches across. The lip is also round in shape, the whole, together with the side lobes, being intense deep magenta-purple, with a rich orange-yellow throat. This colour projects on to the front, and is divided at the base by a few streaks of rich magenta-purple. The plant bears seven of these flowers on a raceme.

HARDY ORCHIDS.

NEVER before can I remember a season when hardy Orchids gave less trouble, bloomed more freely, or gave better promise for "the morrow" than during the present one.

THE RAM'S-HEAD LADY'S SLIPPER (*Cypripedium arietinum*) I have conquered at last, for it bloomed out of doors grandly. I was disappointed with it after all the glowing descriptions that have been going the rounds of the papers and catalogues. Our native *C. Calceolus* is far before it, whether for beauty of bloom, ease of culture, hardiness, or general desirability. The Siberian also did well; and this may with greater force also be said of *C. acaule*, *C. candidum*, a gem in its way, and *C. pubescens*, the last the most accommodating and nearly the prettiest of any.

THE GREAT LIZARD ORCHIS (*O. hircina*) is promising well, the strong spike of bloom and deep green, abundantly-produced leaves betokening great things for the future. Why is not the White Helleborine (*Cephalanthera grandiflora*) more frequently seen in our alpine gardens and herbaceous borders? That it is a pretty plant no one dare deny; but then it is a native, and that largely explains why it is not cultivated more freely. A plant of it on the rockery at The Rookery pleased me immensely, and it looked quite as well able to hold its own, either florally or in point of habit and general appearance, as did any of those that had been collected from the four quarters of the globe.

ORCHIS MASCULA grows very strongly in the woodlands hereabout, but it is now past, the Butterfly Orchid (*Habenaria bifolia*) taking its place. A patch of the latter, lifted when forming flowers and transferred to a cool corner of the garden, will amuse and delight anyone as well with its quaintly-shaped flowers as by their abundance and perfume. In the evening, after a shower of rain, the aroma is simply delicious.

In the North American showy Orchis (*O. spectabilis*) we have a pretty flower, but it is not well thrown up above the leaves, and hence half its beauty is lost. Fully half-a-dozen flowered freely enough with me this season.

THE MADEIRA ORCHID (*O. foliosa*), with its big, broad and glossy green leaves and stately spikes of Foxglove-coloured flowers, is, in truth, not only a noble, but pretty and highly desirable garden Orchid. It is so easily grown, so stout and strong, and blooms with such freedom, that it must be recommended for universal culture.

LISTERA OVATA (the Tway-blade), with its curiously-shaped greenish yellow flowers, is abundant everywhere; and *Orchis maculata* (the spotted-leaved Orchid) is flowering with unusual freedom in many an oaken copse and rushy wood.

THE BEE OPHRYS (*O. apifera*) is, as usual, very locally distributed. It is a curious and attractive flower, but one that is by no means easy of culture.

I wish Mr. Harper (GARDEN, p. 523) would send me a well-rooted plant of *Cephalanthera ensifolia* for naturalising purposes, and I will return the more desirable *C. grandiflora* instead.

A. D. WEBSTER.

Orchis maculata in Suffolk.—I recently found a spot where *Orchis maculata* grows so tall and strong and free as to merit a note. It was a wild grassy corner in a brick yard, and there were several small pools and ditches, but in the intervening spaces there stood erect among the rank Grass hundreds of spikes of this beautiful Orchis, many of them nearly a yard high. Upon one spike I counted 113 flowers, and there were plenty each with

from 70 to 90 flowers. These densely-flowered spikes were almost as beautiful as those of a *Saccolabium*. There was great variety in colour, embracing all shades of white and rose, with pink, purple, and violet markings. I have seen this *Orchis* many times in southern pastures in a flourishing condition, as I thought, but its effect and beauty here exceeded all that I ever saw of it elsewhere. As seen here it was fully entitled to rank among and be regarded as one of the finest of British *Orchids*, and well worth cultivating by those who have a moist spot about the grounds.—A. H.

* * The plant grows quite freely in borders, increasing and forming handsome tufts.—Ed.

Dendrobium moschatum cupreum.—This beautiful old plant, which I lately saw in bloom, is one that takes the memory back many years, for it was abundant in our gardens between thirty and forty years ago, and was one of the very first *Orchids* whose name I learned. It is a tall plant, which requires strong heat and moisture during the growing season. The spike is long, bearing about twelve or more flowers, which are large and of a rich, deep, apricot colour. The plant is a profuse bloomer, the only fault being in the somewhat short-lived nature of the flowers. Native of Burmah.—W. H. G.

Bifrenaria tyrianthina.—"F. G. T., Manchester," says, "I send you a flower of an *Orchid* which is now flowering with me for the second time, and as I can find no one who can give it a name, I conclude it is a new kind. Shall be glad to know if you can tell me its name and its requirements." The plant in question is far from new, having been in cultivation upwards of fifty years, although lately it has been seldom seen. It is just one of those things which we would advise amateurs to avoid. There is nothing pleasing about it; the sepals and petals are dull green, more or less tinged with reddish violet, the lip being purplish violet, with a thick fleshy black plate at the base; the flower expands but little, and, moreover, has the disagreeable odour of musty hay. It should be grown in fibrous peat, and kept in a temperature never below 60°.

Oncidium sarcodes (C. J., Leeds).—The flower sent is a very fine variety of the above species, and if, as you say, the spike is bearing ninety flowers, it must have a very fine appearance. It, however, is a very different plant from *O. Brunlesianum*, the flowers of which are small, the sepals and petals being pale yellow, with a few dull transverse lines of reddish brown; the lip is rich deep yellow, tipped with dark blackish brown. The growth is somewhat in the way of *O. sarcodes*, but you will see by the description of its blooms that your flowers do not accord with that. *O. Brunlesianum* is still a very rare plant.

Cypripediums from Bath.—The species are *C. ciliolare*, *C. superbiens*, and *C. barbatum grandiflorum*, all good varieties. These Slipper *Orchids* are grand plants for making a display of bloom. A few kinds properly selected will maintain a show of flowers for the whole season, whilst some of the hybrids of the *Sedeni* set will continue in bloom for twelve months. It has been asserted that *Cypripediums* are dying out from their inability to reproduce themselves from seeds; but we have observed several species which arrive in this country laden with seed-pods, whilst some of the finest forms of *C. Spicerianum* are plants raised in this country from imported seed. The kinds here enumerated came from Mr. J. Cypher, gardener to Mrs. Studd, Royal Crescent, Bath.

Aerides Houllettianum.—This is a somewhat rare species, nearly allied to *A. expansum* and *A. falcatum*. It is now flowering profusely in the Cambridge Lodge collection. Mr. Simpkins, the gardener, keeps his *Aerides* and *Vandas* at a very low temperature during the winter months. Under these conditions the plants enjoy the very best of health, are of an intense rich green colour, and also flower profusely, although they are somewhat later in blooming. The plant in question produces long and many-flowered pendent racemes of bloom; the flowers are large and of a nankeen-buff, the sepals

and petals tipped with magenta-purple; lip same colour. It is a very beautiful and distinct plant from *Cochin China*.

Oncidium Lanceanum Louvrexianum.—From Mr. J. Cypher, of Bath, comes a magnificent form of this variety under the name of *Lanceanum superbum*, but it is needless to unnecessarily extend varietal names. The flower in question is large and full and very heavily coloured; the sepals and petals are deep chocolate at the base; the ground colour above this is clear yellow, marked with large spots and blotches of deep chocolate-brown; lip at the base, and also the large raised protuberance on the disc magenta-purple, shading to violet; the middle lobe is pure white. The flowers have a perfume resembling vanilla. The plant is said to be getting scarce in Surinam, although in 1834, when it was first discovered by Mr. Lance, it was abundant. The plant requires the heat of the East India house, and it also enjoys shade.

STOVE AND GREENHOUSE.

WORK IN PLANT HOUSES.

GREENHOUSE.—CHRYSANTHEMUMS.—Early struck plants that were sufficiently advanced to receive the final shift at the beginning of last month will now be pushing their roots freely into the new soil, and will shortly be in a condition to have manure water given them. My own practice has been to begin using liquid stimulants in about a month or six weeks after the plants are moved into the pots in which they are to bloom. In place of mixing so much with the potting soil, as is often done, not only by the addition of the ordinary rotten material, but also by some of the powerful concentrated manures, I have found it better to be more sparing of these elements, and to begin using liquid stimulants somewhat earlier. It is possible to make the soil richer than the roots can bear. Of this several instances have come under my notice during recent years, where by using the soil with so much manure in it, including some of the artificial preparations, the roots have been literally poisoned. And in regard to manure water, much harm is done by applying it too strong. There is less danger of overdosing the plants when the manure water is made from horse droppings, with a little soot added, than from guano or some of the concentrated fertilisers, in many of which guano, or sulphate of ammonia, is largely used. The extent to which stopping is carried requires to be regulated by the form the plants are to be grown in, the ordinary bush shape in which the plants consist of some half-dozen branches being the best when they are wanted for general decoration. By removing the lowest shoots which the branches will produce and by thinning the buds, flowers perfect enough for all ordinary purposes may be had. In selecting a place for the plants to stand in during the summer, choose a sunny one; they must likewise be far enough apart.

SALVIAS.—The different kinds of *Salvia*, both those that flower in autumn and later, should now have attention. Where the plants are turned out of doors in a bed for the summer, the soil if at all heavy and adhesive should have some leaf-mould and sand dug into it, so that when the plants are taken up for potting they will lift with plenty of roots. The freer the soil the more roots the plants will make. Where the planting-out system is adopted, the plants, if not already turned out, should be at once put into the bed. Do not crowd them together in a way that will prevent the light reaching them on all sides. If they are to be grown in pots, it is now time to move them to those in which they are to remain. It is not advisable to grow a large number of varieties, *S. splendens* Braanti, *S. Bethelli*, and *S. Pitcheri* being enough for blooming during the latter months of the year, with *S. gesneriflora* to come in later on. This last is a strong grower, and should have larger pots than the others named. The blue *S. Pitcheri* is the smallest of the sorts mentioned, and does not require as much root room as the

others. Fresh turfy loam, with about one-sixth of manure and some sand mixed with it is the best soil for *Salvias*. The plants generally branch out sufficiently with once or twice stopping, but where they are not furnished enough it will be necessary to again pinch back the points of the strongest shoots. If the pots can be plunged in ashes it will be better for the plants, and the soil will not become so dry.

VERONICAS.—Where *Veronicas* are grown on the planting-out system and they are already in their summer quarters, they will require little attention further than in seeing that any of the branches which take an undue lead have their extremities shortened. When the plants are kept continuously in pots they should now be moved into those in which they are to remain. There is much difference in the size that the various sorts of *Salvia* grow to; *V. Andersoni* and *V. salicifolia* will fill 12-inch pots with their roots, whilst the small growing variety *V. Blue Gem* does not require more than a 6-inch or 7-inch pot. The last-named is a very early bloomer; it is a useful conservatory plant, and may with advantage be grown in quantity for using in a structure where there is not much light, as the plants do not suffer through being kept in dark places.

LIBONIA FLORIBUNDA.—This is one of the freest blooming subjects that can be grown to a useful flowering state in one season. Plants raised early in spring will now be large enough to move into the pots in which they are to remain; those of 6-inch or 7-inch size are large enough. Loam with some rotten manure, leaf-mould, and sand forms a suitable compost for *Libonias*. A pit or frame will do to keep them in during the summer. Do not stand them too close together; it is better with these, as with all other things of a like character, to grow a moderate number well than to have a quantity that are more or less unsatisfactory through being kept too close together. When the soil is moderately filled with roots give manure water once a week.

LASIANDRA MACRANTHA FLORIBUNDA.—In this *Lasiandra* we have one of the finest of the *Melastomads*, and it is so easily grown that it seems strange it is not oftener met with. So free in flowering is it that it will bloom in a 3-inch or 4-inch pot, when the plant is not more than 7 inches or 8 inches high. The flowers, unfortunately, are not well adapted for cutting. Plants that were struck from cuttings a year ago, and that had a shift early in spring will now require moving to pots 2 inches or 3 inches larger. This *Lasiandra* will thrive in either peat or loam; where the latter can be had of good quality it is preferable. Add enough sand to keep the soil open. Pot firmly, and let the plants have plenty of light with a thin shade from the sun; give a moderate amount of air daily. A cold pit is the best place to grow them in through the summer, shutting up early and syringing freely overhead at the same time. If stopping has been attended to up to this time nothing more in this way will be required, as this form of the plant is quite different in the character of its growth from *L. macrantha*, which partakes more of the nature of a climber than of a compact growing bush. Cuttings struck early in spring will now be in a condition for moving into 6-inch or 7-inch pots, which size will be large enough for them until next spring. *L. macrantha* is one of the best climbers, but it should be grown where it will be kept a few degrees warmer in winter than in an ordinary greenhouse. It is a strong free-growing plant that soon exhausts the soil of the bed in which it is turned out. In most cases it will now be showing bloom, and should be well supplied with manure water. This will do much to assist the flowering, as when well supported the plant gives a long succession of bloom.

PLEROMA ELEGANS.—The shade of purple in the flowers of this fine plant is very beautiful. The *Pleroma* is easily grown and blooms freely; in addition to which the specimens, when large, require no more tying nor support than half a dozen sticks will give, whilst the flowers are useful when cut. Yet, with all these good properties, I do not suppose that it could be found in half a dozen gardens in

any county in the kingdom. If well cared for, it can be grown to a flowering size in two years from a cutting. Examples that are intended to bloom next summer should be stood out of doors now, so as to get the growth well ripened, which is necessary to enable the plants to flower well. The leaves do not like exposure to the sun during the height of summer; the north side of a tree, where only the morning and evening sun will reach the plants, is the best position. But the plants must not be under the drip from the branches of the tree, or they will be spoilt. Out of doors in a position of this kind is the best place in summer for plants also that are coming into bloom until the flowers begin to open, after which they should be taken indoors and shaded from the sun. Turfy loam with some sand added is the soil that suits the *Pleroma* best, though it will grow in peat, but in the latter I have not found it to bloom quite so freely as in loam. It strikes from cuttings made of the soft immature shoots as readily as a *Fuchsia*, and almost as quickly. The wood will shortly be in right condition for striking; half a dozen cuttings may be put into a 6-inch pot. Kept moist and close enough to preserve the leaves crisp, in an intermediate temperature few will fail to root. The cuttings should consist of the extremities of the shoots, choosing those that are of medium strength. Each cutting should have about three joints.

LARGE-FLOWERED PELARGONIUMS.—As these go out of flower, stand them out of doors where they will be fully exposed to the sun, so as to get the wood matured before heading them down. This does not take long. In about three weeks the lower part of the shoots, where the branches have to be shortened back to, will be brown and hard. To assist the ripening little water should be given; no more ought to be used than is found necessary to keep the leaves from flagging. If the weather happens to be very wet, the plants should be laid on their sides so as to prevent the water getting into the pots. The plants should be in the dry state when they are cut down; if the soil is wet when their heads are removed, the roots are liable to perish.

FANCY PELARGONIUMS.—These require to be turned out in the same way, but the soil in their case should not be allowed to get quite so dry as that of the large-flowered sorts; neither will they bear it being too wet; consequently, if heavy rains occur, these plants also should be laid on their sides. T. B.

SHORT NOTES.—STOVE AND GREENHOUSE.

Plumbago capensis and c. alba were very beautiful a few days ago in the Water Lily house at Kew. A coloured plate of them appeared in *THE GARDEN*, April 21, 1888. The white and blue make a delicate contrast.

Pernettyas in pots.—The various forms of *Pernettya* adapted for greenhouse work, of which *atrosanguinea*, *rosea*, *coccinea*, *nigra* and *macrocarpa* may be cited as examples, are setting their berries very well this year, and there does not appear to be much difficulty in securing the set, always supposing the plants have the benefit of a cool, airy house, with plenty of light during the time they are in flower. They are bright, neat plants, and are quite a feature in the cool house from November until the following May, and this season have been very useful, as (owing to the wet, unless summer of 1888) *Solanums* planted out of doors refused to set and were very badly berried. These *Pernettyas* are comparatively new to many, but will, I fancy, be largely used as they become better known, as, in addition to brightening up the greenhouse through the dull season, they make nice little vase plants when flowering stuff is somewhat scarce.—E. BURRELL.

Lagerstroemia indica.—If an indoor flower of striking individuality is required, it would be difficult to find one to eclipse *L. indica*, a plant introduced at the early part of the present century, but new to many. There is a specimen of it now in full bloom in the annexe to the Water Lily house at Kew, and it is a sheet of rosy pink. The flowers

are produced in large bunches, and have peculiarly beautiful and crumpled petals that give a plant in full beauty an unusually distinct appearance. It is also grown well by Mr. Ross, Pendell Court Gardens, Bletchingley, where it is cultivated with the best possible success in a cool conservatory. Mr. Ross finds that it is a great point to get the wood well ripened, and stove treatment is unnecessary, as the plant will do well in a cool conservatory or greenhouse. This is important to those who have been deterred from growing it through the idea that stove temperature was essential.

SCHIZANTHUSES AT THE BOTANICAL GARDENS, MANCHESTER.

MR. BRUCE FINDLAY has just now a truly wonderful display of *Schizanthus pinnatus* in one of the houses at Old Trafford. The plants afford an admirable illustration of the use to which this Old Chilean half-hardy annual can be put as a decorative plant. Beautiful and striking as the plants are, few visitors to the recent great show probably saw them, but could they have been massed in the annexe as a portion of the show, they would have formed one of its leading features and been all the more attractive, because the *Schizanthus* is so rarely seen grown in this way. The specimens were of large size, 4 feet or so in height, of considerable bulk, and literally covered with thousands of blossoms. The petals of some of them are handsomely marked, and there are many variations in their colours. The specimens at Old Trafford not only serve to bring under notice an annual far too much neglected in these days, but they teach gardeners how they can make their greenhouses and conservatories gay at this season of the year at a comparatively small cost.

The method adopted by Mr. Findlay is to sow the seeds about the first week in September. In the course of six weeks the seedlings are large enough to prick off into 6-inch or 7-inch pots. In these they remain all the winter. They occupy a cold frame, and are protected from severe frost. By February, the plants—short, stocky, and sturdy—are shifted into pots somewhat larger, and in a few weeks, when the roots reach the sides of these, they are potted into a 10-inch pot, one, two, or three plants, according to their size. Care is necessary to keep the plants tied to supports or the branches fall about, and their effectiveness is spoilt. When looked after in this respect the plants make large symmetrical specimens, and so densely do they flower that very little in the way of foliage is to be seen.

On visiting Mr. Samuel Barlow at Stakehill House, Manchester, at Whitsuntide, I saw in one of his plant houses some specimens of *Schizanthus* similarly treated, smaller in size, but highly effective, among them a few very fine varieties. It is interesting to note how the flowers vary even on the same plants, and in respect to individuals there is a remarkable diversity. I think if anyone were to take the *Schizanthus* in hand they would, by careful selection, obtain a strain of remarkable beauty and character. It is worth attempting, and whoever undertakes the task will, I am sure, be both encouraged and amply rewarded by the results. R. D.

Carnation Pride of Penshurst in pots.—It will have to be a good yellow Carnation that will beat this, for it is of a good constitution, blooms freely, and, what is of some consequence, bears forcing well. Plants that are well established in their pots will give plenty of bloom in spring if they are put into a light house where the temperature is from 50° to 60° in dull weather. A greater amount of warmth than this will bring them on too rapidly to admit of the bloom being true to character. The soft shade of yellow is very pleasing and uncommon among flowers brought on under glass in spring. For spring blooming, propagation may be effected by layering, and if this is done at an early date, and a couple of good layers put into a 5-inch pot, they will fill it with roots by the commencement of spring, for

Carnations, if well cared for, make roots all through the winter. The layers should, however, be potted up as soon as they are sufficiently rooted to allow of their being taken off the parent plants. Plants treated in this way will give a lot of bloom for cutting before Carnations come in out of doors.—J. C. B.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL ROSE CONFERENCE.

JULY 2 AND 3.

THE Rose Conference, as regards the exhibition of the flower itself, was a failure. Two things had possibly much to do with the unsatisfactory result—a want of encouragement in the way of money prizes, and the many local exhibitions of our great national flower now in full swing throughout the length and breadth of England. We wished it had been otherwise, as those visitors from afar must have felt keen disappointment in the poor display, which did not fill a tent of average size. There were no Scotch exhibits, and the English growers present came principally from the south, with flowers, we need scarcely add, of unquestionable merit, rich variety, and representing all the several classes into which the Rose genus is split up. But though there was little comparatively to see, if we compare this conference with those of the Apple and Pear, enthusiastic amateurs and others wishing for information must have been fully gratified. An excellent schedule had been prepared, comprising as far as possible every class of any interest to rosarians, and on both days papers were read by leading rosarians. The cultivator and botanist were thought of. The first day, Tuesday, was a day for the practical papers, if we may so term them, and the opening address was given by the Very Rev. the Dean of Rochester, president of the conference. On the Wednesday, Mr. J. G. Baker, of Kew, commenced the proceedings as president of the botanical section, so that no efforts had been spared to make an attractive programme to induce a large attendance and disseminate important information from either standpoint. One great use of a conference is that by its aid much important information is diffused, and if the Rose Conference of 1889 was not “national” as regards the exhibition of Roses, it was essentially so with respect to the papers read and discussions thereon. The same place—the Chiswick Gardens of the Royal Horticultural Society—was chosen, as in the case of the other conferences, and it would be difficult to find a pleasanter spot for holding a show, especially just now, when foliage and flowers are in full summer beauty.

Although the display was unexpectedly small, most, if not all, the classes were filled, and, therefore, everyone really interested in the Rose had an opportunity of seeing it in one of its many phases. Such a show as this recalls the memories of years gone by, when the Ayrshire, the Boursault, and Noisette Roses were as much thought of as the exhibition blooms at the present day. The old-fashioned type of Rose was here in its prime side by side with the latest addition to the Hybrid Perpetual and Tea-scented sections. It was a time for making comparisons between the old and newcomers, and a pang of regret must have been felt that many of these long-introduced types are not more thought of. These are the kinds that when properly used give real delight, not so much from their comparative novelty as from an intrinsic beauty in themselves. If this conference does no more than further the cultivation of the many climbing and other old-fashioned Roses, it will have achieved a great object that will be reflected in an improved condition of our gardens. One thing must have struck the visitor, and that was the general evenness of the Hybrid Perpetual flowers, the tender unblemished colour of the Teas, and all-round freshness of the blooms. The tropical heat of the past week or so has tried the Hybrid Perpetual blooms sorely, but there were many excellent examples both amongst these and the Tea-scented varieties. We have seldom seen the lovely

Comtesse de Nadaillac, queen of Teas, finer, and there were many tenderly coloured flowers of the exquisite Mme. de Watteville in charming perfection. Ulrich Brunner was conspicuous for colour in the Hybrid Perpetual stands; and such dark flowers as Grand Mogul, Reynolds Hole, Xavier Olibo, Sultan of Zanzibar, &c., had their glorious richness of tint brought out to the full. We note the particularly well-shown varieties in the various descriptions of the class.

The great class, and one happily thought of, was for a collection of Roses of all kinds, number not limited, to be grouped in their several families or classes. This would have made an exhibition in itself. Messrs. W. Paul and Son, of Waltham Cross, had an immense display, comprising 368 varieties, filling eighteen boxes. There were nine stands of Hybrid Perpetual flowers, and these fresh and good, two of them comprising seedlings raised, or introduced to commerce, by the Waltham Cross firm. Amongst the Hybrid Perpetuals there were excellent blooms of such favourites as Marie Baumann, Mme. Charles Wood, Victor Hugo, splendid for its brilliant crimson colour with a purple shade; the white Gloire Lyonnaise; Her Majesty, which was excellent throughout; Merveille de Lyon, Mme. Bois, a beautiful light Rose, reminding one of Victor Verdier; Xavier Olibo, Abel Carrière, a lovely dark Rose; Prince Arthur, rich crimson, faultless shape; Columbia, a white sport of great purity from Comtesse de Serenye; Auguste Rigotard, Mme. C. Crapelet, Jean Lelievre, deep crimson; Mme. Joseph Desbois, flesh, with a salmon-rose-shaded centre; Mabel Morrison, Ulrich Brunner, Francisque Rive, bright cerise, with a shade of carmine; Duke of Connaught, velvety crimson, and shaded with red; the old, but still unapproachable General Jacqueminot, La Rosiere, rich velvety crimson; Alfred de Rougemont, and Mme. Decour. The flower of this was the most delightfully coloured in the show; it was of Camellia-like shape, and of an exquisite shining pink colour, with just a suspicion of salmon to give it brilliancy. An interesting exhibit was, naturally, the boxes of seedlings; and here we could admire the deepness of the crimson in Grand Mogul, the bright cherry-red of Ella Gordon, the brilliant crimson, shot with maroon, and perfect form of the Duke of Edinburgh. Other good types were Black Prince, deep velvety crimson; Duchess of Albany, the rival of La France; Lord Macaulay, rich crimson-scarlet, large and full; and Duchess of Bedford, remarkable for the brilliancy of its scarlet-crimson tint. Messrs. William Paul had the lovely Bourbon Rose Souvenir de la Malmaison in excellent character; it is a Rose that will live to see many of the far newer kinds die out. Hard by was a mass of the tenderly coloured Noisette Réve d'Or, Mme. C. Kuster, a Rose in conspicuously good condition throughout; the glorious W. A. Richardson, the old Fellenberg, and the not less interesting Aimée Vibert. When we come to the climbing Tea-scented varieties we have a rich series in Cheshunt Hybrid, Belle Lyonnaise, the new Pink Rover, a pretty flower of a rose shade; Climbing Devonensis, and last, but not least, the king of all Roses, Gloire de Dijon. There was a strong muster of Tea kinds, and in the other classes devoted to these there were faultless flowers. Here Mme. de Watteville (illustrated by a coloured drawing in THE GARDEN, July 14, 1888) was in its loveliest phase, a contrast to the yellow Perle des Jardins; Niphetos, the not less beautiful Princess Beatrice, Mme. Hoste, a thoroughly useful variety of an attractive lemon-coloured shade; W. F. Bennett, conspicuous for its crimson-purple colour; Mme. Cusin, The Bride, Grace Darling, Comtesse de Nadaillac and Edith Gifford (illustrated by a coloured plate in THE GARDEN for April 27, 1888). The Gallicas were represented by such kinds as the striped Rosa Mundi, frequently confounded with the York and Lancaster, and the delicate beauty of the Polyanthas was seen in the bunches of the delightfully tinted Mignonette and the double white Anna Marie de Montraval. Nor were the Chinese Roses forgotten, or such beautiful rugosa varieties as the white Mme. Georges Bruant, the crimson

Gloire des Rosomanes and the type. Moss and Provence Roses were in force, and a large gathering of flowers of Hybrid China, Noisette, Bourbon and Damask must have pleased those who love these sections. Mme. Plantier is a lovely Gallica Rose, so is the deep crimson fulgens and the little-seen General Jacqueminot, a Rose of purple shaded crimson colour. Of the Ayrshire the flesh-coloured Ruga was in perfection, and the same remark applies to the evergreen Félicité-Perpétue, the Musk Rose Eliza Werry, and the climbing Laura Davoust. A silver-gilt medal was awarded this unique display.

Messrs. Paul and Son, Cheshunt, deserve great praise for their extensive bank of flowers, and a silver-gilt medal was also awarded them. The flowers, especially of the Hybrid Perpetual varieties, individually, were even, fresh, full, and finely coloured. There were six boxes, containing splendid blooms of the deep crimson-coloured Duke of Wellington, the bright, shining, rose-coloured Alphonse Soupert, Victor Hugo, Mlle. Susanne Rodecanachi, a beautiful carmine Rose with a name sufficient to stop its cultivation. Why hamper a flower with such a title? Captain Christy, Reynolds Hole, Brightness of Cheshunt, crimson; Mlle. Germaine, rose, slightly shaded yellow in the centre, large and full; Sénateur Vaisse, Duke of Albany, a bright shade of crimson; Silver Queen, similar in colour to Baroness Rothschild; Glory of Cheshunt, Sultan of Zanzibar, Earl of Dufferin, Prince Camille de Rohan, Lady Alice, and Florence Paul, crimson, besides many others. Again the old Bourbon Souvenir de la Malmaison was in full beauty, and the China Mrs. Bosanquet, with also the beautiful single Rosa macrantha, Paul's single white and crimson varieties, recently noted in THE GARDEN; striped Provence kinds, of which Montelambert is flaked with pale lilac just as softly and conspicuously as a Carnation; and such climbers as the ever-welcome Félicité-Perpétue, Amadis, the charming crimson Boursault, and Laura Davoust. The small-flowered Polyanthas were as fresh as any in the show; so was the bunch of flowers of the white Moss Blanche Moreau and the vigorous Rosa rugosa. Of Teas, Souvenir de Paul Neyron, Scipion Cochet, The Bride, Mme. Van Houtte, Innocente Pirola, Souvenir d'Elise Vardon, Francisca Kruger, and Anna Ollivier were faultless in shape, tender of colour, and fresh. Nor must we forget the charming qualities of such Hybrid Tea-scented kinds as Reine Olga de Wurtemberg, bright crimson, Grace Darling, and the glorious Viscountess Folkestone, a flower with a magnificent petal and fulness of form. The colour is cream-pink, the centre of a more pronounced pinky shade.

Mr. Rumsey, Waltham Cross, had seven boxes, principally Hybrid Perpetuals, arranged in separate colours, an excellent way of obtaining effective blocks of colour. There were finished blooms of Duchess of Bedford, E. Y. Teas, Mme. Victor Verdier, A. K. Williams, St. George, a rich crimson Rose; Rosieriste Jacobs, fine crimson shade; Dr. Sewell, faultless bloom of it; Charles Darwin, Jean Soupert, and Victor Hugo. The light-coloured kinds were just as good, and comprised beautiful flowers of Mrs. Baker, lovely carmine-red, shaded crimson, besides the leading kinds mentioned before. The Tea-scented flowers were good, and again such kinds as the Yellow Sunset, Etoile de Lyon, Mme. Hoste, Mrs. Ethel Brownlow, bright salmon-pink, with a shade of yellow at the base of the petals, and Mme. Watteville were in exquisite perfection (silver Banksian). Mr. Charles Turner, of Slough, also showed in this class, having three trusses of bloom of each of the leading kinds, in which the variety Her Majesty stood out conspicuously for size, colour, and brilliancy. Countess of Rosebery was faultless in form, and when in this condition this brilliant carmine-rose flower is delightful. Of the Teas there were lovely blooms of Comtesse Panisse, a very delicate flower, the edges of the petals folded back at the margin, and coloured with rosy buff, just shaded with a carmine tint. Mr. Turner had splendid bunches of the Mignonette and climbing Roses.

The Hybrid Perpetual Roses, though damaged

and half burnt flowers were not absent, had the characteristic colour, richness and freshness seen in the leading types. There were two entries in the class for a collection not exceeding forty-eight varieties, and both Messrs. Keynes, Williams & Co., of Salisbury, and Messrs. J. Cranston & Co. were each awarded a silver medal. It is only going over the same ground again to repeat the names of the best flowers, as they are the same as have already been mentioned. The blooms in both stands were finished and well coloured, considering the large number exhibited. Messrs. J. Burrell & Co., Cambridge, also showed well in this class. There were more entries in the Hybrid Perpetual classes than any other, and we find four in the class for twenty-four, in which Mr. F. Cant was given a silver medal for his excellent display. Such kinds as Mme. G. Luizet, Marie Finger, Duke of Connaught, Merveille de Lyon, and Horace Vernet were without blemish. The Maidstone Roses of Messrs. G. Bunyard & Co. were likewise excellent, and Messrs. Cheal and J. Cranston also exhibited. Mr. Mawley, Rosebank, Berkhamsted; Messrs. J. Cranston, Hereford; Mr. F. Cant and Messrs. Keynes, Williams & Co. were the exhibitors for twelve varieties; and in the various stands the dark Roses, as Victor Hugo, Rosieriste Jacobs and Reynolds Hole, were again conspicuous for freshness and colour.

Teas and Noisettes were the feature of the show, and in the class for a collection we find the stand of Mr. G. Prince, Oxford, unrivalled with flowers we should expect such a master of this section to exhibit. In his stand were good flowers of Souvenir de S. A. Prince, the lovely sport from Souvenir d'un Ami; Maréchal Niel, Alba rosea, Francisca Kruger, and Comtesse de Nadaillac (silver medal). A like award went to Mr. F. Cant for his splendid flowers, and other exhibitors were Rev. F. R. Burnside, Birch Vicarage, Hereford; Messrs. J. Burrell and J. Cranston. Mr. Prince also had a silver medal awarded in the class for twelve varieties, and such charming flowers as Hippolyte Jamain, white outer petals, but delicately shaded with a coppery tint in the centre, and Innocente Pirola were exquisitely finished. Messrs. Keynes, Williams & Co. also had a silver medal; there were five exhibitors, the others being Messrs. F. Cant, J. Cranston, and J. Cheal. A charming class was for bunches of Tea and Noisette flowers, and lovely half-expanded blooms in their fullest beauty and delicacy of tint came from Messrs. Bunyard, of Maidstone. Seldom have we seen Jean Ducher, Innocente Pirola, Etoile de Lyon, Mme. de Watteville, Louis Gigot (soft lemon), Devoniensis, and Mme. A. Jacquier (white, rose shaded) finer. Saurette and Marquise de Vivens are varieties not often staged. The first is of exquisite shape and just touched with the softest lilac; the other rich rose of a decided shade. Mr. G. Prince had bunches of Mme. Cusin, a flower that was conspicuous throughout for colour and finish; Edith Gifford, and the pale yellow Amazone. Messrs. Paul and Son came out well with that beautiful Tea Mme. Watteville. In the division for summer-flowering Roses, besides the classes mentioned, there were those for Polyantha, Hybrid Polyantha, China, and any other autumnal-blooming Roses, and Messrs. Wm. Paul and Son came forward with superb bunches of beautiful Polyantha types, represented by such kinds as Perle d'Or and Anna Marie de Montraval—a terrible name for a flower not much larger than a button. In the collection of Chinas we find old favourites, as the common type, Mrs. Bosanquet, Cramoisie Superieure, and the ivory white Ducher. Messrs. Cranston, William Paul, and G. Bunyard gave us a glimpse of the beauty of our Moss and Provence Roses by showing collections of considerable interest. Of course the common type was there, also the beautiful crimson-purple Lanei, the white Blanche Moreau, a Rose of unquestionable value in the garden, and Little Gem. Messrs. G. Bunyard received a silver medal for their choice selection in this class. The same exhibitors were represented in the class for Hybrid Chinas, Bourbons, Noisettes, Gallicas, and Albas. The single Roses were shown well by the Rev. J. H. Pemberton, Essex, and here we found such varieties as the striped Damask, the type itself, Maiden's Blush,

a famous old Rose; and the white Mme. Hardy, a full and beautiful Rose.

The climbing Roses were not forgotten, but, of course, no idea of their intrinsic beauty can be obtained from cut blooms. They must be seen encircling pillar, post, and chain, which just now they wreath with countless flowers of poor individual quality, perhaps, but charming in the cluster. Several baskets of these came from Messrs. Paul and Son, and such varieties were included as the old crimson Amadis, the deep-hued Russelliana, Mme. Plantier, Félicité-Perpétue, The Garland, white; while Messrs. G. Bunyard gave a rich selection in Aimée Vibert, Climbing Devonensis, Reine Marie Henriette, and the coppery yellow Ophirie. Messrs. William Paul and Son delighted us with Coupe d'Hébe (Hybrid China), Vivid (Ayrshire), and the Virginian Rambler, a variety of this section in the way of Dundee Rambler, the flowers of a lovely rose shade. Messrs. Bunyard gave us a taste of old fashioned Roses. They exhibited the true York and Lancaster, so often confounded with Rosa Mundi; it is not a bit like it. The great historical Rose is not striped in the fashion of R. Mundi, neither is it so constant, and sometimes comes without any shade or stripe at all. Persian Yellow was brilliant for colour; also the purple Rosa rugosa, of which the most beautiful variety is the white, a spotless flower, charming on a stand or in the garden.

A class for the species of Roses was appropriate as affording illustrations for the botanical papers read on the second day. A large collection came from the Royal Gardens, Kew, arranged in groups, and comprising an interesting series of species, as R. moschata, lucida, rugosa, centifolia, damascena, noisettiana, and gallica, all in excellent flower. Messrs. Paul and Son, Cheshunt, also showed a collection. Two charming boxes came from Mr. Girdlestone, Sunningdale, the exhibits in dense bloom. There were the Red Damask, the Hybrid Sweet Brier, Hebe's Lip, white, beautifully margined with lake; R. rugosa, Mme. Georges Bruant, white; Hybrid Rosomane Bardou Job, a single flower, cup-shaped, and brilliant crimson; Rosa lucida Rose Button, Rosa macrantha, indescribably beautiful, the flower as delicately coloured as that of the Dog Rose, but almost twice as large; R. indica var., R. Beggariana, a mass of small white flowers; R. berberidiflora Hardyi, yellow; and R. Woodsii, rose-pink (silver medal). Mr. R. J. Lynch, The Botanic Gardens, Cambridge, and the Rev. J. H. Pemberton also showed.

MISCELLANEOUS EXHIBITS.—Of course all were of this character, as no prizes were offered, but a few boxes put up irrespective of class deserve comment. Messrs. J. Cranston and Co. showed a splendid lot of Cranston's Crimson Bedder, a glorious Rose for colour, which is bright crimson, and a charming box of Comtesse de Nadaillac came from Mr. G. Prince. The tender colours, softly mingled, without the least harsh contrast, defy description; the same showed Mme. Watteville in faultless style. A bunch of flowers of the apricot-coloured W. A. Richardson came from Messrs. H. Drover and Son, Hillside Nursery, Ventnor, Isle of Wight, the most highly tinted coming from an east wall. No Rose made a brighter show of colour than this. Messrs. Paul and Son had a miscellaneous collection of Tea and Hybrid Perpetual varieties, and Messrs. Keynes, Williams, and Co. had a display of the last mentioned class.

Books, photographs, and plates, all illustrating the Rose, were also exhibited.

We give the following abstracts of such papers as we have received.

New classification of Roses (By Professor Crépin).—After a short historical introduction, M. Crépin proposes his new scheme, according to which the genus Rosa is divided into fifteen sections, the sections being founded on the characters afforded by the styles, the sepals, the inflorescence, the number of leaves on the flowering branches, the stipules, the bracts, the prickles, and the general habit. The sections proposed are—1, Synstylæ; 2, Stylosæ; 3, Indicæ; 4, Banksiæ; 5, Galliæ; 6, Caninæ; 7, Carolinæ; 8, Cinnamomeæ; 9, Pimpi-

nellifoliæ; 10, Lutææ; 11, Sericæ; 12, Minutifoliæ; 13, Bracteate; 14, Lævigate; 15, Microphyllæ. Each of these sections is described, and the species allotted to it mentioned. In all about sixty species are enumerated.

Sweet Brier crosses (By Lord Penzance).—In this paper the writer traced the development of Rose culture from the time when the Dutch some seventy to eighty years ago commenced to propagate Roses by seed. The example was quickly followed by the French. Adverting to times present, his lordship laments the enfeebled constitution and the absence of perfume which characterises many modern Roses. He regrets also the disappearance of the Bourbon Roses, the Alba Roses, and the Perpetual Damasks. The introduction of new races is counselled, and the means of obtaining them by hybridising and cross-breeding pointed out. Lord Penzance practises what he preaches, and exhibited various specimens as follows: Sweet Brier fertilised by the pollen of H.P. La Souveraine. Sown November, 1885, seedling came up in January, 1886. Sweet Brier fertilised with H.C. William Jesse, came up January, 1886. Sweet Brier fertilised with pollen from H.B. Paul Ricaut. Sweet Brier fertilised with pollen from H.C. William Jesse. Luxembourg Moss fertilised with H.P. Princess Christian. Seed sown 1884, came up in February, 1885.

Rosa Polyantha as a stock for budding. (By M. Vivian Morel, Lyons).—The author points out that M. Alegatière, of Lyons, ascertained that the seeds of this species germinate within a month without being stratified, so that the stock can be budded in the first year. Various confirmatory statements by different experimenters are given; amongst others, some by M. Bernaix, who advocates the budding of Roses on seedling Polyantha stocks as specially suitable for pot Roses and Roses intended for forcing. Such plants come into growth and flower ten to fifteen days earlier than those budded on the Brier, and do not throw up suckers. The stock is as well suited for Teas as for Hybrid Perpetuals. M. Vivian Morel himself repeated these experiments with the same results. A comparative trial of Roses for forcing, budded on the seedling Polyantha and on the seedling Brier respectively, and in which the conditions were identical, gave the following results: Roses budded on the Polyantha stock gave twice the number of flowers that the same variety produced on the Brier, and, further, they were a fortnight earlier.

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee took place on the 28th ult. at the Caledonian Hotel, Mr. George Deal presiding. The minutes of the last meeting having been read, the hon. sec. reported that the recent two investments had been completed, the total sum in the funds being £2500. The report of a sub-committee proposing an addition to Rule XII. bearing on the mode of election was passed. The details of the coming election and annual dinner on July 19 were considered, and a special committee appointed to carry out the same. Mr. F. Lane, Berkhamsted, and Mr. George Gordon, Gunnersbury, were elected upon the committee in the place of Mr. C. Howe, deceased, and Mr. H. Williams, who had resigned through pressure of business. The hon. sec. reported that the income of the fund from all sources during the financial year which has just closed amounted to nearly £2000. Of this sum nearly £350 was in the form of annual subscriptions, £900 or so as donations, £260 from local secretaries, £45 as interest, and £400 from miscellaneous sources, including the Covent Garden fête. A cheque was ordered to be drawn for £35 15s., the quarter's allowance to the children who are upon the fund. It may be again stated that the annual dinner takes place at the Cannon Street Hotel on Friday, July 19, at 5 p.m., Sir Julian Goldsmid, Bart., in the chair, when it is the desire of the committee that as many gardeners as possible should be present.

Royal Botanic Society's Fete.—This is one of the great events of the season, and the fête on Wednesday last was one of the most successful the

Society has ever held. A large company was present, between 8000 and 9000, and the grounds presented the usual brilliant picture, from the use of multitudes of coloured lamps and devices brought into play on such occasions as these. The large tent was devoted to table decorations and exhibits of a kindred nature.

NOTES OF THE WEEK.

Mr. John Bain.—The portrait of Mr. John Bain, to whom Vol. XXXV. of THE GARDEN is dedicated, was engraved for us after an excellent photograph by Mr. Robinson, photographer, 65, Grafton Street, Dublin.

Canterbury Bells.—Flowers of these from Miss H. Robinson, Quedgeley House, Gloucester, remind us of the value of a good selection in midsummer. The deep blue is very rich, but there are several delicate shades.

Lilium Hansonii.—This beautiful Japanese Lily has flowered finely this year. It grows 4 feet or 5 feet high, and has rich reddish orange flowers, spotted with purple. There are few of the earlier blooming species equal to it.

Spiræa Aruncus and S. astilboides are two white-flowered plants worth noting as summer-flowering subjects. They both make charming rock or border plants, and the former especially makes an elegant isolated tuft on a lawn.

Tuberous Begonias.—A good selection of double-flowered varieties comes from Mr. G. Wickham, gardener to Mr. J. Humphreys, Highlands, Keymer, Sussex; the colours bright, varied, and pretty, especially the more delicate shades.

Artificial ruins.—We really regret to see the *Revue Horticole* publishing an illustration of an artificial ruin at the Trocadero—perhaps the most ridiculous and puerile of the many ridiculous things people tolerate in their gardens.

Limnanthes Douglasi is a charming Californian annual of rare beauty and elegance. It is amongst the hardiest of the flowers from that region, the seeds sowing themselves and coming up in autumn ready for flowering in early spring. We are told it is a very fine rock plant, and from its free habit it would be worth a trial.

Wild Roses.—It is hard to find a reason for the exclusion of wild Roses from the garden. Ever since we have grown them we have been delighted with the annual display they make. The pure single Dog Rose, Ayrshire, Scotch, &c., are well worth a trial where room can be spared. They are infinitely more beautiful than the endless clumps of dull Laurel, &c.

Unseasonable flowering of Apple trees.—Some of our Apple trees of different varieties are showing many clusters of blossom at the present time. They are not produced in the ordinary way on last year's buds, but at the end of the recently formed shoots. In some previous years I have noticed a flower here and there in similar positions, but never such a quantity as at present.—J. MUIR, *Margam*.

Late-blooming Rhododendrons.—Mr. Anthony Waterer says: "The best late blooming Rhododendrons I know are Wellisium, John Spencer, Lady de Trafford, and The Warrior. There are very few answering this requirement. These were nicely in bloom last week."

* Can any of our readers add good kinds to the list?—Ed.

Panther Lilies.—I am sending you flowers of the *Lilium pardalinum* section, showing what remarkable variation there is in the colour of these varieties. Luteum, now sent, is the only one of that shade of colour, with the exception of L. Warei, which, as you know, is of a pure soft yellow without any spots at all. There is quite as much difference in habit as in the colour of the flowers of these varieties.—THOMAS S. WARE.

—The yellow Panther Lily, the narrow-leaved kind, and carinatum all come from Mr. Ware—well-grown, fine Lilies.

Alstroemeria aurea and aurantiaca are very fine this year, and though natives of Chili, seem perfectly hardy, rarely getting destroyed by frosts, &c. The two names given above are, by botanists, considered synonymous, but to gardeners they represent two distinct plants, so far at least as colour of flowers, &c., are concerned. Alstroemerias, however, seem to vary from seed, and some very fine deep-coloured forms have at last been secured.

The Cape Marigold (*Calendula pluvialis*) is just now very beautiful. Too often this plant is seen in small wretched patches, and in such a condition it looks weedy. It may be managed with the greatest ease, and does well in ordinary soil in an exposed position. The seeds should be sown at various times so as to ensure a succession of bloom throughout the summer months. The flowers are useful for cutting, as they last a long time in a cool room.

The large Japanese Irises (*Iris Kämpferi*) promise an abundance of bloom this season. The flowers are just now beginning to open, and already the display, with us at least, far exceeds that of last year. These Irises do not seem to be very particular in their requirements, as they do equally well in peat or loam and near water or in the dry border. When in the border, however, they will be greatly benefited by a liberal supply of water. They do not seem to care being disturbed much, and always take time to recover from transplanting.—D.

The Caucasian Scabious (*Scabiosa caucasica*) is an excellent subject for mixed borders or beds, especially when one can get the compact-habited varieties. It varies very much from seed, and the only plan will be to grow a quantity of plants for a year or two and then choose the dwarfest and most compact forms. The flowers also vary somewhat, and there are many inferior forms grown in collections. It is one of those plants that requires little attention. In light sandy soil it never fails to produce an abundance of its rich purple flower-heads.

Carpenteria californica is now in bloom on a wall with a southern aspect at Kew. It is a lovely Californian shrub of recent introduction comparatively, and attracted considerable attention last year, when at one of the Royal Horticultural Society's meetings sprays were sent from the Surrey garden of Miss Jekyll. The plant at Kew has been in bloom for some time and is about 4 feet high, the growth dense, vigorous and healthy, each shoot being terminated by a cluster of flowers, each of which is fully 3 inches across, pure white, except for the bunch of yellow stamens, and saucer shaped. From the condition of the Kew specimen, one should think this a fairly hardy shrub, but until its character in this respect has been more fully tested, those who do wish to risk it in full exposure should plant it against a warm sunny wall.

Sweet Williams.—Mr. Caudwell, of Wantage, sends us Sweet Williams, which are a very handsome mixture, but we are persuaded that all mixtures are not so good as the simple colours. If people are to see the true beauty of any flower the colours must be separate. The beauty of many of our hardy flowers is half hidden by the mixtures sold by the seedsmen. People do not know how much they lose through it—Sweet Williams alone, for example. Some of the white kinds and deep fine colours are superb; they tell enormously better when they are separated. This way also gives us a better opportunity of selecting the finer types of each colour and distinct shades of each colour. To persons who particularly value fine colours this would be all-important. Every one of our races of hardy flowers from Auriculas upwards that are frequently seen in incoherent masses should be saved from all this by selecting the frank and decided strains, or, in any case, strains of separate colours as decided or as delicate as may be. Securing these need not prevent those who like the weak variegated mixtures having them.

Alstrœmerias (Peruvian Lilies).—I send blooms of some seedling Alstrœmerias. They are, I think, much handsomer than those of the more frequently seen aurantiaca; the colours are so much more delicate and varied. The plants are perfectly hardy and most easily grown, and for a month or six weeks in midsummer are very brilliant. They look best in beds by themselves, and if planted against a dark Ivy background it adds to their effectiveness. The specimens I send are not quite so fine as they ought to be, or as large as I have had them, as the beds in which they are growing have been exhausted by Ivy roots, but Alstrœmerias so

greatly resent being disturbed that I have left them in unfavourable quarters rather too long.—H. M. W.

**** Very beautiful colours**—bright pink, orange-salmon, one like a half ripe Bigarreau Cherry in colour, white tipped pink, and a variety of colours—all beautiful.—ED.

Peruvian Lily (*Alstrœmeria aurantiaca*).—We have seldom seen this finer than in Messrs. Barr and Son's Tooting Nursery a few days ago. The plants were a mass of the intensely rich orange-scarlet flowers that shine like gold in the sun. The great point is to plant a foot deep, and then leave the rest as far as possible to Nature. Peruvian Lilies dislike being disturbed. *A. aurantiaca* is far harder than such kinds as *pelegrina*, which often dies out in winter, especially if the soil is at all moist.

Venidium fugas, better known in the trade as *V. calendulaceum*, is one of the most striking of the early annuals we have yet seen. It may be classed amongst the hardy annuals although a native of the Cape, and can be sown in the open air in spring, or to obtain succession it may be sown early in March in bottom heat, and pricked out about the middle of April. The flowers are large, orange, and very beautiful. Seeds ripen freely. *V. speciosum* is a very near ally, somewhat neater habited and with woollier heads.

Cypripedium spectabile was in full bloom the other day in Messrs. Barr and Son's Tooting Nursery, where the plants do well under a shady hedge. This beautiful flower is the hardiest of its race, and just the kind of thing for planting in a moist, shady nook where there is a good depth of peaty soil. We have seen it exceedingly fine thus grown in a recess in the Kew rockery, where it is charmingly associated with dwarf Heaths and plants of like requirements. The colour of the flowers, as in most Orchids, varies considerably, the pink tinge on the lip being richer in some cases than in others, and occasionally disappearing altogether.

The double Dropwort (*Spiræa filipendula* fl.-pl.).—This old and beautiful plant has been left far behind in the race for novelties, but at present it is the prettiest thing in the garden. I lately saw a group about 3 yards long, and from the mass of Fern-like foliage there stands up about 200 flower-spikes, each carrying a large corymb of creamy white flowers. The effect of the mass can hardly be described. When the flowers ultimately fade the foliage will still remain to carpet the ground. Many of the showiest hardy flowers turn shabby after flowering, but there is a certain class that are beautiful whether in leaf or flower, and this Dropwort is one of the best of that class.—A. H.

Strawberries from Maidstone.—We thank Mr. Bunyard for sending fruits of a few of the best kinds of Strawberries. We are very pleased to get a bunch of the Royal Hautbois, a Strawberry that deserves to be well cultivated by those who care for flavour more than show. It seems to travel badly, and the birds appear so fond of the fruits that one seldom gets a chance of tasting them. Aromatic is a well-flavoured Strawberry, but it seems like British Queen in shape and colour; well grown and picked when properly ripe, this should be a very good Strawberry. Mr. Bunyard also sends excellent specimens of Dr. Hogg and British Queen, which is just now coming into the market. The flavour of Green's President, also sent, does not seem to strike us at all.

The yellow Marguerite (*Chrysanthemum Etoile d'Or*).—I enclose you a few blooms of this yellow Marguerite cut from the open border. I consider the flowers sent rather larger than those of the ordinary form of this plant which I used to grow here some years ago, and which produced very imperfect flowers. I think there is more than one variety of this plant sold under the same name. I used to grow it in pots in the greenhouse, but I found the maggot disfigured the foliage to such an extent, as to render the plants very unsightly. After many failures, I resolved to try another plan with it, and I am glad to say with much better success. As I have often seen inquiries

from many of your readers about this plant, I will give my treatment of it. I selected a good quantity of cuttings as free of the maggot as possible, and dibbled them into a cold frame, along with some *Calceolarias*, about the end of September. After the cuttings had been well watered the sashes were put on and kept quite close until roots had formed; air was then gradually admitted, so as to make the plants hardy before winter. They got no protection during winter, except a mat thrown on the sashes on very hard frosty nights. The plants nearly all rooted and formed fine healthy tufts, which I afterwards planted out about the end of April on a south border, which had previously been well manured and deeply dug. I planted them in rows 2 feet apart, with a space of 18 inches between each. At present they are meeting in the rows. Each plant is carrying dozens of fine large blooms, many being each $3\frac{1}{2}$ inches across.—J. M., *Corona, Broughty Ferry, N.B.*

**** The largest and finest flowers of this we have ever seen.**—ED.

Campanula persicifolia.—The Jubilee summer seems to have been especially favourable for the ripening of seed of this plant, for last year seedlings of it came up all over my garden, especially at the edges of gravel walks. As it is my custom to leave all seedlings of ornamental flowers which are not in the way of other plants, these Bellflowers are now flowering, and very ornamental they are. Some of them are 5 feet high, flowering from within a foot of the ground. The varieties of colour range from deep blue to white, through all intermediate shades, the pale lavender being perhaps the most pleasing. The shape of the bells varies very much, some being long and cylindrical, others shallow and expanded. These shallow flowers are the largest and most sturdy. I recently saw one at Ware's which was said to have been raised at York, and selected as something extra, but I think I could match it here. I recommend the raising of this *Campanula* from seed, which it always ripens.—C. WOLLEY DOD, *Edge Hall*.

Amorphophallus Titanum.—Dr. Masters recently exhibited at the scientific committee of the Royal Horticultural Society drawings of, and Mr. Morris described this remarkable Aroid flowering lately at Kew. It was received from Sumatra ten years ago, having been discovered by Dr. Beccari. The tuber weighed 56 lbs. at the beginning of this year, and grew at the rate of 4 inches a day. The spadix and stem together are 7 feet in height. The spathe was at first closely adpressed to the spadix, but on Friday morning, the 21st, it began to spread, and was fully expanded for one day only. By Saturday morning it again closed round the spadix. Like so many Aroids, the odour was most offensive. The male flowers are situated low down in a ring, and doubtless pollinated the females which were below them. Flies were observed at the base, but whether they assisted in the fertilisation or were laying eggs in the spadix could not be determined.

Papaver lævigatum.—A mass of this Poppy forms a brilliant spot in the nursery of Mr. Thompson at Ipswich. It is a new introduction from Persia, and evidently belongs to the umbrosium type, it having the same characteristic black blotch upon the petals, this being margined with a band of white. The flowers are from 3 inches to 4 inches across, the two outer petals being twice the size of the inner ones. The colour is a deep crimson-scarlet.—A. H.

BOOK RECEIVED.

"Bulletin of Miscellaneous Information." No. 31. "Guide to the Botanical Literature of the British Empire." Royal Gardens, Kew.

Lilium candidum dying off.—What is the experience of our readers with regard to our common white Lily? In some gardens round London it has died off wholesale.

Names of plants.—*Henry Keogh.*—*Copressus Lawsoniana erecta viridis.*—*G. P.*—Rose fallen to pieces; please send again.—*Anon.*—1, send again; 2, *Hypericum calycinum*; 3, *Leycesteria formosa*; 4, *Grevillea robusta*.—*Wm. Over.*—1, send better specimen; 2, *Campanula rapunculoides*; 3, *Thalictrum adiantifolium*; 4, *Veronica incana*.

WOODS & FORESTS.

PREPARING GROUND FOR YOUNG TREES.

PROPRIETORS who contemplate improving their estates by planting and reclaiming barren ground will find it to be of advantage to have the ground thoroughly prepared some time previous to commencing to plant. As this can be best accomplished in outlying hilly districts of the country during fine summer weather, no time should be lost in making a commencement. When the ground to be planted is a considerable distance away from any house or hamlet, it is very often advisable to erect a temporary shelter for the accommodation of the men during the time the work lasts. The principal preliminary steps to be taken in such cases are fencing, draining, breaking up hard spots, grubbing up and removing Briers, Brambles, and surface rubbish. Different kinds of fences are in use for enclosing plantations, but in all cases where stones can be conveniently obtained and at small expense for the erection of dykes, nothing makes a better fence, as stone dykes afford capital shelter for the plants. In forming a plantation in a deer forest some time ago, at an elevation of some 1400 feet above sea level, I enclosed the ground with 3650 lineal yards of stone dyke averaging from 5 feet to 6 feet high. On a wet, boggy spot of 90 lineal yards in extent, where no firm foundation could be got for stones, I had an upright wooden fence erected. The advantage of this fence immediately after the formation of the plantation proved to be immense, as it weakened the force of the wind to such an extent that its influence on the growth and health of the plants was quite apparent. This induces me to recommend the erection of a stone dyke fence in all cases where the material can be conveniently obtained and at small cost, and more especially in cases where the site and exposure are at a high elevation. Although galvanised wire makes a very efficient fence, yet it affords no shelter to the plants, and this is a serious drawback in cold, wind-swept districts of the country. The fact is, that the amount of shelter in such places often decides the point whether the undertaking will succeed or fail. In order to counteract this, I have found it to be a good plan to work in branches and rank Heather between the wires, by which means a close screen was formed at a small cost. In all cold, upland districts of the country planters would do well to practise this system, as its usefulness in such places cannot be too highly recommended. Another drawback to wire-fencing in such places is, that I have occasionally found deer caught by the heels and partly suspended by the two upper lines of wire. On one occasion I knew a keeper who was caught in a similar manner, and lost his life thereby. But whatever sort of a fence is decided upon, the planter should never for one moment lose sight of the utility of providing a reasonable amount of shelter for his plants. In the formation of such plantations it is not only necessary that the planter should make himself acquainted with the texture, quality, and capability of the different classes of soil to be found within the enclosure, but also with the fall and exposure of the different parts of the ground. In laying out such plantations, all straight, stiff, formal lines should be avoided as much as possible. In cases where jutting pieces of pasture land penetrate the hills along their base, it is sometimes desirable to plant the rocky slopes only, and allow

the natural pasture ground to remain in its normal condition to afford food for deer or other animals, as the case may be, during severe winter weather. By taking advantage of the natural features of the ground in this way, the value of the forest for deer or cattle is not only augmented to a large extent, but likewise the scenery of the locality rendered interesting and attractive.

When it becomes necessary to grub up or cut away Briers and surface rubbish of any kind, the work may be carried out at any time during summer; and in the case of Bramble bushes, these had better be cut over close to the surface of the ground about the end of July or beginning of August, when the roots left in the ground will then, as a general rule, die out of their own accord. Bushes of Heath, Cranberry, and Crowberry, when they do not exceed 6 inches or 8 inches in height, should be left undisturbed, as they afford excellent shelter for the young plants. Ground of any great extent generally contains a variety of soils, and in cases where the surface is of a wet or boggy nature, such should be drained at once. It sometimes occurs that hard, dry spots are to be found here and there. When such is the case, they had better be broken up where the plants are to be inserted. J. B. WEBSTER.

CALIFORNIAN FORESTRY.

It is a matter for great satisfaction to learn that the "people of the State of California represented in Senate and Assembly" have created a Board of Forestry for the purpose of collecting and diffusing information with regard to forestry, tree culture, and tree preservation. The readers of *Nature* will not fail to appreciate the economic significance of wisely administered forest laws, and there are special reasons why they should feel an interest in the forests of the Pacific slope. They will consequently be glad to learn from the second biennial report of the State Board of Forestry now before us that whereas, "under the old conditions, waste, destruction, and violation of law were rife . . . the activity of the Board in attempting a reform, and the consequent investigations of the Government, have had a most gratifying result." Fires have been reduced in frequency and extent, watersheds and springs have been protected, slopes saved from further denudation, and replanting effected. It seems strange that, with so great a wealth of native trees, replanting should have become necessary, and still more that the Eucalypts of Australia should be preferred for this purpose to the Pines of the Sierras. Nevertheless, there are many sites where drought-resisting trees are specially required, and in which some of the Eucalypts, such as *viminialis* and *corynocalyx*, do better than the Pines. Experimental stations have been established under different conditions of soil and climate, survey-maps have been constructed, while in the report now before us a beginning has been made of a scientific and popular description of the forest trees of California. The preparation of this catalogue has been entrusted to Mr. J. G. Lemmon; its illustration will be undertaken by Mrs. Lemmon and by photographs. For botanical purposes the writings of Engelmann, Sargent, Watson, Parry, and others in recent times, of Sir W. Hooker and Dr. Arnott at a more remote period, will supply what is needed.

Mr. Lemmon waxes enthusiastic—as well he may—over the forests of California. Pre-eminent over all forestal regions of the earth are the dense and extensive tree growths clothing the slopes of that most diversified and wonderful of mountain ranges, the Sierra Nevada of Western America—a range distinguished by the abruptness of its majestic uprise from the plain, the splintered and rough hewn forms of its thousand peaks, the high elevation of their pinnacles ever bearing their crowns of snow, but, most of all, pre-eminent for its bounteous and beautiful "enrobing forest . . . the noblest in

North America, perforated along its raised centre line by a thousand peaks rising through the mantle into perpetual winter, while both slopes, east and west, are rent by a million valleys, depressed through the robe (of forest) into the middle region of changing seasons, and the fringe of the garment trails out over the domain of almost perpetual summer." The Sierra forests, so far as environment is concerned, occupy a middle position between torrid and frigid conditions. They are composed mainly of evergreen trees, not one of which is specifically identical with the trees on the Atlantic side of the Continent, though often so curiously alike that each genus has its "representative species" on either side. The "big trees," *Sequoia gigantea*, or *Wellingtonia*, have been written about so often that most people are familiar with them. "Far excelling them in loveliness" are the four species of *Abies*—*nobilis*, *grandis*, *magnifica*, and *concolor*. These are all, with many others, cultivated in our parks and gardens, where they thrive better, as a rule, than in the Eastern States of America. Already they justify in a measure Mr. Lemmon's ecstasies; though it is probable that their beauty will not be enhanced as they grow old, for many of these trees which are pictures of grace and beauty when young become "scraggy" and unlovely when old. Fortunately the standard of age is different in trees and men, and some generations of men may pass before the trees lose their charm. Of their value as timber trees in this country we need not speak here; indeed, little definite is yet known; but, at any rate, there are well-founded hopes in the case of the Douglas Fir, the Nootka Sound Cypress, *Thuja borealis*, the *Thuja gigantea*, and some others which seem destined to play an important part in the forestry of the future.

After some generalities Mr. Lemmon proceeds to give a classification of the true Pines (*Pinus*), of the Pacific slope, a classification intended for popular purposes, and therefore one in which the histological characters of the leaves are passed over. The main divisions are divided into smooth-coned Pines and rough-coned Pines, corresponding to the sections *Strobos* and *Pinaster* respectively. In the one the scales of the cone end in thick, prominent, often spiny bosses; in the other the ends of the scale are nearly flat or project but little. Then comes a sub-division according to the length of the cone, surely a most untrustworthy criterion; for instance, Lambert's Pine (the gigantic Sugar Pine) bears cones varying from 10 inches to 22 inches in length according to Mr. Lemmon's own showing. Further sub-divisions are founded on the position of the young cone near the terminal leaf-bud or at some distance from it, on the length of time the cones remain on the tree, the way in which the scales eventually separate, and so forth. Having characterised the various species of *Pinus*, the author proceeds to give detailed information about each. This is the most valuable portion of Mr. Lemmon's report for European botanists. We would fain make many quotations, but our space allows us only to mention two species. The magnificent Sugar Pine (*Lambertiana*) was first made known by Douglas. It sends up a magnificent shaft 200 feet high, and sometimes much more. The value of this tree for "lumber" purposes is as great as its stateliness is imposing; hence thousands of noble trees have been shamefully destroyed. "Lawless vagabonds penetrate the Sierra forests with only the equipment of an axe and a long saw, and levelling these monstrous trees, they saw out a cut, examine it, and perchance move on to the destruction of others, leaving to rot on the ground trees that would yield to the careful lumber man 20,000 feet to 50,000 feet of clear lumber, worth hundreds of dollars." *Pinus Torreyana*, the lone Pine, also deserves special notice. On the sheltered inner side of the hills and on the spurs of the cañons, bathed with frequent sea fog, the trees have indeed a better chance, and they accordingly there each form a trunk some 30 feet or even 50 feet in height, capped with a spreading crown. Such a tree, apart from its interesting structure and history, would be a valuable introduction as a sea-coast Pine wherever the climatal conditions are otherwise favourable.—*Nature*.

No. 921. SATURDAY, July 13, 1889. Vol. XXXVI.

"This is an Art
Which does mend Nature : change it rather ; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

NARCISSUS BULBS DYING.

UNDER this head on page 6 Mr. Edward Colville asks a question. It is not always prudent to prescribe without seeing a patient, but as I take great interest in and have paid great attention to the ailments of Daffodils, I may be excused for saying that I do not agree with the answer given by "G. S. S." Neither Rhizoglyphus nor snake millipedes (*Arthronomalus*?) would account for what Mr. Colville describes, though both may be present on or near the decayed bulb. I have this year lifted with my own hand at least 10,000 Daffodil bulbs, not one of which has shown a symptom of having been injured by either of these creatures. The Rhizoglyphus mite, as its name implies, furrows the surface of bulbs, and leaves evidence of its work. It spoils Iris bulbs here in abundance, but never Narcissi. As for the snake millipede, if those rust-coloured little creatures with long antennæ are so called, I always look upon them as my friends, as they are certainly to a great extent carnivorous. I have more than once seen a worm rush from under ground to the surface with one of these millipedes fastened on it like a ferret on a rabbit, and I have hoped that they treat slugs in the same way. The symptoms described by Mr. Colville seem to me to be those of rot, a disease which has been unusually prevalent this year amongst Daffodils, some of my friends having lost about one-third of their stock from it. Its causes are obscure, but I have little doubt that they are atmospheric, as the plague is not confined to cold and heavy soils, although worse under these conditions. I believe it is due to the prevalence of a low mean temperature in late spring and early summer, such as we had in 1888, which prevents the bulbs—which certainly require summer heat for their welfare—from ripening properly. The part which seems most affected is the basal tunic, which becomes black and soft, and is found on examination to have thrown out little or no root, even though the bulb may have flowered. In bad cases the bulb rots away entirely. In mildew attacks some of the bulbs may be saved. I find exposure to a hot sun for a few days until the base of the bulb is quite dry and hard the best remedy. When Mr. Colville says that the roots are eaten away, is he certain that there were any to eat?

C. WOLLEY DOD.

Edge Hall, Malpas.

The evils of grafting.—I was very glad to see the remarks from such a good gardener as Mr. Scrase-Dickins on this subject at pp. 607-8. Grafting is in effect a kind of adulteration. When we ask the nurserymen to sell us one plant they often give us two in a more or less—generally less—effective state of combination. It is an analogue of the coffee and chicory business. Amateurs cannot be too alert and cautious in seeing that they obtain either honest plants on their own roots, or if grafted plants, then a declaration to that effect should be made by the nurseryman, and the name of the stock on which the species or variety ordered is worked should be given. Grafted plants of all kinds are open to all sorts of accidents and disaster, and very often the soil, or the climate, or the cultivator is blamed by employers for evils which thus originated in the nursery. It is to be hoped that all cultivators interested in trees and shrubs will now keep their eyes open and note the behaviour of grafted as compared with own-rooted kinds. If grafted plants are better than own-rooted

ones, then let us accept them, but do not let us be deceived in the matter. If in certain cases grafting as a convenience has to be resorted to, then let it be root-grafting, a system that eventually affords the scion a chance of rooting on its own account in a natural way. Many plants succeed as grafted when young, or for a few years, and afterwards fail, and then the gardener is often blamed instead of the nurseryman.—F. W. BURBIDGE.

* * We should not plant any grafted tree or shrub whatever so far as what are called "ornamental" trees and shrubs are concerned. There may be reason for the universal grafting of fruit trees, though we doubt it. But of the serious injury wrought by grafting in other ways there are heaps of evidence. The evils are more serious than have been stated in THE GARDEN.—ED.

ROSE GARDEN.

THE ROSE CONFERENCE AT CHISWICK.

WHILE looked at merely as a Rose show, this was not quite so satisfactory as could be wished, yet as a great gathering together of Roses it was a decided success. Neither was there any lack of good blooms, as your report in last week's GARDEN abundantly testified. What the conference chiefly lacked was more rosarians rather than more or better Roses, and still more emphatically a larger muster of the general public, for the encouragement of the former and the admiration of the latter. It did seem a great pity that so many Roses of all sorts, sizes, species should waste their sweetness, if not on the desert air, at least in an empty tent, and that so much valuable knowledge should be distributed to empty chairs. The charming old gardens were at their best inside and out, and those interested in fruit, flowers, and vegetables, especially Grapes, Tomatoes, and Peas, might spend a pleasant and profitable day in those gardens without either Rose lore, fragrance, or beauty to enhance their charms. But somehow or other Chiswick seems to have lost her ancient power of allurements, charm she ever so wisely. Never, even in her best days, had she more to offer the public than at this Rose conference, and yet what meets, rushes, and crowds there used to be there not so very long ago. True, there was little or no rivalry then, and Chiswick was the rage in those days. But surely greater publicity and wiser choice of seasons and of days, so as not to clash with other events, such as the Evening Fête at the Botanic Gardens, the Great National Rose Show at the Crystal Palace, or other floricultural fixtures, might win more of the public back to the old home of horticulture.

No one, however, that went to Chiswick could go away empty or dissatisfied. Mr. Barron and all concerned in the making or managing of the gardens, Rose show, and conference did their best to command and deserve success, and if, through the fierce drought of the past weeks and the sunless summer of 1888, Roses were neither so perfect nor so plentiful as we have seen them in the early days of July, assuredly neither the promoters nor managers of the Rose conference were to blame.

The latter has done one good thing at least; it has established the English reputation of Her Majesty. Assuredly never before has this fine Rose been shown in such numbers and perfection from the open air. Though somewhat coarse when fully expanded, no one can again question its perfection of form and colour when in three-quarter bud. In all hands and in all soils it seems, however, a slow, stubborn grower, and having presented the cultivator with a big Rose of soft satiny colour on the crown of each strong, stumpy shoot, it refuses to budge an

inch further or do a stroke more work till next year. Hence, however select Her Majesty, as becomes her name, may remain as a sensational show Rose, she is not likely to become a profitable market or even a popular garden variety.

The Rose conference in its more general results is likely to exert a potent influence in two opposite directions. It will conserve many old Roses that were ready to perish, and probably endow our new Roses with stronger constitutions and greater variety of form, size, colour, and fragrance. The first object is probably of equal or even greater importance than the second, whilst the conservation and the more general culture of our older Roses may be the readiest means of ensuring greater variety as well as sweetness in our new hybrids.

Take, for instance, the old velvet and other Damask or Cabbage Roses, and where shall we find more likely sources for refilling our big modern Roses with the satisfying old fragrance? And for real perpetual flowering Roses, where shall we find more likely parents, seed-bearing or otherwise, than among the old Monthly Chinas and the brilliant semi-double Gloire des Rosomanes China?

And if the Rose leaves of the future are to be fragrant as well as the blooms, where are we so likely to find the power to make them so as in our own Sweet Brier? And if the flowers are to be flaked and striped with harmonising or contrasting colours, again we have the latest of vari-coloured Rose blooms ready to our hands in the old York and Lancaster, Rosa Mundi, and other parti-coloured varieties; so that in culling up the old we not only recover all our first-loved Roses, but with them great potentialities for future and new developments. The time seems opportune for this meeting of old and new Roses in a national conference, for with the revival of the ancient Roses there have appeared almost any number of new varieties and over fifty new species of Roses. There has also been a fortunate hieing back after single or semi-double varieties. These were not numerous at the conference. But a taste for them is springing up, and they are not only beautiful in themselves—some of them magnificent in masses—but they promise to afford endless scope for changing the character and strengthening the constitution of existing varieties. Such robust species as rugosa, in its normal pink and pure white forms, could hardly fail to furnish us with new races of Roses, in which the flowers, stems, and foliage would match, master if need be, rich golden or other Teas, even should they attempt to overleap in size Paul Neron at its biggest and its best. The conduct of visitors at the Chiswick Rose Conference in fondly lingering over the old, now unfamiliar, garden Roses proves that these have lost none of their old charms through lapse of time, and bodes well for their speedy return in greater numbers to our gardens. A few of us, however, doubt the identity of some of the older Roses, notably the Velvet, Damask, York and Lancaster, and even the true Maiden's Blush of our boyish and girlish days, while the yellow Cabbage did not seem a true Cabbage Rose at all. But mayhap some of the fault was in ourselves as much as the Roses. And it is certain that such a meeting of old and new Roses as well as rosarians cannot have been held in vain. Other conferences and great gatherings of miscellaneous Roses will probably follow, and not a few of the finest Roses of the near future will probably date their origin from that of July 2 and 3, 1889.

D. T. F.

A rare and beautiful Rose.—Jean Lelievre is, in my estimation, one of the most beautiful hardy

Roses in the whole list of Hybrid Perpetuals. The flower is large, having a fine, full form, and is perfectly double. The colour is bright deep crimson passing to dark velvety maroon, and the fragrance is exquisite. I know of no Rose with greater substance in the flower. The petals are thick, and seem to present a rich velvety pile on their upper surface, and the flowers hold up extremely well after picking both in colour and substance. I have been greatly delighted with it in my garden this season, and it has been much admired by all visitors. It is a robust grower and seems quite hardy, but I regret to add that until now it has been a shy bloomer; in fact, it did not flower at all until this, its third year, though it grew vigorously last season. Whether such is its habit I know not. But the flower is so fine I would not be without it, even if it were possessed of this aggravating trait. However, I may not have treated it properly, though endeavouring to give it good culture. If I mistake not, it is a comparatively new variety in this country at least, nor does it seem to be grown to any extent here. It is probably familiarly known to many readers of THE GARDEN, though I do not remember to have seen the Rose mentioned in its pages. It would make a good coloured plate, and then if some experienced grower would either correct my notion of its shy blooming propensity, or tell us how to guard against it, or coax it into better habits, it could be appreciated.—H. HENDRICKS, *Kingston, New York.*

SHORT NOTES.—ROSES.

Duke of Teck is a vigorous H. P., and blooming well this season. Its flowers are globular in shape, full, rather too small, and clear glowing crimson-scarlet.

David Pradel has been exhibited well this season. It is a beautiful Tea Rose, exquisite in form, and with a distinct lilac shading on the bold, firm, well-arranged petals.

Primrose Dame is a Tea Rose of a fine globular shape, the colour delicate primrose changing to apricot in the centre. We noticed it remarkably good at the National Rose Show.

Victor Hugo is giving beautiful flowers this year, rich in colour, deliciously sweet, and well formed. It was one of the most beautiful of the dark Roses at the National Rose Society's show.

Four Roses very beautiful in a Surrey garden recently were Edith Gifford, Souvenir de la Malmaison, Gloire Lyonnaise, and Mme. Berard. The bushes were laden with the finest blooms.

Lady Helen Stewart has done well with Messrs. Laing and Sons this season. It is a charming Rose, sent out by Dickson in 1887, and never fails to carry plenty of its bright crimson blooms.

Duchess of Leeds.—This is a good garden Rose. Mr. Laing, of Forest Hill, speaks well of it as a dwarf grafted on the Brier. The flowers are pink and in the style of those of La France. It has been shown well this season.

Ulrich Brunner, so fine last year, although good, is not of the same excellence this season. The finest example of it we have seen was the premier bloom shown by Messrs. R. Mack and Son at the National Rose Show. It was a noble flower.

Countess of Rosebery is a Hybrid Perpetual variety that has done well this season. Its carmine-rose flowers of a brilliant shade are large, full, well cupped, and telling either in the garden or exhibition. It is one of Messrs. W. Paul and Son's acquisitions.

Rose Merveille de Lyon.—This is a robust-growing, free-flowering Rose. As seen at shows its massive, almost pure white blossoms induce many to note it for culture, but in one important respect it is disappointing, as the flower is quite scentless.—J. MUIR.

Rose Cheshunt Hybrid.—This Rose is now very fine on a wall of the mansion here. The plant is about 14 feet high, and bears between 500 and 600 blooms. I think this Rose is one of the best for walls and standards, its fragrance and free-blooming qualities entitling it to a place in every garden.—W. A. COOK, *Compton Bassett Gardens.*

Rose York and Lancaster.—We seldom see this historical Rose exhibited, but Rosa Mundi often does duty for it. At the Chiswick show were two or three boxes of Rosa Mundi labelled York and Lan-

caster. The difference between the two is most apparent. There is a certain similarity, but in Rosa Mundi the flowers have richer stripes and far more colour than in those of the other, which often come quite self.

Reine Olga de Wurtemberg is a climbing Rose that is now being much grown. It flowers for a long season, and its bright crimson buds are always welcome. A point of great importance is that it is a good autumnal.

Magna Charta is a Hybrid Perpetual that has made a good name. It is a vigorous variety, the flowers brilliant pink with a shade of carmine, large, full, well shaped, and free. It was splendidly exhibited in one or two instances at the Crystal Palace on Saturday last.

The most fragrant Roses.—Amongst these are the following: Bessie Johnston, Centifolia rosea, Earl Dufferin, Heinrich Schultheis, Madame Ferdinand Jamin, Maréchal Niel, Mrs. John Laing, Comtesse de Nadaillac, Adam, Lady Mary Fitzwilliam, Innocente Pirola, Abel Grand, Rubens, and Beauty of Waltham.—J. MUIR.

Tea Comtesse de Nadaillac is the Tea Rose of the year. It is in every winning stand, and often the premier bloom. No one has shown it better than Mr. Prince, of Oxford, the flowers of the loveliest colours, salmon deepening to rose, and mingling with delicate apricot and copper—a charming mixture. Mr. Prince has it on the seedling Brier, as in the case of all his Tea Roses.

Scotch Roses.—Yellow Roses are general favourites, and the Scotch Roses of this colour are charming. They form spreading bushes not unlike the Sweet Brier, and in June and July they produce multitudes of button-like flowers as finely formed as those of any of the noted exhibition kinds, and intensely yellow in colour. They are very suitable for grouping in the pleasure grounds and shrubberies.—J. MUIR.

L'Idéal (Nabonnand, 1887).—This Noisette Rose attracted considerable attention at the Crystal Palace show, and is a charming addition. It is quite distinct, beautiful in the bud, the colours mingled tints of copper and red, which almost suffuse the whole bloom. Though classed as a Noisette, we should put it with the Teas. If hardy and satisfactory in other ways, no Rose grower should be without it.

Rose Maiden's Blush.—T. B. Field, in THE GARDEN, July 6 (p. 5), says it is a pity this old Rose is not more grown, and he is quite right. It is one of the good old kinds that has been almost forgotten, though why, it is hard to say, for in delicacy of colour it stands unique, whilst its free blooming quality and vigour of constitution render it essentially a garden Rose. This Rose is the charm of many a roadside cottage. In some of the pretty cottage gardens in West Sussex it may be seen in clusters near the door, or in garlands upon the porch, or in masses in the borders. Many such I once saw in one day just on the outskirts of Chichester.—A. H.

Something like a Rose.—A neat variety of the double white Rose of the rambling type growing in the garden now presents an unbroken frontage down to the Grass of about 15 yards, is about 7 yards broad to the back in centre, about 8 feet high, has several thousand spent blooms on it—probably 4000 expanded blooms at this date—and maybe four times as many buds to come out. It is growing over a common Laurel bush, which has been kept down to oblige the Rose and provide support for it. I find it useful in other ways as an argument in favour of "extension," for which purpose I have tended it for some years, and never allow a knife to come near it except to cut buds off. When any gardener calls about this season and begins to preach restriction and the knife, I plant him in front of this Rose and leave him to his meditations. It saves a deal of wrangling, I assure you.—J. S. W.

Own-root Roses.—All the own-root Roses I have I struck last October twelvemonth, and a capital lot they were—over 200, and deaths were not 5 per cent. I struck another nice batch last autumn, and, fortunately, some of the yellow Cabbage, as I know it now, were amongst them. My experience of own-root Roses is so short that I cannot yet speak with any certainty of their well-doing, but, judging from the way in which dwarfs grow when they have been planted deeply and the

stocks have died out, I should think there is little to prevent young plants from doing well. My opinion is that the first two winters have all to do with their success; if they can be preserved over that time without injury to the bark, the wood gets too woody to suffer from cold. Our twenty-one months old Hybrid Perpetuals are now throwing out excellent growths from the ground level, which promise well for next year if they get thoroughly ripened. Our Teas are very few indeed, but they strike even more freely than Hybrid Perpetuals, only I use a frame for them. I have planted out this spring Mme. Lambard, Mme. Falcot, Marie Van Houtte, Aline Sisley, Reine Marie Henriette, Catherine Mermet, Homère, and Gloire de Dijon, all struck last summer. These are all breaking strongly now, though they were rather weak at first. This short list comprises all the Teas I have, except a poor plant of Maréchal Niel and some grand Devonians.—C. J. TALLACK.

—How is it that Roses on their own roots cannot be obtained strong in nurseries? I see people writing about their merits, but when I try to buy any I am stopped. Yet I see cottagers striking the cuttings and dividing them afterwards with ease. Perhaps some reader will kindly tell me through THE GARDEN where I may buy them.—E.

PEGGING DOWN ROSES.

THIS is another way of making our gardens more interesting, and it may well be done in the case of all vigorous growing Roses. Beds, borders or groups of Roses so treated are amongst the most delightful things in a garden. If the long shoots of the past season's growth are pegged down to the ground they will flower their whole length; whereas if left standing, only the upper buds will break, and if pruned hard back, beauty is literally and needlessly sacrificed. A strong shoot is usually thrown up from the base of the one pegged down, so that when pruning time comes, the operation here is simply to cut away the old shoot and peg down the new one, and so on year after year. One season of growth, another of flower, and then the shoot is cut away; thus the Roses are ever being rejuvenated and the youthful vigour brings abundance of bloom.

A bed of Moss Roses treated in this way has certainly been one of the prettiest things I have seen this summer. But all Roses that make a vigorous annual shoot can be similarly treated. Gloire de Dijon, Bouquet d'Or, Rêve d'Or, Madame Berard, and others of this class often make shoots 6 feet or 8 feet long in one year, and what could be more simple than to peg such shoots down, and what more beautiful than to see them bearing flowers their whole length.

A group of pegged-down Roses suggests itself as being a simple yet pleasing way of filling many a quiet nook about the garden, even in the borders under the windows of the house, or as a foreground to taller plants in borders. Even beds of them are not flat nor monotonous, as some might suppose, for the uprising shoots break all flatness, and in addition they shield and shelter the flowers. If the shoots have been properly managed when laid down, not an inch of bare ground will be visible.

Dwarf and standard Roses are found in thousands of gardens where as yet the system of pegging down is unknown, but it is such a distinct gain, that as a system it deserves to become very popular.—A. H.

* * We hope this phase of Rose-growing will be more practised in our gardens. We have found that many of the shy-flowering H. P.'s when pegged down produce a flower at every bud along the shoot; whereas, when tied to a stake or allowed to grow at will, only one flower was to be had at the point of the shoot.—ED.

Wood wool for packing fruits.—This material seems likely to prove a great boon to those who have much packing of soft fruits to do. A box of Peaches and Nectarines, with wood wool used as packing, was shown at a recent meeting of the Royal Horticultural Society. It is elastic, soft, free from smell, except of the wood, which it does not impart to the fruit, and is

cheap; moreover, the same material can be used several times over. The wood is that of the Aspen, and Mr. George, of Putney, who first discovered its value for fruit-packing, says there is an increasing demand for it.

NOTES OF THE WEEK.

A good white Phlox is Snowflake. It has a strong spike of large pure white flowers. We noticed it in Messrs. J. Laing and Sons' Forest Hill Nurseries.

The Red American Water Lily is now beautifully in flower in my pond. There are always some flowers open.—A. C. BARTHOLOMEW, *Park House, Reading*.

I SEND you a small gathering of double Begonia blooms from seedlings raised last year. Give us your opinion of them in THE GARDEN.—W. DENHOLM, *Castle Levan, Gourock, N.B.*

** Not equal to others in cultivation.—ED.

A Blue Lobelia of great depth of colour, the flowers large, and with a conspicuous white eye, was shown by Mr. Weeden, St. John's Nursery, Ealing, at the Chiswick Show. It seems a distinct advance on existing kinds.

The white Fraxinella.—*Dictamnus Fraxinella* alba was flowering well the other day on a border in the Chiswick Gardens. Its flowers are quite white. We might see more of this variety than we do, as it is the type that is usually grown.

A rich garden effect, peculiar in its striking brilliancy, was a mass of the orange-coloured Peruvian Lily (*Alstroemeria*) with blue Delphiniums and Willow Herb as a background. This happy piece of planting, was novel and showy.

Arauja (Schubertia) grandiflora.—I enclose a flower of this, seven divisions instead of five, the normal number. The same plant has also flowers with five and six divisions. It makes it a still more perfect flower.—A. C. BARTHOLOMEW, *Park House, Reading*.

Hollyhocks are sadly afflicted with the disease. In few gardens have the plants a healthy appearance that betokens promise of good flowers. In one suburban nursery almost every clump had died, either during the winter or from the effects of the disease.

We send you a new Tea-scented Rose (not in commerce)—*Corinna*.—WM. PAUL AND SONS, *Waltham Cross*.

** A very prettily-coloured and distinct Rose, but the last quality is difficult to possess now-a-days, in the face of so many prettily-flowered coloured Roses of this class.—ED.

Regent's Park is gay with hardy flowers. In one corner there is a bank of shrubs, amongst which Delphiniums have been planted, in front of these Bell-flowers and tufted Pansies. It is not often we have seen a finer picture in a London park. It gives great hope for the future in gardening in London parks.

Carnation Germania.—This is now flowering freely, and it is not too much to say that it is decidedly the best yellow Carnation we have. The flowers are large, with broad, well-formed petals, and the calyx does not split. It also appears to be of a good constitution, the plants making clean, healthy growth.—F. H.

Carnation Pride of Penhurst.—Yellow Carnations are generally considered of bad constitution, and from my experience the above is no exception. The first two years it did well with us and was a great favourite, but it has now deteriorated so much as to be scarcely worth growing. Have others had similar experience?—F. H.

The white St. Dabeoc's Heath (*Daboecia polifolia* alba) is a pretty dwarf hardy Heath blooming now in Messrs. G. Bunyard and Co.'s Maidstone nursery. It looks well planted in the front of shrubberies, on the rockery, or banks. The flowers are like white bells and about the same size as those of *Andromeda speciosa*. The type is common in some parts of Ireland.

Statice Suwarowi.—I am sending you flowers of this beautiful little annual. It is doing remarkably well with me this season on the light gravelly soil. The flowers sent are from seed sown in March and the seedlings planted out about the middle of May. I have a row 20 feet long in front of a bed of the white Pink Mrs. Sinkins, where they have a very pretty effect.—T. B. FIELD, *The Gardens, Stanley Hall, Bridgnorth*.

** Very pretty, and as fine as we have seen it.—ED.

Ipomœa Leari.—At a flower show held recently at Kettering, a specimen of the Indian

Ipomœa Leari was shown in a collection of plants trained over a balloon-shaped frame as one would an *Allamanda* or a *Dipladenia*. The specimen was clean, well grown and flowered. It is so seldom that this plant is seen either as a specimen or a house plant, that its appearance is worth recording. It is figured in the *Botanical Magazine*, tab. 3928, under the name of *Pharbitis Leari*.

Royal Botanic Society Gardens, Regent's Park.—Their Royal Highnesses the Prince and Princess of Wales have signified their intention of being present on Monday next, July 15, at these gardens, that being the jubilee or fiftieth anniversary of its existence. The society proposes to celebrate it by holding a special exhibition of Roses, and a floral parade or procession of flower-decorated carriages, cars, &c., after the style of those held in the south of France during the carnival.

Veronica Traversi.—We are reminded of the usefulness of this shrub by a plant now in full bloom on the Chiswick rockery. There are few finer plants in their season than this, and the way to see it in its best aspect is to have single specimens on turf, where they can spread without hindrance. It does well at Kew, but it is not very hardy, though there is no risk in planting it out in the southern counties. Further north it would possibly be severely crippled, if not killed, in a hard winter.

Hardy Spiræas at Maidstone.—There is a wealth of beautiful hardy Spiræas, but these are seldom planted well or in good variety in gardens. Usually they are relegated to shrubberies, where it is impossible for the plants to grow with the freedom and grace they will if unrestricted. *Spiræa salicifolia*, *Nobleana*, *aristifolia*, *Douglasi*, *callosa* alba, *Bumalda*, and the deep red-flowered *crispifolia* were all in beautiful bloom the other day in the Maidstone nursery of Messrs. G. Bunyard and Co. These are a few of the best of the genus.

Pink Broom.—*Notospartium Carmichaelæ* was flowering a few days ago in the Coombe Wood Nursery of Messrs. Veitch and Sons. Pink Broom is the name given it by the residents of Middle Island, New Zealand, and such an English name is quite appropriate. It is just like a pink Broom, and a plant of it between 3 feet and 4 feet high, smothered with the racemes of small pink flowers, is as pretty as anything we know. It is quite hardy, and is all the more valuable from its blooming comparatively late in the season. It is described as half hardy in some books, but the fact that it stands the winter at Coombe Wood does not prove this to be correct. Possibly further north protection would be required. It is one of the most beautiful native plants of New Zealand and belongs to the Pea family. Even when not in flower it is interesting, as the slender, whipcord-like branches are most distinctive.

Nasturtiums, or Tropæolums, are flowering well this season at Chiswick owing to the dry weather of the past month. Such annuals as these delight in dryness, and last year were a conspicuous failure through long continued wet. An extraordinary growth of foliage resulted, but few flowers. This year the plants are in their normal beauty, and a few of the best types are in bloom at Chiswick. They comprise King of Tom Thumbs, scarlet; King Theodore, rich crimson; Golden King of Tom Thumbs; ceruleum roseum, flowers rose-pink, and appearing well above the foliage; Spotted King, rich yellow, blotched at the base of each of the petals with maroon-purple; Empress of India, a well-known dark-flowered type, the leaves quite of a glaucous grey; Crystal Palace Gem, sulphur-yellow; Cloth of Gold, a variety of too vigorous a growth, the flowers comparatively few and hidden by the leaves; and Pearl, a good dwarf type, very free, and the creamy yellow flowers well seen. One named Bronze should be discarded. Its flowers are of a dirty brown, weak, and unsightly.

Zinnias are blooming exceedingly well in the Royal Horticultural Society's gardens at Chiswick. There are two square beds of them on the left-hand side of the walk leading to the conservatory. It is a pity we do not see more of the Zinnias. They

are old-fashioned flowers, until lately greatly at discount; but with the splendid colours now obtained they should speedily become popular again. The flowers are massive, large, and show a brilliant diversity of colours, from the deepest crimson to rich orange. The carmine, white, orange-scarlet, and pink colours are bold and decided. The growth of the plants is also vigorous, the leaves abundant and rich green. It is very easy to raise a good stock from seed, and most important to have a first-class strain of flowers likely to give rich and telling colours.

Scabiosa caucasica.—This pretty plant, which was figured and fully described in THE GARDEN, Feb. 9, 1889, is fully bearing out its reputation as a free-flowering, perfectly hardy and easily grown plant. The soil in which it is growing is light and sandy, and this, I believe, has much to do with its freedom of blooming. In stiff clayey soils it flowers very sparingly, but in light soil just now it is a perfect picture, the large heads of blue flowers being very fine and showy. It really deserves a place amongst the very choicest of our border plants. It may be increased by seed, which ripens freely in good summers.—D.

Ostrowskya magnifica.—This remarkable plant is now in flower on the rockery at Kew and promises to be one of the most striking introductions of recent years. We are told it is perfectly hardy, and there need be no fear of planting it out in the open, even at the beginning of a severe winter. The long carrot-like root should be placed not less than 3 inches below the surface, and no other covering will be required. The plant now in flower at Kew has very large flowers of a pale lilac blue, and this appears, so far, to be the only form introduced. In the "*Gartenflora*," however, a dark blue-flowered variety is spoken of which would be an acquisition. It was figured in THE GARDEN Dec. 29, 1888.

The white African Lily (*Agapanthus umbellatus* albus) was remarkably well shown by Mr. S. Reece, gardener to Mr. R. Whyte, Old Road, Lee, at the Lee and Blackheath Society's exhibition. This charming variety has a noble head of flowers, which are of exceptional purity. The proper way is to grow it with the blue-flowered type, as the two go well together. It is one of our choicest introductions from the Cape of Good Hope. The *Agapanthus* makes a splendid tub plant. In a Surrey garden last year there were several large clumps of it in a garden of Roses and hardy flowers. Never have we seen the African Lily better placed, or more in accord with the surroundings. The strong spikes of flowers rising from the rich green foliage gave a delightful blue shading, which few other plants could supply. The variety alba may be used in just the same way. Plenty of water is required when out of doors, and in some spots in the south it would be safe to leave the plants out the whole winter, but not in the north. *A. u. maximus* has larger umbels of flowers than the type, and there is a double variety that is pretty when the flowers open well. This they often fail to do.

Lilium candidum.—This lovely Lily is now in great beauty, and being grown in nearly every garden, whether large or small, has a very striking effect, for as the weather is exceptionally fine the blossoms are correspondingly clear and bright. During heavy rains the pollen that is very abundant on the stamens of this Lily gets washed off and soils the petals. But this season the blooms are at their very highest state of perfection. To judge of the queries as to the culture of this Lily from time to time, I imagine that in many parts the natural conditions of soil are not so favourable as they are in this locality, for here, without any special preparation, this Lily grows and increases very quickly. Our soil is a light sandy loam, resting on gravel, and is therefore naturally warm and well drained. Drought, from which many other hardy flowers in this locality suffer, does not usually affect this Lily, as it has made its growth and is in bloom before the soil gets too dry. As regards the bulbs, I think a good drying in the soil is rather beneficial than otherwise, for however baked the soil may be, directly the rain comes the young growth starts

away with great vigour, and if I desire to make a fresh plantation I like to do it while the bulbs have no young foliage, for although they may be removed at any time during the winter, I never find them make such strong growth as when transplanted directly they are done flowering. This Lily is very useful for pot culture, and if good bulbs are lifted when at rest and kept in cold frames during winter, they will be found very useful for conservatory decoration during May and June.—J. GROOM, *Gosport*.

The pink Water Lily.—The pink variety of the common Water Lily is in bloom here in an open pond. It is very pretty, and goes well with the white and yellow which grow with it. I should like to know from any of your correspondents who have it, how it succeeds with them, and if they find that it blooms freely.—A. RAWSON, *Windermere*.

Peruvian Lilies from seed.—I have a very large clump of *Alstr meria chilensis* about 6 feet by 4 feet, and it is now in full bloom and a most beautiful sight, one mass of blossom. Perhaps all do not know how easily it is raised from seed. I sowed the seed in April last year, on a warm dry border against a south wall. It flowered a little in the autumn, although the growth was not very strong. This year it has come up grandly, and looks as well as many clumps I have seen that have been established for years.—LOXWOOD, *Sussex*.

Lathyrus Drummondii.—One of the very best and richest of the Everlasting Peas is one called Drummondii, but which the Kew authorities say is *L. rotundifolius*. That it may have an affinity with the latter there is no doubt, but the flowers are larger and of a bright rose-pink or carmine; the leaves are smaller, rounder, and thinner in texture, the stipules are only half the size, and the plant grows at least a couple of feet higher. There is a similar, if not identical plant grown in nurseries under the name of *L. Sibthorpi*. The flowers last an unusually long time, and are very bright and attractive. It is perfectly hardy in the open.

Michauxia campanuloides on the Kew rockery is a grand sight just now. The flower-stems are each between 4 feet and 5 feet high, the remarkable looking flowers being more ornamental than had been supposed. Though an old garden plant, one rarely sees it in collections now, probably because of its being of biennial duration only. It, however, ripens seeds in such abundance and is withal so easily managed, that the trouble of harvesting and raising is very small compared with the grand appearance it has when in full flower. Though a native of the Levant, it will be found all the better for a nice warm border.

Verbascums at Ipswich.—These form a conspicuous feature with Mr. Thompson at present. *V. olympicum*, 8 feet high, is simply grand. One plant, a self-sown seedling, was particularly noticeable, but, strange to say, it had scarcely any tomentum upon the leaves. There was a large group of another kind, which Mr. Thompson said he had from France twelve years ago, under the name of *vernale*. This variety, however, never produces seed. It is truly perennial, and is increased by division. The plants I saw in flower had been growing in the same position for ten years. This variety has handsome, broad green leaves. The flower-spikes are about 5 feet in height and branched, the flowers being yellow. The stamens, which are fringed with violet-purple hairs, impart a peculiar and beautiful charm to the flower. Undoubtedly this Mullein deserves to be widely grown, as it is of great merit and of the highest value for the border, where a group would form a distinct and handsome feature for several weeks.—A. H.

Flowers from Holland.—Some choice Lilies and other herbaceous or bulbous plants still adorn my garden, although the weather has been very unfavourable for the last month, and an almost tropical sun is burning and scorching the more tender plants, and a daily renewed strong north-eastern wind renders our light sandy soil as dry as dust. By this same post I forward cut flowers of a few of my best things, which if they survive the journey are well worth looking at, I think. May I draw

your attention to the very dark and broad-petalled form of *Lilium elegans* (Thunbergianum) sent, this one being, in my opinion, one of the very best of all the numerous forms of this popular Lily. As far as I know, it has not yet received any special name; we simply call it scarlet, but you will, perhaps, be more able to find out what it is. For comparison I also add a few flowers of the true old Dutch *Lilium chalcidonicum* and some of the *gracum* variety. The first-named has become very scarce, but is by far the best, the leaves being much broader, of a deeper green, and the flowers a glossy blood-red, whilst the now-a-days more generally cultivated *gracum* variety is altogether a much poorer plant, with greyish foliage and lighter coloured flowers; the difference is detected at once when the plants are grown side by side.—C. G. VAN TUBERGEN, JR.

* * A beautiful gathering of Lilies was sent along with the above. Also included was a very handsome spike of *Eremurus Bungei*.—ED.

The herbaceous Spir as, the best of which seems to me to be the lovely *S. palmata*, are essentially summer flowers, and when managed well by giving various exposures, &c., afford a great deal of pleasure during June, July, and August. *S. palmata* and its varieties are now very beautiful in the near vicinity of ponds or lakes. They should be planted just near enough to feel the water without having too much during the winter time, when so many even moisture-loving plants suffer. These Spir as, if planted a foot above and a few feet from the edge of the water do very well, and afford a splendid display of their brilliant feathery flowers for a long period. Growing along with the Japanese Irises they are delightful.—D.

Meconopsis Wallichiana, as seen in the Kew rockery, never fails to produce a quantity of its lovely blue flowers, and seems to attract visitors that are not specially interested in rare plants. It is one of those plants that requires a specially prepared spot to grow well, and in a peat bed under the shade of a huge *Arundinaria* we are told that it is as near an imitation of its natural habit as would be possible in our country. It requires shade; indeed, it seems to do best where it can have no chance of seeing the sun at all and in the near vicinity of such a plant as will give drippings of moisture for some time after being watered overhead. In just such a place its near ally *M. nepalensis* will also do well, but it lacks the beautiful soft blue of the above species.

Cathcartia villosa.—A large mass of this in full bloom which we lately saw shows how useful a plant it is. Its dwarf and free-flowering habit is a great recommendation. Growers have often complained of its lack of flowers, but this is only the case with old plants that seem to have got stunted and are either past or refuse to flower after a few years in the same spot. This spring we planted out a few hundred seedlings, and the result is a most magnificent display of lovely soft yellow flowers. It will be found very useful as an undergrowth for such plants as *Meconopsis Wallichiana* or others of that class. It is a native of the Himalayas, is quite hardy, and requires a shady spot in rich peaty soil.

Spir a bullata.—As a shrub for the rockery there are few plants in every way so suitable as this or *S. crispifolia*. All through this month and part of the next it charms us with numerous branches of deep pink or crimson flowers surmounting a dense forest of dark green leaves. It is a native of China, growing only 1 foot or 2 feet in height, and is perfectly hardy, even during our severest seasons. *S. Thunbergi* for bold rockeries is also very useful, and when it attains full size, which it does very quickly, it is one of the most delightful and profitable shrubs we have. A new species, called *S. Hacqenti*, is sure to become a favourite. The flowers are rather large, and the plant does not exceed 3 inches or 4 inches in height.

Primulas in flower at Kew.—A hope was expressed some time ago that with the introduction of new species of Primulas their flowering season would be extended. There is at the present time

no less than four splendid specimens of species in fine flower at Kew: *P. suffrutescens* and *Rusbyi*, both American; *P. obconica*, Chinese; and *P. floribunda*, Himalayan. *P. obconica* and *P. floribunda* are flowering in the open rockery, and though not hardy, they are producing such a gorgeous display as to make it worth while to raise young plants annually for planting out as soon as all danger of frost is past. These Primulas require good rich soil, and should be planted in nice warm positions. *P. suffrutescens* and *P. Rusbyi* are quite hardy, and will do well in rich peaty soil in the rockery. If planted in several aspects the flowering season may be greatly prolonged.

Phyteumas.—Amongst these none is more lovely now than *P. limonifolium*, one of the most beautiful and graceful of plants. It was sent to Kew from the Continent under the name of *Campanula virgata*, but its habit, and petals free to the bottom, exclude it from the Hairbells proper. It is of perennial habit, and a far more beautiful plant than the well-known *P. campanuloides* both for borders and the rockery. The flower-stem rarely grows under 2 feet to 3 feet in height, the numerous flowers being almost sessile, and covering not far short of two-thirds of its entire length. It flowers freely even after being in the same spot for several years, which is more than can be said of many of the others. There is also in flower at Kew one called *P. Sieberi*, a charming little alpine species, and, as far as can be judged at present, it gives promise of being a useful acquisition.

Ramondia pyrenaica alba.—I saw this plant at Froebel's nurseries in Zurich two years ago, and as far as I can remember its flowers were pure white. The plant was, it seemed to me, more vigorous, and the flowers were larger than those of the usual form. It was so strongly recommended to me that I bought a specimen, but I have been disappointed in finding that the colour of its flowers is not white, but a very pale mauve. I noticed that the *Ramondias* at Zurich were all planted in rock-work, so that their roots ran horizontally into the soil, and I have since found that these plants do much better so than when growing in the border. The *Ramondia* has a very short stem, and the leaves rot away in winter if they lie flat on the soil. All my plants are now placed on a nearly perpendicular wall facing one of my rockeries; they look much more natural in such a position, and they evidently like it better.—F. W. HARMAN, *Oakland House, Cringleford, Norwich*.

—Without a doubt there are spurious varieties of the so-called "white" *Ramondia pyrenaica*. Even "O. F., Lehenhof," who doubted my statement as to a rose or flesh-tinted white form "not so good as the lilac type" (p. 606), afterwards writes in the *Gardeners' Chronicle* of June 6 (p. 14), admitting that *R. pyrenaica alba* sometimes has a reddish tint. In a word, there are white *Ramondias* and whitish *Ramondias*, and amateurs will not lose by being cautious as to the variety of white *Ramondia* which they purchase. What I am desirous of obtaining is a pure white *Ramondia* with flowers as large, as bold, and as well imbricated as are those of the type, and such a variety I have not yet seen. As an old cultivator of hardy flowers I am becoming as cautious as are the Orchid amateurs; that is to say, I like to see a plant in flower before I purchase it. It is most disappointing to purchase from mere descriptions and figures, which do not tell all the facts of the case. In growth the flesh-tinted white is quite as vigorous as the type, but the flowers are most disappointing when seen beside those of the best lilac-purple forms.—F. W. BURBIDGE, *Dublin*.

Striking Combretum purpureum.—"Scepticus," in your issue of June 22, states that he has been propagating for the trade for years, and has never seen a plant of *Combretum purpureum* struck from a cutting, and asks for proof. Some ten years ago I was greatly struck by seeing a plant of many years' growth in full flower in Yorkshire. I brought home three or four cuttings, and knowing the difficulty of procuring the plant, and also of striking it, gave my gardener special directions to do his best to strike a plant. The one successful result has flowered here for two or three years, and "Scepticus" may see it if he cares to do so.—JOHN W. FORD, *Chase Park, Enfield*.

OFFINGTON, WORTHING.

ON the outskirts of the town of Worthing is Offington, the picturesque seat of Major Gaisford. It is another of those ancient Sussex residences which has weathered several centuries and gathered beauty around it simultaneously with age. It was the seat of the De-la-Warrs in the fifteenth century, and perhaps previous to then a monastery, as the upping-stone from which the abbot used to mount his white mule is still to be seen, though now overgrown with Ferns and Ivy. There are traces of the place having been much larger, and possessing a great courtyard like that of Parham. There are also bits of old wall interesting from the varied growth upon them of such things as Roses, flowering Currants, *Jasminum nudicaule*, *Clematis flammula*, Honey-suckles, Willow, *Pyracantha*, Wallflowers, *Aubrietias*, *Antirrhinums*, *Alyssum*, and Ferns. Since the time of the De-la-Warrs Offington has passed through the hands of several owners, till some thirty years ago it was purchased by Major Gaisford, who being fond of gardening has converted the place into a little paradise,

berry into Sussex in the seventeenth century, so that the age of this tree may be dated from that time. A limb about 9 inches in diameter was cut off this tree two years ago and the end sunk into the ground, and it is growing in such a way as to perfectly justify the conclusion that roots have been made. There is a curious old standard *Wistaria* with a stem about 8 feet in height and 3 feet in girth. It is completely wreathed in *Muhlenbeckia*.

At Offington such a host of rare and uncommon plants are to be found as to almost render it impossible to mention them all without compiling a small catalogue. Many things are hardy here that would perish elsewhere, whilst others, though hardy in many south of England gardens, are only found in such a place as this. First and foremost mention must be made of *Carpenteria californica*, of which an engraving is given. The specimen is in the open border and first flowered four years ago, whilst it increases in interest, size, and beauty every year. The fact that such a choice and beautiful thing as this will live and thrive shows what the natural conditions are. *Choisya ternata* has

Lapageria alba and *rosea* were both in flower upon the open wall, as also were *Rhynchospermum jasminoides* and *Solanum jasminoides*. *Fremontia californica* had flowered against the wall all through the season. It has large yellow-cupped flowers, which are each nearly 2 inches in diameter. When this grows large, as it probably will, it should be one of the finest features in the garden, for there cannot be a more desirable or more beautiful wall shrub.

The Nepaul Laburnum (*Piptanthus nepalensis*) covered a large piece of wall. *Physianthus albens* was also in flower. *Lardizabala bitermata* and *Edwardsia grandiflora* were upon the walls, and a host of other beautiful things. *Xanthoceras sorbifolia* was developing into a good bush, whilst all the following things were thriving either upon the wall or about the garden: *Mandevilla suaveolens*, *Caryopteris mastacanthe*, *Heimia salicifolia*, *Lagerstroemia indica*, *Metrosideros floribunda*, *Cistus algarvensis* and others, *Rose* species in great variety, *Hamamelis arborea*, *Pterostyrax hispidum*, *Ozothamnus rosmarinifolius*, *Berberis fascicularis*, *Aristolochias*, *Elæagnus* in variety, *Clerodendron trichotomum* and *C. foetidum*, *Melanthus major*, *Desmodium penduliflorum*, *Akebia quinata*, *Billardiera* in variety, *Nandina gigantea*, *N. domestica*, and *N. purpurea*, *Aralias* in variety, *Habrothamnus fasciculatus*, *Clematis* in variety, and many kinds of *Rubus*. *Eucalyptus globulus* was over 30 feet high and flowers every year, whilst *E. coccifera* has proved hardy, and *E. Gunni*, raised from seeds sent from Tasmania is now being tried.

In this long list of interesting trees and shrubs there must be many omissions, but enough has been said to reveal a little of the wealth of Offington in this respect. Added to these there is a fine collection of some of the best hardy plants. A large bed that was very fine in autumn was one in which *Tritomas*, Sea Hollies, *Agapanthuses*, *Acanthuses*, and other vigorous hardy plants were associated, each in a bold group. With all this variety of plant life there was still found room for a little summer bedding, a small garden being devoted to it. Under glass, also, were to be seen many rare singular and beautiful plants. A fine old tree of the Brunswick Fig, that stood in the kitchen garden was blown down and destroyed in the autumn. A garden such as that at Offington, rich in a variety of beautiful things is an example that might well be imitated. There is not a more interesting garden throughout the whole county of Sussex, but there are many with as good facilities. Everyone will not be so successful with naturally tender things as Major Gaisford has been, nor is it desirable, but as the very best garden that has yet been made can only show a portion—and a very small portion—of the wealth of hardy vegetation gathered from all the temperate parts of the globe, why should it be possible to bring a charge of monotony home to the doors of English gardens generally? A. H.

Seed-saving.—Gardeners as a body are, happily for them, relieved of the necessity for saving their own seeds. Gardening brings ordinarily plenty of troubles in the shape of insects, changeable climate, wet, drought, and lots of other ills, but as long as there is no crop of seed, more or less valuable, depending on the weather or burdening the gardener's mind, gardening as a vocation is endurable. A fine breadth of plants, blooming profusely, presents all the promise of a big seed crop, but a week's wet weather or withering heat, or an attack of blight, or some other ill may interpose, and collapse ensues. Excessive wet or great drought are the two chief difficulties to be encountered in seed growing. They are the elements which mar a crop



Entrance Lodge, Offington, Sussex.

where many rare, beautiful, and uncommon things find a congenial home and well repay their owner for the trouble he has taken. From first to last the visitor to Offington finds his interest fully sustained. The lodge, of which a good engraving is given, is the full embodiment of simplicity and beauty. It stands in a quiet corner, backed up by noble trees, and has its walls festooned with climbing plants. A pleasant drive winds through a small, but pretty park, passing under a short avenue of picturesque old Scotch Fir trees. There are also great Oaks and Elms, some of which would girth nearly 20 feet, and giant Spanish Chestnuts, one of which girths 15 feet at 4 feet from the ground. Upon nearing the house there is seen standing out by itself probably one of the oldest trees of *Pinus insignis* in the country. The stem girths 10 feet at 3 feet from the ground, and the ponderous head of branches has a spread of about 55 feet in diameter.

In the flower garden stands a very old Mulberry tree, one of three or four more in the neighbourhood of Worthing, all the trees being of about the same age. Mr. John Tradescant is supposed to have first introduced the Mul-

made a nice bush, and flowers twice a year in spring and autumn. *Eugenia apiculata* and *Ugni* are both doing well. *Olearia dentata*, with Holly-like leaves, is a mass of bloom in early summer, and so are the bushes of *O. Haasti* later on. *Eurybia Gunniana* and *E. stellulata* are covered in season with their Daisy-like flowers, whilst, as might be expected so near the sea, the *Escallonias* are magnificent both in their glossy green mantle of foliage and in their profusion of flowers. The kinds that do well here are *E. montevidensis*, *E. illinita*, *E. rubra*, *E. pulverulenta*, *E. Phillipiana*, and *E. coquimbensis*. A fine pyramidal bush of *Pittosporum Mayi* 12 feet high stands at one corner of the garden, and is never injured by frost; other *Pittosporums* that live here being *P. Tobira* and its variegated variety. Close to these *Dracæna australis* makes a fine healthy mass 10 feet high, and *D. indivisa* grows 12 feet high.

A fine large-leaved *Garrya* was one named *macrophylla*. The *Hydrangeas* were glorious late in autumn, such kinds as *Thomas Hogg*, *radiata*, *mandschurica*, and *japonica rosea alba* being noteworthy. There is a lot of wall space at Offington, and scarcely an inch is vacant.

irretrievably in a few days, or if it be of a long-season plant, then during the summer. A late cold spring, such as that experienced this year, offers great obstacles to the securing of seed from many things of ordinary summer growth. They need a long summer to enable them to perfect their seed crop, and a short summer renders all the labour involved abortive. The excessive wet of last summer did enormous mischief in connection with seed production. Not only were seed crops short, but a quantity of seed has this spring proved to be very infertile in consequence, so that it takes two or three years to recover from the effects of one bad season. Almost an amusing product of seed-saving was found after carefully harvesting the produce of a specially good sort of Cabbage on one plant only to find this year that every resultant plant from a sowing is of a hybrid sprout kind. That is the product doubtless of a cloud of pollen from a breadth of blooming Brussels Sprouts, though considerably removed from the Cabbages.—A. D.

FRUIT GARDEN.

BORDER FOR APRICOTS.

GIVEN a naturally cold, clayey soil, rock under, but where abundance of heavy loam can be obtained, kindly advise me how to make an Apricot bed at the foot of a wall facing due west in a very warm and sheltered position. Also, on higher and more exposed ground, where the soil is heavy loam which cakes as hard as a brick in hot sun, how can this be improved for Strawberries?—H. C. N., *Banbury*.

* * * The situation, due west, warm, and sheltered, in a fair average English county is all that can be desired for the Apricot; indeed, it is questionable if this is not the best of all aspects for this capricious tree. So far good; but the soil being cold and clayey with rock beneath the natural root run is less satisfactory, as the Apricot likes a deep, mellow compost, a little lighter than that usually recommended for Pears, Plums, and Peaches. Sustaining loams rather inclining to be sandy and of a calcareous nature, which grow fine Oaks and other forest trees, are most suitable, as water passes freely, but not too quickly through them, and they do not readily dry out in hot summers. Having an abundance of heavy loam at command, "H. C. N." should cart a sufficient quantity to form the staple of his two borders; this will require some correctives. To every ten loads he may add two of old lime rubble, two of dry scrapings and sidings from the roads in the district, if limestone so much the better, as all stone fruits must have plenty of old lime, and if he be so minded he may burn with wood a few cubic yards of the baking loam to complete the compost. As many loams should not be handled when wet, the staple should be cut when the weather is fine, and when the other materials have been evenly added the whole mass must be turned over, carefully mixed, and left lying in a sharp ridge ready for use. If the heavy loam is calcareous and fairly good, animal manure must be avoided, or being poor, half a hundredweight of crushed bones to each load of loam may be added with lasting advantage.

PREPARATIONS FOR THE BORDERS.—Assuming that the trees are to be planted about the end of October, the excavations may be made at leisure, but in time for the concrete if needed to become dry and hard before the drainage is placed over it. From 2 feet to 2½ feet of compost is ample in warm gardens, and as this must rest upon 6 inches of drainage, the excavation the whole length of the borders must be 3 feet in depth and 6 feet to 12 feet in width

according to the height of the wall. The whole of this, however, unless water rises, need not be concreted, neither should the whole width be taken out and made at once. It is better to take out a breadth of 6 feet at first, and extend when the roots require more room and a moiety of fresh compost will be acceptable. The bottom of the border should slope 1 in 12 from the wall, and a good tile drain running longitudinally along the front will be necessary, not only to carry off water and prevent the bottom of the excavation from becoming a death-trap, but also, when artificial watering is resorted to, to show when the water has passed through the whole of the compost. If the rock of which "H. C. N." speaks is fairly level on the face and about the right depth, the introduction of concrete may be avoided, as a great deal of unnecessary expense is often incurred in doing more harm than good in this direction, especially where there is no danger of crude water rising out of the subsoil. The drainage may consist of broken bricks, broken stone, especially sandstone, clinkers, or rough gravel, the roughest at the bottom, with a layer of fine materials on the surface. Upon this, if at hand, thin sods of turf may be laid Grass side downwards, or this being scarce, a thin coating of fine old lime rubble may be used a substitute.

The compost should be wheeled in when quite dry, levelled, and made evenly firm at least a fortnight before the time arrives for planting; then, by way of allowing for settling, the surface of the new compost should be quite 9 inches higher than the ultimate level of the wall path and border. Three feet of compost, in fact, over the drainage in warm situations is not too much, and 2 feet 6 inches where the bottom is wet and cold.

DISTANCE TO PLANT.—The Apricot being so liable to perish from sunstroke, the trees should be placed closer together than Peaches, but not so close as Pears on the Quince stock. Indeed, there are two modes of planting, the distance being regulated by the height of the wall and the size of well-managed trees found growing in the locality. In unfavourable districts, the wall being 12 feet in height, they might be placed 12 feet to 15 feet apart, with one or more cordons between to give a little fruit the first few years, when the latter might be removed to form a complete wall of cordons, a mode of training which answers extremely well. Upon true Apricot soils the permanent trees might be 18 feet apart with fan-trained supernumeraries equi-distant, or a greater number of cordons for future removal or filling up gaps in cases of sunstroke. Upon very lofty walls, dwarfs 18 feet apart will allow plenty of room for standards to serve as temporary riders; but these are expensive, in due course have to be cut away, and from an economical point of view are not so satisfactory as good cordons which give variety, whilst gaps in case of death can be filled up in a single year by the extension training of their nearest neighbours. When the trees are planted they should be well watered home and mulched with short manure, and, provided the modern method of lifting early, before the leaves are off, is practised, they should be moistened with the syringe in dry weather.

TRAINING AND PRUNING.—The Apricot, unlike the Peach, is what may be termed a dual bearer, that is to say, it fruits upon the shoots of the preceding year as well as upon old spurs. To allow room for the young wood as well as constantly increasing spurs, the framework should be composed of a few well-balanced branches a good distance apart. From these

as they radiate others may be laid in full length to complete the number of ribs. All intermediate spaces can then be filled in with young shoots, precisely as we lay in the current growths of Peaches, but not so close together. As these young shoots, unless thoroughly ripe, do not flower freely, they require close training and full exposure to the sun, but bearing in mind that spurs give the bulk of the fruit, all intermediate shoots which in the Peach we should rub off, in this case must be pinched to three or four leaves. By constant pinching and repinching, fruit-bearing spurs can be formed in one year, and waste of force being prevented, trees upon the extension principle, which is the best, soon cover a very large space of wall. It is, of course, necessary to run the knife over the trees in winter, but a good manipulator, who stops closely, trains thinly, and allows all his young growths to go, finds winter-pruning almost a sinecure. One might write many pages upon this popular, but tantalising fruit, but having exhausted my space I may conclude by saying the Apricot, like the Peach, should never feel the want of water, not even when dormant, for so early and excitable is the tree that drought during the dead months is sure to result in the dropping of the buds. Varieties, fortunately, are not very numerous, the best for flavour being Moorpark, the Peach, the Royal, Hemskirk, and the delicious, but small-fruited Kaisha. Hardier varieties for the kitchen and preserving are Large Early, Large Red Roman, Shipley's or Blenheim, Frogmore Early, and the Orange.—W. C.

FRUIT TREES ON SUNK FENCES.

It is a rare occurrence to find sunk fences utilised for the purpose of fruit culture. Why this is I fail to see, since the advantages that might be obtained by the judicious utilisation of such places are twofold. In the first place, the walls, which although invisible from the distance, as it were, and from one side, are of necessity exposed on the other, and too frequently they are in a very ruinous state, thus forming an unsightly object. If these walls were judiciously covered with fruit trees they would at once be converted into not only a pleasing object, but a profitable one. Secondly, the walls being sunk, the trees have from all sides good protection from the winds, and yet at the same time are freely exposed to the sun's rays, so essential to the proper ripening of the fruit and wood of the tree. In fact, the benefits to be derived from this method of culture are manifest, and those who have wall space like this at their command cannot do better than utilise it. Of course, it is needless to mention that walls facing north would be useless for Apple or Pear culture; but even these may be used for Morello Cherries, Currants, or Gooseberries. On sunk walls facing south, however, I have seen excellent fruit grown. At Howick Hall, Northumberland, there is a sunk wall some 150 yards in length devoted to fruit culture. Several varieties of Apples and Pears are grown, and, generally speaking, an excellent crop of fruit of the best quality is gathered therefrom every year. The principal varieties of Apples grown were Golden Harvey, Ribston Pippin, Yellow Ingestrie, and Loddington. The fruit from these was, as a rule, of much better quality and higher colour than that from trees grown in the open on the pyramid or bush system. The roots, however, were not, as some may suppose, in the bottom of the ditch, but on the top of the wall, the trees being trained downwards. To some it may appear an unpracticable method, but judging from the trees to which I refer, and of which I had the management for a considerable time, I have no hesitation in recommending the method as being not only practicable, but highly valuable, especially for northern and other localities where during cold seasons Apple culture is generally a failure. By planting the trees thus on the top of the wall the roots are near the surface, and as a

consequence comparatively dry and warm, which, as is generally well known, is conducive to successful fruit culture. In dry seasons, however, strict attention must be paid to watering, for if allowed to suffer from drought the crop will be seriously injured. A good mulching with heavy manure will, however, prevent any serious damage being done and will also assist the trees. By this means and thus utilising the space which now too frequently in the majority of places is allowed to remain idle, excellent crops of fruit may be had. In these days of keen competition all available space should be utilised for fruit culture.

C. COLLINS.

WORK IN VINERIES.

Early houses.—The Vines in these now clear of fruit must be copiously syringed rather late on fine evenings, a little soft soap and sulphur being added to the water where spider has been troublesome. Inside borders which have been allowed to get dry, hard, and possibly cracked on the surface, without loss of time must be restored to a thoroughly moist growing condition; but before water is applied they may be slightly pricked over with a steel fork to ensure its even distribution. If the Vines are young and vigorous and laterals are pushing freely, pure water may be quite good enough, but with a long period of summer weather yet before us a nice covering of fresh stable litter should be placed over the surface to prevent evaporation. Older Vines which make weaker wood and but few laterals will require more generous treatment, the great tendency in their case being premature ripening of wood and foliage, followed by the bursting of the buds in September. The syringe, of course, will play an important part; the borders after being loosened will take a good top dressing of rotten manure, or diluted liquid may be used pretty freely. If the covering still remains intact upon outside borders it may now be reduced, but several inches must be left to serve as a heavy mulching. This in due course will be cleared away to make room for the annual top-dressing in September, but meantime, water through the hose, if not from the clouds, must be passed liberally over it. Ventilation on a very liberal scale, both by day and night, will now be necessary, and the fine June weather continuing, a few of the top lights may be removed with advantage.

Succession houses containing ripe Grapes must be kept cool and airy, and possibly slightly shaded for a few hours on bright days where black varieties are losing colour. White ones, on the other hand, cannot have too much light, provided they do not burn; hence the advantage of keeping the two colours separate. An airy atmosphere is considered best for Grapes, especially in the autumn, but just now the borders and floors must be liberally damped and the walls frequently syringed. A change to damp, dull or wet weather, when top and bottom air cannot be abundantly admitted, as a matter of course, will necessitate much drier treatment and the maintenance of a very steady temperature, otherwise Madresfield Court Muscat and Foster's Seedling may take to cracking. Much, however, depends upon the way in which the borders have been watered, as I have found Madresfield quite free from this defect where watering is not discontinued too early. Another excellent preventive of cracking is planting fractious varieties in raised inside borders through which water passes freely, and in which healthy roots have the benefit of a warm growing temperature.

MUSCATS,

now ripe or approaching that stage, must have the benefit of plenty of light by drawing or tying the leaves and laterals a little aside, but not to an extent that will allow the full force of the sun to strike upon the shoulders. As this kind of Grapes is not subject to cracking and all the roots will be inside the house, the borders should be made fairly moist and well covered with clean litter. Bright sun-heat should now suffice, but in the event of a change to dull or wet weather, a little steady fire-heat will facilitate keeping fresh warm air in motion. Houses containing the general stock of Muscat;

intended for autumn and winter use will now stand full 70° at night, 80° to 85° by day, and 90° after closing with sun-heat and moisture. The general thinning having been brought to a close, the scissors may be passed over the bunches again for the removal of overlooked stoneless berries, or giving more relief where there is a possibility of binding. One is often tempted to leave a stoneless berry in a weak part of the bunch, but if possible it should be removed, as Muscats have a surprising power of filling up gaps when the faulty berries are taken away early. Plenty of good warm diluted liquid, inside and out, and an occasional dusting with Thomson's Vine manure, guano, wood ashes, or soot will now tell, as the Muscat in health is a gross feeder. As the stoning process is at hand, a sharp eye must be kept on the berries, just at this stage so subject to scalding. If the weather continues steady and favourable to giving plenty of air, scalding may not put in an appearance, but otherwise a preventive will be found in keeping the house warm with air at night and abundantly ventilated in the daytime. If I wished to produce scalded berries, I would keep the house close and full of moisture through the early part of the night; the temperature should descend to the condensing point towards morning. I would allow the rising sun to rush it to a high temperature before giving air, then produce a chill by opening the top and bottom ventilators simultaneously. If this treatment results in an abundance of scalded berries, converse conditions, *i.e.*, steady warm greenhouse treatment for a fortnight, will prevent it.

Late houses containing the prevailing winter varieties which have been extra well thinned to fit them for hanging through the damp damaging months of November and December will now derive great benefit from Muscat treatment, especially during a continuance of this fine tropical weather. Also, like the Muscats, they must be kept extra warm at night and very freely ventilated through the day until the berries have finished stoning. Lady Downe's are most troublesome, but by keeping the berries dry and warm towards morning and allowing the day temperature to rise gradually, that is by very early and steadily increasing ventilation, this disease or disorder may be reduced to a mild and harmless form. Grapes always scald most under sudden alternations of temperature when the weather is unsettled and showery, and rarely lose a berry when the external temperature is steady, tropical, and equal to that of the interior of the abundantly ventilated house. To ensure the proper ripening of these invaluable varieties by the end of September, a night temperature ranging from 68° to 70° and 80° to 85° by day should be maintained, and, provided solar heat be insufficient, the pipes should be nicely warmed, especially through the night, to make up the deficiency. A handful of fire, comparatively speaking, produces the desired effect at this time of year, and whilst preventing condensation of moisture and increasing the size of the berries it often ensures that perfect colour and maturity which treble the amount will not give later in the autumn.

Span-roofed pits in which pot Vines intended for forcing are now browning and ripening fast will require increased ventilation and less moisture. Good feeding must still be supplied, and daily syringing to keep down spider is imperative, as good shows cannot be expected from Vines whose leaves are destroyed before the buds are thoroughly matured. As the ripening process proceeds incessant watering may be rendered unnecessary by burying the pots in some non-conducting material of a mild stimulating nature.

CUCUMBERS.

The weather throughout June having been so bright and warm, Cucumbers in all good houses have made rapid progress without the aid of fire-heat; consequently spider is, or should be at a discount. Under such conditions their management has been extremely simple, and, provided the plants are copiously fed with warm diluted liquid, well syringed, and moderately cropped, they will con-

tinue fruitful throughout the remainder of the summer. In the manipulation of the young growths it is very important that the points be pinched out at the first joint the moment the fruit becomes visible, as by this means waste of sap and bleeding are prevented. A few of the old leaves and some of the exhausted vines also may be taken out at each dressing, but on no account must this defoliating be carried to excess, as anything approaching a check even in the middle of summer is detrimental to lasting and steady progress. If this mode of treatment does not keep spider and mildew in check, sulphur water slightly coloured with soft soap must be used for a few evenings in succession, not only beneath the foliage, but also from the outside where the lights are movable. Indeed, under any circumstances, no matter how clean and healthy the plants may be, a thorough syringing from the outside at least twice a week is a very important operation. Pure soft water at a temperature of 85° to 90° should be used, and fire-heat being so very mild, the operation should be performed pretty early in the afternoon, otherwise the house will be found too cold at nightfall, when mildew may put in an appearance. In the management of the bed, the main point is the maintenance of a steady bottom heat of 75° to 80°, and active surface roots being most valuable, the top-dressing of fresh, rough turf, lime rubble, and a dash of bone dust should be given little and often. The Cucumber has a great partiality for rough lime rubble, as it absorbs liquid, and being antagonistic to worms it answers much better than solid manure or decaying leaf mould, which forces a very gross growth of vine and foliage for a time, but eventually renders the compost sour and pasty.

Frames.—Although I have assumed that red spider and other enemies have been checked, if not destroyed, by warm genial weather, it is unreasonable to suppose that a great number of the best arranged houses would not be the better for a general cleansing preparatory to a fresh start with plants free from ailments and insects; indeed, forcing houses of all kinds to which bottom-heat pipes are attached should have a thorough turn out once or twice a year, and the present time, I think, is the best for dealing death to the enemies of the Cucumber. Plants in frames so far have done well, but in order to keep several strings to the bow, young stock from seeds or cuttings should be provided for putting out in pits for succession. If put out before the end of July they will be in full bearing by September, when the transition from Melons or summer Cucumbers to winter plants may reduce or entirely cut off the supply from houses. Plants now in full bearing may be flooded with tepid liquid twice a week, well syringed overhead on other days, and shut up very early to induce quick growth of vine and fruit. If spider or mildew attacks the plants, the outside linings must be looked to and a few of the old leaves cut out preparatory to the application of sulphur or sulphur water, the best and safest remedy, always provided the lights are tilted very early on bright mornings and lightly shaded during the day. When the remedy has destroyed the parasites a preventive must be sought in thinning out old vines, in pegging down those retained, and top-dressing with light, rich, turfy loam and rough pieces of lime rubble. By adopting this plan, or cutting over a light or two at a time, the oldest plants can be cleansed and resuscitated. At the same time we must not overlook the fact that seeds are cheap, young plants are quickly raised and grown to the fruiting stage; that their produce is fine, and attendants can move from them without carrying their enemies into other compartments. Fly, as a matter of course, can be destroyed by very light fumes of tobacco smoke from Bloxham's puffer, always when the frames are cool and the leaves quite dry, but I do not recommend smoking unless early syringing, ventilating, and shading receive attention the following day. It is not from the application of sulphur or tobacco smoke in mild forms that the plants suffer, but from the first five minutes' neglect when the sun strikes the closed lights the following morning.

MELONS.

Although very few consumers care for late Melons, the scarcity of choice Apples, Pears, late Plums, and in many places Peaches will justify an attempt this year to keep up a supply well into November. Plants put out in July will ripen their fruit in September, and seeds sown before the end of that month under good ordinary management should carry the supply through October. After this date nights being longer and colder, calculations as to the time of ripening, the quantity and quality of the fruit, are simply out of the question. But this uncertainty should not prevent those who have light, efficiently heated pits at command from giving suitable varieties a trial. Of two evils, it is better to sow rather early than too late, as October Melons come on slowly, and, provided they are sound and of medium size, they can be kept for some time in a warm fruit room or dry vinery. Scarlet-fleshed varieties are considered harder than the green or white, but they are not so good, neither are they better keepers than those in which the Egyptian blood predominates. The Persian Melons or hybrids now so plentiful are always melting and often delicious in hot, dry summers, but then they frequently crack when on the point of ripening, and having such tender skins they soon perish. These, then, should be avoided, and although I do not wish to disparage the hundred and one sorts now in cultivation, I think I may venture to say the old Egyptian, Bromham Hall, or the true Victory of Bath are the best types for use in October and November. Light and an abundance of hot-water force, of course, are imperative, but large masses of compost which cannot be dried and warmed quickly are objectionable; hence the wisdom of using pots of medium size or planting in very narrow pits formed over hot-air chambers. Pots, however, are to be preferred, as they can be furnished with strong plants 2 feet in height by the time their autumn quarters are ready for them; they can be plunged in a sharp bottom-heat from leaves or tan, which can be turned over and renovated at pleasure, the most critical periods being the setting and ripening of the fruit. An old grower has said all Melons are good when properly cultivated; but, alas! a great number of us yet have much to learn, and I question if our greatest stumbling-block is not too high feeding and allowing the bottom-heat to fall too low at the finish.

WORK AMONGST HARDY FRUITS.

The weather at the present time is hot and dry; we have a new moon, the barometer is rising, and fruit trees generally look as though a steady rain would do them an immense amount of good. Strawberries are rushing forward at express speed, and mildew now attacking the Paxtons and Presidents; unless we have thunder rain, and that quickly, it will very soon put an end to their season. Those who gave their beds a substantial covering of fresh stable manure before the plants came into flower may keep their late beds going until rain comes, but wherever this dressing has been neglected, especially on light or shallow land, the hose must now be laid on with a will. It is not wise to water overhead on bright, hot days, neither is it necessary, as a handy boy can soak the roots without wetting the leaves and fruit, and if so minded he can give the overhead shower when the sun has left the bed. Pursuing my remarks upon mulching and watering, I would suggest pressing all sorts of non-conducting or feeding materials into use, that is over the roots of trees which have been root-pruned, transplanted, or are carrying good crops of fruit. Old-established trees as yet do not show signs of suffering, but their roots, especially on light land, are working deeper and deeper into the subsoil, and by and by, unless they can be checked in their descent by light mulching and surface watering, they will find a cold stratum which will force a late growth when it is not wanted. This fine weather on the whole, no doubt, is a godsend, as it is changing the character of the young growths, and, as so often happens in this country, its continuance a little longer will lay the foundation of a heavy crop, if not a glut in the coming year.

APRICOTS, the first to feel the want of water, will now derive the greatest benefit from frequent washings with the hose or engine, and the fruit now swelling freely will well repay an occasional deluge over the roots. All breastwood must be kept closely stopped, young shoots nailed or tied in, and where set in clusters fruit that is deformed or likely to bind may be removed for tarts. Grub here, as upon other trees, has been unusually plentiful, but having in many gardens a great number of fruitless trees to work upon, its winter quarters in the rough bark and old walls should be rendered untenable by the application of our home-made insecticide—strong soapsuds. The chemicals may slightly discolour the foliage, but where there is little or no fruit to mark, the opportunity should not be lost.

PEACHES still remain perfectly clean, free from blistered leaves, and the young shoots since they were nailed in improve every day. All our trees have been laid in rather thinner than usual, and with the exception of a few gross shoots which have been cut back to a good lateral, they are allowed to extend to their utmost limit. The fruit now beginning to show is more plentiful than was



Carpenteria californica in the open border at Offington.

anticipated, and in due course when properly stoned shoots which will not be wanted will be shortened back to prevent over-crowding, as well as to throw size into the fruit. Trees carrying full crops of fruit from this time forward (June 29) will receive regular supplies of tepid liquid, but others less profitable will get nothing stronger than pure water, and of that just sufficient to keep the surface roots at home, to fill up the buds, and prevent the ravages of spider.

PEARS—a light crop—seem inclined to carry all the fruit which passed the flowering stage, and are looking fresh and healthy. Although at one period very late, a brilliant June has redeemed time apparently lost; consequently what we lose in quantity we may gain in quality. Large trees on free stocks which have filled their allotted space must be kept closely pinched, but young ones having space to fill must be allowed to extend. A few of the strongest shoots, it is just possible, may require pinching to maintain the proper balance, but beyond this check all should be allowed to go, and the autumn proving warm, they will flower freely next year. The restrictive pruner may feel disposed to dispute this fact; but facts are stubborn

things which sometimes surprise those who grow on the extension system, for only last year—by no means a good one—some of my grafted wall trees made on an average shoots 4 feet in length, which flowered profusely this spring. The fruit did not set, it is true, but the flowers came and passed away, as did others upon old-established trees.

MORELLOS on north walls may now be pruned, well hosed, and netted. Pegging or nailing in is not a pressing operation, and where a free, wild growth is not objectionable, I incline to the belief that the fruit is finest and keeps best where the summer growths are left alone. W. C.

STRAWBERRIES.

VERY interesting and useful would be some clearly defined data obtained in diverse localities as to the actual rate of ripening found in certain established varieties of Strawberries. It is too late now to give any accurate return for this year, but it would be of the greatest use could some half dozen or more gardeners, in various parts of the kingdom, lay down in some exposed portion of their gardens rows of early runners of, say, a dozen or less of the best kinds, and then next year tabulate the exact dates on which what might be called a dish of twenty ripe fruits on each variety was ready for gathering. Not only would such data prove useful in localities, but they would materially assist in ascertaining how far varieties differed in various parts of the country. To give data from diverse beds or plantations of Strawberries in different parts of the garden, and of diverse ages, would be misleading, because the conditions in each case would not be identical. Those gardeners who would undertake a matter of this kind could, perhaps, go a little further, and give a return of the produce in weight of fruit from the respective rows of plants, as by so doing some fair estimate would be obtained as to the relative cropping merits of each variety. We should also thus learn something as to the behaviour of this or that variety in different soils and districts. Our progress in relation to Strawberries has been slow, although during the past two or three years there have been added in Noble and Waterloo two kinds which seem to possess high-class merits. Strawberry growers, have, either from necessity or from prejudice, proved to be very conservative in relation to varieties, and very few new sorts have been popularly adopted. Such varieties as Keen's Seedling, Vicomtesse Héricart de Thury, President, Sir Joseph Paxton, Sir Charles Napier, and Elton Pine have been with us for many years, the first and last, indeed, for almost half a century, and yet the half-dozen sorts above given stand in the very front rank of cultivated Strawberries. The next half-dozen of old popular sorts are, perhaps, British Queen, Dr. Hogg, La Grosse Sucrée, Jas. Veitch, Eleanor, and Frogmore Late Pine; but few of these, after all, are extensively grown as compared with the first-named sorts. The best known novelties are Noble, Waterloo, Pauline, and Captain, but the two latter never will be in the front rank, and the position of the two former has to be clearly defined. No doubt the present season will materially help to that end, as, universally, Strawberries are doing so well, and both Noble and Waterloo are widely grown. With regard to colour, both have their points, for high colour even apart from high flavour finds value in the market. The rich scarlet hue of Noble should be greatly in its favour for market work, while last year's experience at Chiswick showed that the very deep crimson hue of Waterloo found many admirers who were willing to pay a higher price for it. The Waterloo colour, however, is rather too dense and dead for general favour, I think, as almost invariably preference has been given to the rich bright red hue of President and Sir Joseph Paxton, the latter not a first-class variety, over either deeper or paler coloured sorts. The market growers are sharp to find out defects in Strawberries, and although there can be no doubt that it is very difficult to get them to take to the culture of new kinds, yet, when once they do so, every weak quality in a Strawberry, as every strong one, from their point of view, is soon ascertained. There is, for

instance, the element of average size of crop; for, while some kinds may be remarkably productive on the whole, yet they may produce only very few fine fruits. Now, whilst a basket may hold the same weight of fruit that another does, yet the price of the larger sample will always be better than that of the smaller sample. It will, therefore, not do, that any kind, however fine its earlier fruits may be, should not carry out size till the third and fourth pickings; in fact, the longer the fruit remains large the more profitable the crop. Thinning of the fruit may be performed readily enough on pot plants, but cannot be done on a crop acres in extent. The most serviceable sorts for market use, therefore, are kinds which produce moderate crops of fine even-sized, richly-coloured fruits, rather than a large lot of smallish fruits. Kinds which are hardy enough to be very early and very late are also valuable. There is a wealth of fruit almost invariably during the height of the Strawberry season, but any good sort which will precede the flush of

be of a stiff, heavy, and consequently of a moisture-retentive nature, once a week will suffice. Plants of Vicomtesse Héricart de Thury, La Grosse Sucrée, and Keen's Seedling, which had been forced in March and properly hardened off before being transplanted to a deeply trenched and liberally manured piece of ground in April, and treated as indicated, cannot fail, if the weather be favourable to the fruit ripening, to yield good gatherings of fruit during the last two weeks in August and throughout September.—H. W. WARD.

TREES AND SHRUBS.

THE ANTARCTIC BEECH.

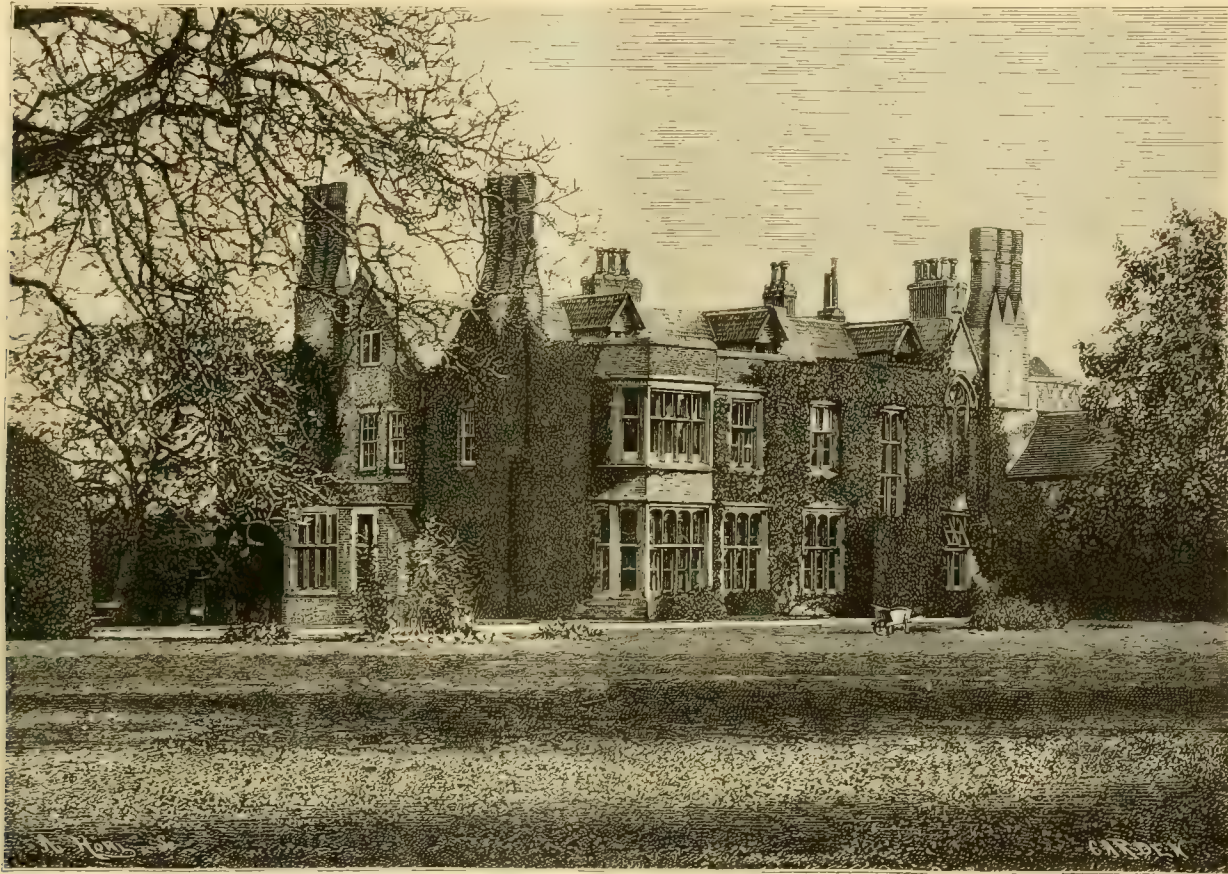
(*FAGUS ANTARCTICA*.)

Two years ago Mr. Sandbach pointed out to me with pride a fine healthy specimen of the Antarctic Beech in his rich mountain pinetum

some of our richer collections of such, will deny; indeed, the specimens to be found of this tree of any size or age may be counted on the fingers of both hands.

Introduced to this country in 1830, one would naturally have thought that so distinct and interesting an evergreen tree would have found greater favour with planters, but the fact of the tree not being well known outside the walls of our botanic gardens accounts for its present scarcity. That it is perfectly hardy is beyond question, for the fine tree at Hafodunos, hundreds of feet above the level of the sea, clearly confirms the statement, and this tree, too, is not growing in a sheltered valley, but away amongst the grandest of the Welsh hills.

Being a native of Terra del Fuego and the Straits of Magellan, or rather the banks of the Straits, may have had something to do in preju-



Offington House, Sussex.

the crop by only a week, or give good fruit a week or two later, would be heartily welcomed. If Noble should fulfil this it will soon be largely grown. Eleanor and Elton Pine are good late sorts, but still they are hardly popular market varieties.—A. D., in *Field*.

Forced Strawberry plants.—Plantations of forced Strawberry plants which have been made within the last few months, and which did not, as they ought to have done, have a good mulching of short manure laid on between the rows of plants, should be attended to in this direction forthwith. This application will prevent the soil about the roots of the plants being dried up by the action of the sun, and will also keep the soil cool and moist by preventing evaporation taking place after each succeeding watering, which, in the absence of rain, should, if the soil is of a light open nature, be two or three times a week. If the soil, however, should

at Hafodunos, in North Wales, and last week again I was shown one of the largest trees of this kind that is to be found in the south of England at least; indeed, it is a question whether anywhere in Britain a finer or more healthy specimen of this Kentish tree could be pointed out. It is almost a wonder that the first discoverer of this evergreen tree did not name it a Birch rather than a Beech, for the foliage certainly resembles that of the former in a very marked manner, although it is somewhat smaller. The name of *F. betuloides* has been recommended, and certainly it would be quite appropriate, if not more so than that commonly accepted.

That the Antarctic Beech is comparatively little known few persons, who are at all interested in hardy trees and who have visited

dicing persons against planting the Antarctic Beech, suspecting it of being of too tender a constitution for the climate of Britain generally. This is, however, fortunately, a fallacy, that in the future should be carefully guarded against.

In this country *Fagus antarctica* is a tree, or rather big-growing shrub, of pleasing outline, with an abundance of small evergreen leaves, not unlike those of the common Birch. Usually the stem is ill-proportioned to the height of the tree, it being thick at the base and with a quick taper throughout. That it is a tree of great interest and one totally distinct from any other in cultivation in this country, and one that should receive a greater amount of attention than it does at present, everyone who has seen even a small specimen will readily admit. A limestone district would seem to suit the

wants of the Antarctic Beech in a peculiar manner, but I have also seen it doing admirably where broken up shaly rock was present more or less in the soil. In this country it seems to delight in a pure stirring air, close confinement caused by encroaching trees and shrubs being detrimental to its growth and healthy development.

A. D. WEBSTER.

TREES AND SHRUBS IN FLOWER.

THE MOCK ORANGES are the principal shrubs in flower during the latter days of leafy June, and last week the splendid specimens of them in the Royal Gardens, Kew, were one mass of white flowers, the presence of which can be quickly detected by the rich, aromatic and almost too powerful perfume. The May-flowering *Philadelphus coronarius* is the commonest; and it must be a poor shrubby or garden that is without this free-blooming and vigorous shrub. There are several kinds of *Philadelphus*, but it needs no practised eye to see that there is very little difference between them; but no one should be without a few of the North American species, as *Gordonianus*, *inodorus* and *grandiflorus*, which are strong growing kinds, and make thick bushes, from 7 feet to 10 feet or 12 feet high, densely clothed with foliage. The objection to the common *coronarius* is the strong fragrance of the flowers, but in these American types the blossoms are almost scentless, and thus may be used freely for cutting. *P. Gordonianus* grows quite 10 feet high, and forms a succession, as it does not bloom usually until July; it is a North-west American species, and introduced early in the present century. As its name suggests, a large flowering kind is *grandiflorus*, which has handsome sweet-scented white flowers that give life to the shrubby and garden in the month of June; they cluster thickly on the slender twiggy branches, and are individually quite 2 inches across. A variety of this called *laxus* is of dwarfer growth, and its white flowers are borne singly, or in twos or threes. In many gardens where a variety of shrubs is desired and room is limited, only one kind of Mock Orange can have a place, and the one selected should be *grandiflorus*, as it is not only beautiful in itself, but blooms when flowering trees and shrubs are scarce. *P. coronarius* has a few varieties; one (*P. c. primulaefolius*) has double flowers, but it is not of great worth, and another is desirable for the bright golden tint of its leafage in early summer. A dwarf-growing New Mexico species is *P. microphyllus*. It has erect slender branches, which are studded in summer with white flowers, borne singly, or in threes, and small leaves. The *Philadelphus* is very seldom allowed sufficient space to spread out its twiggy branches, laden with lovely flowers, and no shrub or tree, if cramped, can show its true beauty.

LIGUSTRUM OVALIFOLIUM.—A small group of this was in full flower the other day at Kew, the slender stems crowded with small pure white flowers. A bed of it on the Grass turf would make a pretty and distinct feature.

MAGNOLIA GLAUCA is a small, but pretty tree where it can be made to do well. It grows usually about 15 feet high and is evergreen, though occasionally the pale green leaves get injured in severe winters. A specimen is in bloom now on the left-hand side of the main walk in the Royal Gardens, Kew. The flowers are small, not unlike those of our common Water Lily in shape, ivory white, and deliciously scented.

CISTUS LAURIFOLIUS.—One of the most luxuriant masses of this charming shrub we have seen this season is near the Fern houses at Kew. There is a bed of it on the Grass turf, and the dense mass of deep green foliage is studded with large flowers of exquisite purity, each of the frail petals blotched at the base with crimson. This is the hardiest of the Rock Roses, and may be grown with success in Scotland. The best way is to have a bed of it on the Grass, on sunny banks, or alongside carriage drives, as during the summer the handsome flowers always invite attention.

HONEYSUCKLES are now amongst the most beau-

tiful climbers in bloom, their exceeding grace, elegance and fragrant flowers having a special charm. A mass of our common *Lonicera* rambling over a pillar, post, or wall should be a feature in every good garden; but we have other kinds of Honeysuckle besides our own denizen of the woods that should be grown. The Dutch and late Dutch varieties of our native Woodbine, *L. Periclymenum*, both carry a profusion of fragrant flowers, and the native *L. Caprifolium* is also desirable. The Japanese *L. flexuosa* is a lovely climber, and may be seen at Kew in full bloom on one of the walls. *L. japonica* and *L. sempervirens* should be grown, though the last of the two is generally confined to the greenhouse. In the southern counties, however, it may be grown with success against a warm wall, and its clusters of orange-scarlet flowers are always welcome. Minor is a very free blooming variety. These are a few of the best climbing kinds of *Lonicera*.

AMERICAN MAGNOLIAS.

IN the exhaustive article on Asiatic Magnolias taken from that valuable Transatlantic journal, *Garden and Forest*, the native American species are almost passed over, or, at all events, only alluded to as a stock on which to graft some of the Chinese Magnolias, while in this country some of them rank high as ornamental trees, not only for the beauty of their blossoms, but also for their large and handsome foliage.

THE UMBRELLA TREE (*M. UMBRELLA* OR *TRI-PETALA*).

This is, perhaps, the best of the deciduous American Magnolias. It is a fine, bold-growing species, which forms a somewhat open tree, with large obovate leaves from 1 foot to 2 feet in length. The arrangement of the foliage is also very striking, as the finest leaves are usually borne in a ray-like whorl towards the points of the shoots, and when the large white blossoms are produced the manner in which the leaves are disposed serves to show off the flowers to the greatest advantage. Like all very large foliated trees, this needs to be planted where sheltered from the full force of the wind, but in this respect it is not so liable to injury as another allied kind, viz.,

M. MACROPHYLLA,

which produces the largest leaves of the whole genus; indeed those borne on stout vigorous shoots are sometimes as much as a yard in length. It is one of the most particular in its requirements of all the Magnolias, and is seldom seen in a flourishing state. The conditions most favourable to it are a fairly moist soil of a deep loamy nature, and a position sheltered from high winds. The flowers of this are white stained with purple at the base, and open somewhat later than those of *M. umbrellata*.

M. FRAZERI, OR *AURICULATA*,

another of the large-leaved Magnolias, is a loose-growing tree, with the distinct auriculate foliage arranged somewhat as in *M. umbrellata*, but disposed in such a manner that the flowers are not so conspicuous as in that species. They are of a loose, open nature, whitish in colour and very powerfully scented. The leaves on free-growing shoots are over 1 foot in length and proportionately broad. The next to be mentioned is

THE CUCUMBER TREE (*M. ACUMINATA*),

which derives its popular name from the young fruits bearing some resemblance to a small Cucumber. This species generally pushes up a good leading shoot, from whence the spreading branches diverge in a somewhat regular manner. The oblong-shaped leaves of this are from 6 inches to 9 inches long, while the blossoms are less conspicuous than those of many of the others. This is a handsome tree, and less exacting in its requirements than the other Magnolias, which may be seen by the fine specimens of it to be met with in different places throughout the country.

M. CORDATA

is by some considered a variety of the last, but it differs therefrom in many particulars. It does not

attain the dimensions of *M. acuminata*; the habit, too, is more spreading, while the leaves are heart-shaped, and the flowers, though not showy, are very interesting, being of a yellowish tint, sometimes striped with red, like a Tulip. In size the blooms are the smallest of all, except the Swamp Magnolia.

M. GLAUCA,

which for certain purposes, such as for planting on lawns of limited extent, is a very desirable tree, or rather shrub. When in a thriving condition, the oblong-shaped leaves are of a peculiar bluish green on the upper surface and silvery beneath, but in this last respect individuals vary, as they do also in the length of time the leaves are retained, for though some will keep the greater part of their leaves nearly throughout the winter, others will lose most of theirs in the autumn. As a rule, the drier the position the more quickly do the leaves fall. The flowers of this are of a creamy white tint, but become of a deeper hue before they drop, and the plant being of low stature their delicious fragrance can be fully appreciated. Where the soil is moist a succession of flowers is often kept up from midsummer till the autumn frosts set in. This Magnolia may be grown in soil that is too moist for many other shrubs.

The last to be referred to of the American Magnolias is the evergreen *M. grandiflora*, which is so well known and regarding which so much has been written, that little remains to be said.

M. CAMPBELLII.

The only recorded instance of this Himalayan variety having bloomed in this country was in 1884 in the gardens of the late Mr. W. Crawford, Lakelands, near Cork; but "T. B." in *THE GARDEN*, June 11, 1887, claims to have flowered it three years in succession. However, as no record of it was published at the time and no particulars given, the Lakelands plant is not likely to be dethroned from the position it has hitherto held, viz., that of being the first to flower in Europe. T.

Berberidopsis corallina.—This evergreen climber is hardy in the southern parts of England when given the protection of a wall, but even where this is not the case it is particularly valuable as a climbing plant for the cool greenhouse, as protected in this way it makes more rapid progress than where fully exposed during the winter. It usually flowers very freely under glass, and the plant looks well when trained up a rafter or on the roof. The individual blooms are in shape not unlike those of a large-flowered *Barberry* of the *dulcis* type, but the colour is a rich bright crimson. This *Berberidopsis* is a native of Chili, and though it has been introduced over a quarter of a century is still uncommon.—H. P.

Varieties of *Erica cinerea*.—Just now one of the brightest bits of colour in the American garden, with the exception of the *Rhododendrons*, is furnished by some clumps of the different varieties of the grey Heath (*Erica cinerea*), whose flowers are borne in such profusion that little is to be seen except a dense mass of brightly coloured bells. It is a native of Britain, and on that account is probably often passed over, yet it has many desirable qualities. In the first place it will flourish where at all favourably situated, is thoroughly hardy, and flowers at a time when most shrubs are past their best. It may be employed as an edging, or rather planted as a foreground to the larger *Ericaceæ*, and is besides a valuable subject for the rock garden, where its myriads of bright-coloured blossoms form a most attractive feature. Many of our hardy Heaths, though much neglected, are well suited for similar conditions, and where a suitable selection is made a succession will be kept up for months, commencing soon after Christmas with the pretty little *Erica carnea*, and finishing when the autumn or winter frosts become severe. Among the last to flower are one or two well-marked varieties of the common Ling or Heather, notably *Searlei* and *Alporti*, which with the Cornish Moor Heath (*Erica vagans*) and *Erica multiflora* sometimes bloom until quite late in the year. There being many

varieties of the grey Heath, the present is a very suitable time to make a selection therefrom, as they are all in full flower, and among the best must be mentioned coccinea, bright red; alba pure white; atropurpurea, deep purple; and superba, very bright purplish magenta.—H. P.

NOTES FROM THE ARNOLD ARBORETUM.

POURTHLEA ARGUTA is flowering here freely for the first time. It is a graceful, hardy shrub, with slender, spreading branches, covered with smooth, pale grey bark, that of the branchlets thickly covered with warts. They are covered when young, as are the stout branches and inflorescence, with short, scattered white hairs, but become perfectly glabrous at maturity. The flowers are small, one-fourth of an inch across, pure white, and are followed by small, red globose or ovoid, one to two-seeded pomes. The genus *Pourthleia* was established by Decaisne ("Nouv. Arch. du Mus." x., 146) for a number of plants peculiar to the Himalayas, China, Corea, and Japan, which, in herbaria, were long confounded with species of the allied genus, *Photinia*, which they resemble in general appearance. The genus commemorates the labours of the French missionary, Pourthié, massacred in Corea in 1866. It is a native of the Himalayas from Sikkim to the Khasya Hills and to Burmah. It is apparently very variable, Sir Joseph Hooker describing no less than six varieties in the "Flora of British India" (ii., 382). In cultivation here it is a remarkably neat and apparently a perfectly hardy plant, already nearly 8 feet high, having been grown in the arboretum for a number of years. The divergent habit of the branches and flower-bearing lateral branchlets give to this plant a peculiar and striking appearance quite unlike that of other plants in the collection. It flowers here about ten days earlier than its near ally, *Photinia villosa*.

THE DALMATIAN SPIRÆA CANA is very fine here this year. It is one of the most variable of the *Spiræas* in habit, in the size and pubescence of the leaves, and in the size of the inflorescence. Next to *S. trilobata* and its varieties, of which *S. Van Houttei* is by far the most beautiful, *S. cana* is the best of the late-blooming *Spiræas*, which produce their flowers on the extremities of lateral, leafy branches. The most attractive of the numerous forms of this plant which are cultivated in the arboretum is one with small, ovate, entire leaves (one-half to two-thirds of an inch long), covered with soft, silky white tomentum, and with very abundant, although small, panicles of flowers. This is a perfectly hardy shrub of handsome, compact habit. It grows here to a height of 2 feet or $2\frac{1}{2}$ feet.

COTONEASTERS.—There are many species and varieties of these in the collection. Among them are plants of considerable ornamental value, especially for the autumn decoration of gardens, as they nearly all produce showy fruit. Among the species now in flower, the handsomest at this season of the year is the dwarf and here nearly prostrate *C. microphylla*. It is a low, intricately-branched shrub, with very stout, rigid, horizontal branches. The flowers are rather large (half an inch across), solitary, greenish white, with showy red stamens. The scarlet fruit is globose. *C. microphylla*, often confounded in gardens with *C. rotundifolia* and *C. buxifolia*, is a native of the Himalayas, from Kashmir to Bhotan, where it is found at elevations of from 4000 feet to 10,000 feet above the sea level. *C. microphylla* is fairly hardy here, and is a useful plant for carpeting the ground under larger shrubs. Its neat habit, brilliant, although small leaves, and handsome and abundant flowers and fruit make it a desirable subject for the rock garden or for the margins of small shrubberies. *C. acuminata* is also in flower. This is an erect shrub, with rather stout branches. The flowers are dull pink and inconspicuous. They are followed, however, by handsome black fruit, which makes this plant a conspicuous object during the autumn months. It is a native of the Himalayas, from Sumor to Sikkim, where it extends to an elevation of 13,000 feet. It attains sometimes a height of 14 feet in its native country, where the wood is used for walking-sticks ("Fl. British India," ii.,

385). *C. acuminata* is perfectly hardy in the arboretum, in which it has been growing for several years. *C. vulgaris* is the most showy species of the genus in fruit in this collection. It is an erect shrub, with stout branches; small, inconspicuous, reddish flowers, and brilliant, bright red, drooping fruit, which remains upon the branches for a considerable time after the leaves have fallen; it is found from Northern Europe, through Siberia and Persia to the Himalayas. There is a variety with black fruit which is not in this collection. *C. vulgaris* is a perfectly hardy plant, and although a very old inhabitant of gardens, it seems to be rarely cultivated in this country in spite of the fact that it is one of the most desirable of autumn fruit-bearing shrubs.

RHAMNUS ALPINUS, now in flower, has the most ornamental foliage of the genus. The leaves are large, 4 inches or 5 inches long. The flowers, like those of the other species, are inconspicuous, yellow green. The fruit is black. It is a dwarf shrub, attaining sometimes a height of 3 feet or 4 feet. Here it grows rather slowly, and its hardness is not yet satisfactorily demonstrated. It is a native of the mountain ranges of Southern Europe, from Spain to Turkey.

THE DEEBERRY, OR SQUAW HUCKLEBERRY (*Vaccinium stamineum*) is a charming garden plant, and one which, when well established, grows freely in any good soil, requiring no special care or peculiar treatment. It is now covered with flowers. *V. stamineum* is a widely-branching shrub, 2 feet or 3 feet high and bears large, round or Pear-shaped fruit, which is green or sometimes dull purple when fully ripe, and barely edible. The Squaw Huckleberry is found over a large part of the Northern States and along the Southern Alleghanies, growing always in gravelly soil, under the shade of deciduous trees, generally different species of Black Oaks. Brought into the garden and treated generously, it will grow more freely than it does in its native home, and will delight and astonish those persons who are not familiar with the beauties of the American *Vaccinias*.

EXOCHORDA GRANDIFLORA, a well-known garden shrub and a native of Central China, has flowered this year in this neighbourhood in the greatest profusion, and perhaps has never before been seen here in so great beauty. It is certainly one of the most beautiful of all spring-flowering shrubs. It is not, however, although known in European gardens for more than forty years, as common a plant as the great beauty and profusion of its flowers would lead one to expect. The truth is, it is a difficult plant to propagate; there is no stock upon which it will grow, and green wood cuttings root very slowly and with great difficulty. Seed, if it can be had, germinates freely, but young plants rarely produce seeds, which appear apparently only on old and long-established plants; and old plants are rarely seen. The *Exochorda*, from some reason or other, dies young, at least in this climate, and it is rare to see a bush more than 6 feet or 8 feet high here. Generally before it reaches that size the branches begin to crack and to lose the bark. After this the plant gradually perishes, and generally disappears at the end of two or three years more. Any seed which can be found should be carefully collected and sown, so that a succession of young plants can be kept up.

LONICERA PARVIFOLIA, a small, shrubby species from the alpine Himalayas, is in flower. It is a neat shrub with minute leaves and small greenish white flowers—a pretty plant enough, but of no great beauty or horticultural interest.

LONICERA GLAUCA (the *L. parviflora* of Gray's "Manual") is a beautiful native Honeysuckle, which is now in flower. It has trailing or sometimes bushy stems, rarely more than 4 feet or 5 feet long, smooth leaves, green on the upper and very pale and glaucous on the lower surface. The flowers are greenish yellow, tinged with dark purple, and are produced in closely approximate whorls. This is a northern plant, extending almost to the shores of Hudson's Bay, and not uncommon in Northern New England and New York or on the high Carolina mountains—a good subject to naturalise on rocky banks or the borders of woods.

LONICERA ALBERTI may be mentioned again, that the testimony of another year's trial may be recorded in its favour. It is certainly one of the best small shrubs of recent introduction. The habit is graceful and the colouring delightful. The flowers are abundant, fragrant, and of good colour; the fruit, which was produced here last year very freely, is large (three-fourths of an inch in diameter), vinous-red and covered with a glaucous bloom. This is, so far as we know here, by far the most valuable of the ligneous plants introduced in late years from Central Asia through the efforts of the Russian botanical explorers, the most active and successful of whom, Dr. Albert Regel, is very fittingly commemorated in this charming plant.

LYCIUM PALLIDUM is now loaded with its handsome tubular flowers. The introduction of this species was certainly a very lucky hit. The fact that a plant of the dry south-west grows here so well and flowers so profusely is a remarkable and interesting fact.—*Garden and Forest*.

SHORT NOTES.—TREES AND SHRUBS.

Periploca græca—This rapid growing climber is now densely covered with its velvety brownish red, unpleasantly scented flowers on a wall at Kew. It is deciduous, and therefore of no use for screening unsightly objects, but it may be well grown on a wall or some such spot, as it is perfectly hardy and of luxuriant growth.

Habltzia tamnoides—Those who do not know this graceful climber will find an excellent specimen of it in the herbaceous ground at Kew. The plant is herbaceous, quite hardy, and now covered with greenish yellow flowers. Good soil and a fair amount of moisture during the summer are required. It is just the plant for the wild garden for covering rootwork or clothing pillars and tree stems.

A good white-flowered Heath (*Erica cinerea alba minor*).—This is a very pretty variety of the grey Heath, which differs from the ordinary white-flowered form in being altogether of smaller growth, for it assumes the character of a dense globular mass, thickly studded with little white bells. It is rather later in flowering than the other varieties, but it is well worth a place among the most select of them.—T.

Cerasus azorica.—This is a form of the Portugal Laurel (*Cerasus lusitanica*), but differs from the type in many points. Firstly, it forms a more open shrub than the common kind, the growth being more vigorous and the young shoots of greater length, so that they are naturally of a somewhat spreading character. A marked point of difference however, is the way in which azorica flowers, for it blooms so profusely as to be entitled to a place among our flowering shrubs. The individual blooms too are somewhat larger than those of the type. It is quite hardy, and is altogether a very desirable form of the Portugal Laurel, which is represented in our gardens by one or two varieties, the principal being myrtifolia, whose small, dark green foliage and neat habit fit it for use where large plants would be out of place; coriacea, with leaves unusually thick, and one with variegated foliage.—T.

Syringa japonica.—A couple of years ago Messrs. Veitch were awarded a first-class certificate by the Royal Horticultural Society for this Japanese species of *Syringa*, which bears a greater resemblance to the Privets than to the Lilacs, and was formerly known under the name of *Ligustrum amurense*. It is a free-growing bush with foliage not unlike that of the Himalayan Lilac (*Syringa Emodi*). The flowers, however, are quite different, being small, creamy white in colour, and borne in large loose clusters at the points of the branches. It is a very handsome shrub when in full flower, and blooming as it does at this time is especially valuable. The flowers, however, possess a very strong smell, somewhat like that of Privet, which is certainly not in its favour, but being perfectly hardy, almost indifferent as to soil, and very free flowering, there are many situations in which it may be advantageously placed.—T.

Pernettyas on clay (GARDEN, June 22, p. 587).—It is very interesting to know that this tribe of plants does so well upon a stiff limestone marl soil. The plan of mixing a little boggy loam with

the staple at the time of planting on such a soil is a capital one, but I had no idea that it would stimulate the growth of the plants to such an extent as to smother to death Hollies and other strong-growing shrubs in their vicinity. I have always found the Holly to be one of our best hardy shrubs or small trees, and capable of growing in confined places under the shade of trees, where few other plants of any kind could exist, so that Mr. Coleman's experience in this case is rather an exception to the general rule.—J. B. W.

Diervilla sessilifolia.—The various members of the Asiatic Weigelas are by some classed with the Diervillas, but they are widely removed from the North American *D. trifida* or *canadensis*, which forms a bush 3 feet or 4 feet high, clothed with ovate-acuminate leaves, while the flowers, which are borne in both terminal and axillary clusters, are yellow. It is now in bloom, as well as *D. sessilifolia*, which differs from the preceding in the leaves being somewhat larger, rather more pointed, and suffused with red; through the spring they are of a yellowish hue. The whole plant appears more vigorous than *D. trifida*, and though neither of them are by any means as showy as their allies, the Weigelas, still the yellow-coloured blossoms give them a very uncommon appearance.—T.

Spiræa palmata elegans.—The plant which is in cultivation under the above name and reputed to be a hybrid between *S. palmata* and *Astilbe japonica* seems to bear a greater affinity to the common Meadow Sweet (*S. Ulmaria*) than to either of its supposed parents. The leaves are divided as in our British species, and the flowers, which are borne in flattened corymbs, are white with a pinkish tinge, while the anthers are reddish. It is far less ornamental than *S. palmata* or its white variety (*alba*), and the name *elegans* is certainly misleading.—H. P.

Berberis concinna.—This little-known species of Barberry is a native of the Himalayas, and is now in full flower. It forms a small compact growing shrub a foot or two in height, with very neat foliage of a pale green above and a beautiful silvery white underneath. The flowers, which are borne on the points of the shoots, are of a bright yellow tint, and a succession of them is generally kept up for some little time. It is a shrub that must not be planted where it has to compete with other and stronger growing kinds, but may be employed as a foreground to the larger Barberries or as a rock-work plant.—H. P.

PROPAGATING.

SELAGINELLAS.—Some of these may be increased with little trouble, and will succeed in almost any position, provided the atmosphere is not too dry. Most of the sorts, however, do better if they can be kept quite close until they get a start. As there will now be some spare room in the propagating house it will be a good time to propagate a batch of the most useful sorts; even such varieties as *S. Kraussiana*, *S. apoda*, and *S. Martensi* will start away better and make more even specimens if kept close for a short time. These may be propagated in the pots that they are to be grown on in. The pots may be filled nearly full of any coarse siftings from ordinary potting compost, and surfaced over with a little finer soil. In this the cuttings may be put in thickly, or they may be put in say five or six in a pot. Of other dwarf-growing sorts which may be treated similarly, the following are worthy of attention, viz., *S. Poulteri*, deep green, of a dense compact habit; *S. cæsia*, which when grown freely has a beautiful bluish shade. *S. Browni* and the variegated and golden varieties of *S. Kraussiana* are also very desirable. The golden form of *S. Kraussiana* when well coloured forms a pretty edging to darker coloured foliage. *S. amoena* is another very desirable species; this, together with *S. grandis*, *S. Lyalli*, &c., requiring a little more care than those previously mentioned. A little rough peat should be included in the compost, and the plants should be propagated in small pots and potted on as they require it.

FERNS.—The present will be a good time to in-

crease the stock of various sorts which can be propagated by division. Among those which may be readily increased in this way, the *Davallias* are the most important. This genus includes many beautiful and distinct species, few of which can be got readily from spores, though occasionally a good batch of seedlings may be thus obtained. Most of them, however, may be propagated from the spreading rhizomes. Where these have not extended beyond the edge of the pots they may generally be obtained with a few roots on the under side, or where this cannot be done, the old plants should be plunged in some light material. Cocoa-nut fibre refuse will answer the purpose well, and as soon as a few young roots are made the dividing may be done. The rhizomes should be cut back far enough to secure one or two good fronds with each division. Small pots should be prepared, using plenty of drainage, and the pots filled up to the level of the rims with some porous compost. The rhizomes should be pegged on, and a little Sphagnum Moss and sand pressed round to cover the roots. If kept close and moderately moist they will soon take root in the new soil, and may then be removed to the fernery. *Davallias* are particularly serviceable either for the rock fernery or for baskets. *D. elegans*, *D. dissecta*, *D. bullata*, *D. Mariesi*, *D. Griffithiana*, *D. fijiensis*, and *D. canariensis* are all useful sorts, and may easily be propagated as above. *D. Mooreana*, although the rhizomes are not so conspicuous and do not spread so much, may easily be divided. When plants are frequently divided they form very useful decorative subjects, but when left to themselves they soon get too large for most purposes.

NEPHROLEPIS.—The members of this genus are all very useful, and may be propagated by allowing the slender rhizomes to spread over some suitable material to form roots in. Most of the sorts produce young plants freely in this way. If the pots are plunged and a little peaty soil spread over the surface of the bed and sufficient room is given, young plants will soon spring up, and these may be taken off and potted as soon as they are sufficiently established. Of the most useful sorts, *N. exaltata* is the best known—*N. tuberosa*, *N. pectinata*, *N. acuta*, *N. davallioides* *furcans*, and *N. rufescens* *tripinnatifida* being all good kinds which may be treated as above.

ADIANTUMS.—Although most of these may be obtained from spores with little trouble, there are a few kinds which must be propagated by division, foremost among which is the beautiful *A. farleyense*. The best plants to use for propagating from are those with rather short fronds, older plants with large fronds being much more difficult to manage. It is also better to select plants that have not been standing long enough to get pot-bound, as it is much easier to procure a few young healthy roots with these, and consequently they do not receive so great a check when broken up. *A. Veitchii* is another beautiful Maiden-hair which, although it produces fertile fronds, I have never succeeded in obtaining plants true from spores. *A. bipinnatum* and several varieties of *A. Capillus-veneris*, besides other sorts, may be similarly treated. In propagating Ferns by division a great point is to take care that they do not get withered during the operation, and they should be potted into the smallest pots consistent with the size of the plants. As soon as done the plants should be well watered, after which it should be used very sparingly until the plants have made fresh roots. It is also necessary to keep the plants quite close and well shaded until established, when they may be gradually exposed until they are sufficiently matured to stand the ordinary treatment in the fernery.

HERBACEOUS CALCEOLARIAS.—Propagating these by any other means than from seed is now a thing of the past. It requires some care to establish clean healthy plants from seed. And when, to secure good varieties it was necessary to preserve the old plants to propagate from, it was even more difficult. However, at the present time seed may be procured which will produce flowers of good quality and an almost endless variety of colours and markings, while the plants are of dwarfer and

better habit than formerly. To secure good plants, which should begin to bloom about the end of March or beginning of April, the seed should be sown within the next fortnight. The seed may be sown in shallow pans or boxes, which should be filled with good mellow loamy soil, using for the surface some that has been sifted through a fine sieve. The seed does not require any covering, but the soil must be made thoroughly moist; it will then require only a very slight sprinkling from time to time with a fine-rosed watering-pot until the seedlings are large enough for pricking off. It is most important that the seed pans should be placed in a cool shady position; a frame under a wall with a northern aspect is about the best position. If the frame cannot be placed where the sun does not reach it, it should be covered with a mat, which should be kept moist. The frame should not be quite closed. To ensure keeping off snails, &c., the ground should be well covered with soot or lime. As soon as large enough to handle, the seedlings should be pricked off; the same soil and position will suit them, but after the first few days they must not be quite so heavily shaded, and plenty of air must be given. The plants should be potted off singly as soon as large enough. The compost for potting should have a liberal addition of well-rotted manure. It is only by careful attention while the plants are in a young state that these showy spring flowering plants can be grown to perfection.

A.

GARDEN FLORA.

PLATE 709.

COBURGIAS.

(WITH A COLOURED PLATE OF *C. TRICHROMA*.)

THE genus *Coburgia* is closely related to *Stenomeson*, differing only in the former having larger flowers and a more robust habit. Mr. Baker unites the two, calling them all *Stenomesons*, but for horticultural purposes we may follow Dean Herbert and retain the name *Coburgia* for the several species described below. They are all natives of the Andes of Peru, Bolivia, and Ecuador, at very high elevations, and may therefore be cultivated in a sunny greenhouse in this country. In Mexico and other American countries *C. trichroma* is cultivated with great care as a garden plant. In England, however, the genus has never become popular, a fact which is due probably to the plants proving difficult to flower. That they are handsome when in bloom may be seen by the accompanying figure of *C. trichroma*. With regard to their supposed shy-flowering nature, it may be stated that, like many other bulbous plants from the same regions, *Coburgias* flower annually when properly treated. At all events they have flowered well for the last three years at Kew, where they have been treated as follows:—

CULTURE.—The bulbs are like those of the *Vallota*, and, like them, they also produce numerous offset-bulbs or "chats" about the base of the old bulbs every year. If these are left on the *Coburgias* they do not flower. This was proved at Kew, where some large potfuls were kept in the mass, simply shifting them into larger pots as they needed it. The bulbs grew freely and increased in number very rapidly, but there were no flower-spikes. Then a different plan was tried, and proved successful. When the plants were examined and repotted in February, all the offset-bulbs were removed and the large bulbs were potted singly into 4-inch or 5-inch pots. Next year if these did not require repotting, the soil was removed sufficiently to allow of the removal of the offsets,

* Drawn for THE GARDEN by H. G. Moon in the Royal Gardens, Kew, March 25, 1889. Lithographed and printed by Guillaume Severeys.



CEBURGIA TRICHROMA

and fresh soil was substituted. The pots were then placed in a sunny house, where the night temperature did not fall below 50°. When the plants were growing, plenty of water was given. The flower-spikes were pushed up at the same time as the new leaves, or they preceded them a little, as in the *Hippeastrums*. During summer the plants continue to grow, and they are assisted with a little liquid manure now and then. All this time they remain in a well-aired sunny greenhouse. The leaves fade in autumn, when water is gradually withheld until all signs of growth have gone, when the plants are placed in a dry, sunny position for the winter. One year the bulbs were wintered in a house where the temperature fell almost to freezing point in severe weather. As a result of this some fine bulbs were lost. Since then the bulbs have been wintered in a house where 50° is the minimum. The soil used is two-thirds loam and one-third peat, with a little sand and crushed bones added. The flowers last about a month, the last one having faded this year about a fortnight ago.

I quote here the treatment recommended by Dean Herbert, but as far as my experience goes the temperature he recommends does not answer in the neighbourhood of London. He says:—

I have ascertained that all these bulbs succeed well in a strong, rich, alluvial soil, and probably they will like old rotten manure. They thrive well in the open ground in summer, but must be taken up and kept dry, or nearly so in winter. The bulbs are not delicate, but will not endure our winter, except near the front wall of a stove, or with some protection to keep them dry. I consider the application of heat, after the full growth of the leaves, to be the most likely way to promote their flowering, but the first growth of the leaves should be made in a cool and airy situation, or they will be weak.

The Dean evidently did not succeed with them, as he stated more than once that they bloomed very shyly under cultivation.

C. TRICHROMA has a globose bulb about 3 inches in diameter, and with a brown shining skin and a long neck. The leaves are strap-shaped, 1 foot long, 1 inch broad, semi-erect, and milky green in colour. The flower-spike, from 1½ feet to 2 feet long, slightly compressed, and erect, bears an umbel of from four to six flowers, which are at first enclosed in a pair of stout oblong bracts, the colour of which is green and bronze, contrasting effectively with that of the flowers. These are 3 inches to 4 inches long, curved or nodding, rosy scarlet, with broad lines of green edged with white on the spreading segments. A stout bulb will sometimes develop two of these spikes simultaneously. There is a figure in the *Illus. Hort.*, 1877, t. 285, under the name of *C. trichroma speciosa*, which I suspect is an artist's exaggeration of ordinary *trichroma*, as the spike bears thirteen flowers, all but about two fully open.

C. INCARNATA is very similar to *C. trichroma*, differing only in the smaller quantity of green on the flower segments and in the larger size of the flowers. Mr. Baker includes as forms or varieties of this the following: *C. variegata*, *C. versicolor*, *C. fulva*, and several others, but these are not known in cultivation.

C. LUTEO-VIRIDIS.—Bulb and leaves as in *C. trichroma*. Flower-spike 1½ feet high, bearing from four to six flowers, each of which is 3 inches long, nodding, pale yellow, with a bright green tip to each of the spreading segments. In form the flowers are similar to those here figured. It blooms at the same time and requires the same treatment as *C. trichroma*. The flowers are pretty, but not nearly so effective as those of the last named.

C. COCCINEA.—In this the bulbs are only 1½ inches in diameter, shorter in the neck, and the leaves are much narrower than in *C. trichroma*.

The flower-spike is about 1 foot long and bears an umbel of from four to eight flowers, each 1½ inches long, narrow at the mouth; colour wholly bright red. It is also known as *Stenomesson coccineum*.

If any reader of *THE GARDEN* has other species besides those here mentioned, a note to that effect would be of interest to those who, like myself, are growers of bulbs of the rarer kinds. W.

KITCHEN GARDEN.

AUTUMN SUPPLY OF MUSHROOMS.

AFTER a long spell of hot, dry weather there is usually an abundance of Mushrooms in the open fields, during the early autumn months especially; but all districts are not favoured alike in this respect, and in any case it must be considered a somewhat precarious supply. It is certainly very convenient to be able to pick up fresh Mushrooms every morning for several weeks in succession, but I do not admit that these are superior to what can be grown in cool sheds and on the ridge-shaped open-air beds. Seeing how little trouble either of these are, I think it advisable for all who are able to do so to form early beds. We find there is the greatest demand for Mushrooms during the shooting season, or from the beginning of September to the end of January, this apparently being the time when a good variety of dishes for the breakfast table is most needed. In anticipation of this demand, and irrespective of what may be obtained from the open fields, manure for forming beds must be collected during the early part of July, the materials being prepared and a bed spawned not later than the first week in August. All conditions being favourable, the spawn runs exceptionally well in August, the first Mushrooms being obtainable in about a month from the date of spawning the bed. As a rule, a bed will only remain constantly productive for about three weeks or a month, subsequent supplies being fitful and thin; consequently those who wish to maintain an even and good supply of Mushrooms of all descriptions—that is to say, “broilers,” “cups,” and “buttons,” all of which the best cooks insist upon having and find a good use for—must form a fresh bed every three weeks, more or less, according to the quantity of suitable manure available. The earliest beds especially may well be formed in the open air, as these can be relied upon to yield the best produce until severe frosts or very cold weather intervene. If preferred, the beds may be made in cool sheltered sheds, it being possible to have abundance of good Mushrooms from beds in these places up to midwinter. Unless the heated Mushroom houses are exceptionally roomy, it is not advisable to utilise these much before November, and the beds spawned in that month or early in December should carry on the supply throughout the winter and the early part of March, after which time abundance of Mushrooms can be had from the beds in cool sheds and in the open air.

We have not once failed with the open-air ridge-shaped beds, and find them very easily managed and exceptionally productive. All who have tried them, however, have not met with success, and some complete failures have come under my notice. On examining these I discovered that the mistake had been made in some instances of using manure prepared exactly the same as if for the ordinary nearly flat beds; whereas quite a different method is necessary. Instead of completely separating the droppings as much as possible from all particles of straw, only the longest and cleanest of the litter

should be forked out, that portion intended for making into a bed consisting of about equal parts of straw litter and horse droppings. This, when well prepared, can be built up firmly into a ridge-shaped bed; the straw retained with the droppings, in addition to increasing the bulk, holds all well together, sustains a steady heat longer, and also serves to throw off rainfall. When horse droppings only are used, these cannot be firmly packed together, and although the heat may be strong at first it soon declines, and quickly becomes saturated and cold—such conditions being fatal to the spawn. It cannot be too often pointed out that only droppings from horses fed with hard food, notably corn and hay, are suitable; that obtained from Grass-fed horses, or which are frequently given Carrots, being worthless for the purpose of making into Mushroom beds. Nor should the manure be long allowed to remain in a mass, whether above ground or, worse still, in a deep pit, as it so soon becomes violently hot, and in the course of a week or ten days the whole may be heated quite dry, and a white mouldy heap, with very little life left in it, be the result. The manure ought, therefore, to be kept in shallow heaps till sufficient has accumulated to form a bed, and be then thrown together into a good-sized heap, square if the weather is dry, and conical if very wet. In a week, or even less time, the centre will have become very hot, and the whole heap must then be turned inside out, a good watering being given if at all dry. This operation should be repeated every two or three days, all long pieces of straw being thrown out and flakes of manure well separated. Not till the heap has become fairly sweet and decomposition has set in is the material fit for making into a bed, from a fortnight to three weeks being necessarily expended on the preparation. As might reasonably be anticipated, these ridge-shaped masses, unless great pains are taken in the preparation of the manure, are liable to become violently hot, and this overheating, if it takes place after the spawn is inserted, will destroy the greater portion of the latter, and in any case is most prejudicial to ultimate success. Well-prepared manure should, when made into a bed, be fairly hot, sweet, and moderately moist, or sufficiently so to bind together in the hand without any moisture exuding from it.

A ridge-shaped bed may be formed in any sheltered position, a dry bottom, however, being necessary. It may also be made of any length, the shortest I have yet seen being 8 feet, and the longest 40 yards long. The site should be staked out, so as to ensure uniformity, the usual width being 30 inches, this being gradually reduced as the materials are very firmly and evenly put together, till it is narrowed to 6 inches at 30 inches above the ground, the proper height of the bed. It is a mistake to make the ridge too tapering, and it cannot well be too firmly built or too neatly finished off. When completed it should present a semi-thatched appearance, the straw portion of the manure being well raked down, this the better to effectually exclude saturating rains. The trial stakes, well thrust into the centre of the bed, must be frequently drawn out and tested. At first the heat ought to rise considerably, or say to 90°, or rather more, and not till it has declined to 80°, or when the stakes can be borne comfortably in the palm of the hand, should the spawning be carried out. In olden times these ridge-shaped beds were made considerably larger in every way, and were then much more difficult to manage. In addition to spawning the lower or cooler portion of the bed first, it was often found necessary to thrust strong stakes

down through the centre, the holes thus formed acting as safety valves or an outlet for injurious steam. This precaution is also sometimes necessary with smaller beds, and if pointed irons are used, these can be thrust fairly easily down through the centre. These sloping surfaces may be spawned in exactly the same manner as the ordinary nearly flat beds, and directly it is found there is little or no danger of the heat again rising to an injurious extent, a thickness of about 2 inches of fine fresh loamy soil should encase the bed. A covering of straw litter 6 inches or more in thickness would complete the most important part of the work, and without much further trouble a good crop of Mushrooms should result. I ought, perhaps, to add that fresh spawn is always preferable to any that has been on the place for several months, especially if it has been stored in a rather moist position. W. IGGULDEN.

TWO GOOD EARLY DWARF PEAS.

BOTH of the Peas I am about to name are classed among the wrinkled varieties, and it is always understood and accepted that the wrinkled Peas are of the best table quality. One is William Hurst (Laxton), a singularly dwarf and very early variety, growing about 1 foot or 15 inches in height, and bearing large, well-filled pods for so early and dwarf-growing a type. Of its table quality there can be no difference of opinion. The seeds are blue. This was sent out by Messrs. Hurst and Son. Chelsea Gem was distributed by Messrs. Veitch and Sons, of Chelsea. It is the white-seeded form of William Hurst. Probably as a result of mixed parentage, many of Mr. Laxton's Peas have produce of a mixed character in point of colour—some white, some blue, and some a mixed attempt at both. One can readily understand that by selecting the white from the blue it would be easy to create two varieties, though with only the slight difference in the colour of the seeds. American Wonder is of this type, but the pods are smaller and less curved than in the case of William Hurst. I take American Wonder, when in its best form, to be a true stock of Maclean's Little Gem, as sent out by the late Charles Turner many years ago, and it is not difficult to understand that Little Gem was sent to America, grown there, the true dwarf form selected from it, and then sent back to this country under the name of American Wonder.

My second favourite dwarf Pea is Multum in Parvo. This is said to have been raised by Mr. B. R. Cant, of Colchester, and it was sent out by Messrs. Nutting and Sons. I have always regarded it as a seedling of the late Dr. Maclean's. Dr. Maclean resided at Colchester, and he was the first who systematically set about the task of fertilising Peas, and crossing them with a view to the production of new varieties, and he raised a large number of seedlings, some fifty or so of which passed into the hands of the late Mr. Charles Turner, and by whom were sent out Advancer, Epicurean, Early Prolific, Little Gem, Princess Royal, and others. Multum in Parvo has all the characteristics of one of Dr. Maclean's seedlings, and I claim it as one of his. Whatever may have been its parentage, it is undoubtedly one of the largest podded of the first early wrinkled Peas in cultivation, and it is greatly appreciated about Edinburgh. I have been recently informed by one of our largest wholesale seed merchants that out of every twenty bushels of Multum in Parvo seeds sold, nineteen of them go to Scotland. It succeeds William Hurst, and I know of no two Peas so valuable to gardeners for early crops as William Hurst and Multum in Parvo.

R. D.

Tomatoes.—All that is required to secure heavy crops of Tomatoes during the prevalence of such tropical weather as we have lately been and are still having is to keep the plants uniformly moist at the roots and the shoots and leaves well thinned out and stopped; the latter should be pinched back to within two joints of their bases, and the former

at one joint beyond each cluster of fruit, so as to direct the flow of sap and light into the thickening of the shoots and the development and ripening of the several clusters of fruit. In order to preserve the moisture at the roots, a mulching of rotten manure to the thickness of 3 inches or so should be laid on without further delay. Each succeeding watering will wash the strength of the manure down to the roots, thereby tending to increase the weight and quality of the crop.—H. W. WARD.

KITCHEN GARDEN NOTES.

PLANTING AND SOWING IN DRY WEATHER.

A COMPARATIVELY long spell of dry weather and bright sunshine has hardened all naturally heavy land surprisingly, and it is no easy matter to do much of the seasonable work. It will do the ground a lot of good, the beneficial effect of the extra warmth imparted to the soil being observable for the rest of the season. A few of the more moisture-loving vegetables may suffer somewhat, and some difficulty will be experienced in getting some necessary work done, but, on the other hand, weeds are easily kept in check, slugs are comparatively harmless, and the winter vegetables will form more sturdy, therefore hardier growth. But, in spite of the hard state of the ground, there is much important work that must be proceeded with, waiting for rain being so much valuable time wasted. Any ground that has been roughly dug up a few days or weeks will have become exceptionally hard, and requires to be specially prepared for cropping. It should first be chopped and broken down with the heavy half mattock hoes, and then given a good watering. If this is done overnight the chances are all will break down finely the following morning, and a well-pulverised breadth of ground be available for either planting or seed-sowing. Where it is thought desirable to plant on quite firm ground it is advisable to first cut rather deep drills with a heavy hoe and fill this with water, or better still liquid manure, this in the course of a few hours rendering planting an easy matter. Even if the ground is naturally free working I would yet draw drills and water them, and these being left open in all cases for a few days or weeks the plants in them can be more readily moistened at the roots as often as necessary. Where slugs are troublesome—and they were never more numerous than they have been this season—the planting of "winter stuff" should be done as much as possible in dry weather or when slugs are least destructive, and by the time showery weather arrives the plants will be strong enough to take care of themselves. Whether the plants are moved from either where they were pricked out or from a seed bed, it is imperative that a thorough soaking of water be given a few hours in advance. The former ought always to be transplanted with a good ball of soil about the roots, and put out with a trowel, but the latter may be drawn from the beds and planted with a dibber. The old-fashioned plan of well puddling the roots of any of the Brassica tribe prior to planting is still worthy of being practised. All that is necessary is to mix some soot with clayey soil and water and thoroughly coat the roots with the moderately stiff puddle thus formed. We find plants treated in this way do not flag so badly, and, in addition, are much less liable to be attacked by small weevils, that are apt to deposit eggs near the collar or junction of the roots with the stem, the ultimate result being a great swelling or disease known as ambury or clubbing—this effectually checking the growth of the affected plant.

We invariably obtain a better plant of runner Beans, Peas, Lettuces, and, in fact, all vegetables dear to slugs, when the seed is sown in dry, hot weather, and this with only a very little extra trouble expended in preparing the ground. Many err in applying water after the seed is sown and covered; whereas, if the drills are drawn and watered a short time in advance of sowing the seed, the dry soil levelled over it will effectually enclose the moisture, dry earth being an excellent non-conducting mulch. It is a curious fact that our best summer Lettuces are grown on the ridges

between the Celery trenches without any help from the watering-pot other than the moistening of the drills prior to sowing the seed.

RAISING CABBAGE PLANTS.

Although ours is a naturally warm district, we are obliged to raise the Cabbage plants intended to stand through the winter somewhat early, owing to the heavy, cold nature of the soil. The fixed date of sowing the seed hereabouts is July 15, but in other localities the end of the month or the first week in August is frequently quite early enough, those raised earlier being liable to run to seed prematurely. Varieties vary materially in their habits on different soils, and we, therefore, in order to be on the safe side, sow a portion of the seed about the middle of July and the remainder a fortnight later. It is always advisable to select an open plot of ground, mixing with the surface soil, if need be, a good dressing of leaf soil, or something to lighten it, and a free use of either lime, soot, and wood ashes, or all, in mixture, may tend to prevent clubbing at the roots. Moisten the surface, sow the seed thinly and broadcast, covering with a little fine, light soil. If birds are apt to be troublesome, net over the beds, and occasional coatings of soot and lime will keep off slugs in showery weather.

BROCCOLI.

If the plants of these are kept for a few weeks crowded in the seed beds, all will have wretchedly long stems, and a very bad start towards preparing them in a hardy manner made. The sooner, therefore, all are in their final quarters the better. Any that are not very leggy may be planted in the usual manner, but those badly drawn, if planted uprightly, would probably be destroyed by a moderately severe frost. If the latter must be put out, it is advisable to plant them in a sloping direction, so as to cover about three parts of the stems with soil, this being most easily done according as the ground is dug. The tops of all will quickly assume an upright position, and if the ground is not too poor, a comparatively hardy and serviceable lot of Broccoli be eventually obtained. In planting some regard should be paid to the known season of the respective varieties, that is to say, the earliest and mid-winter varieties ought to be grouped together as much as possible, and, if it can be so arranged, in the warmer parts of the garden, the successional and late sorts also having their special sites. The ground occupied by the former can then be cleared in time to be prepared for other early crops, while the later varieties can be gradually removed and their places taken by various late vegetables. Indiscriminate planting completely confuses the arrangements for the following year, and that is another reason for judicious arrangements. Those who require a good variety of vegetables in November, December and January, and have some facilities in the shape of pits, vineries, and sheds for storing a few dozens or hundreds of fully grown Broccoli ought to plant Veitch's Autumn Protecting most extensively. One-third of the number of plants being put out here this season will be of this rather tender, but exceptionally serviceable variety. The best substitutes for it are Michaelmas White and Autumn Mammoth. Snow's Winter White, notably the Sandringham selection, forms a good succession to the foregoing and is more hardy. For these reasons, therefore, it ought also to be most extensively planted. Either Spring White, Adams' Early or Dilcock's Bride are suitable for affording an early spring supply, and next comes Cooling's Matchless, this being closely followed by Perfection and Leamington. The last-named is exceptionally valuable, a good breadth of plants affording quite a long succession of very superior heads. Model is very good in May, and this again may well be largely planted. Lauder's Goschen, Victoria, Standwell, Cattell's Eclipse, Safeguard, Champion, Late White and Wilcove Improved are each and all superior semi-late varieties; but the very best late varieties are Late Queen and Latest of All, both of which are hardy and of excellent quality.

CHOU DE BURGILLY.

We hold this to be of little value as a late autumn vegetable, but thoroughly appreciate it for

winter consumption, and find it especially serviceable during February and March. In our case, a good piece of ground now being cleared of early Ashleaf Potatoes will shortly be levelled, the surface broken down and made rather firm, and then planted with Chou de Burghley. It is not quite so hardy as could be wished, especially when the hearts are well advanced, and that is why rather high ground is chosen. Planted on strong, loose, freely-manured land, this "Cabbage Broccoli" is apt to grow to a great size—it becomes much too large, in fact—in which state it is not very hardy, and if it escapes frost, and is sent to the kitchen, the cooks complain of its coarseness. Our plants being put out about 15 inches apart each way, the ground is soon covered, and abundance of medium-sized well-blanching hearts of the best table quality can be had when most wanted, viz., directly the Savoy fails, or when Broccoli is scarce.

SAVOYS.

These ought to be grown in quantity in both large and small gardens. They rarely succumb to frosts and the tender sweet heads they produce are by many preferred to any other kind of winter greens. If it is a question whether a limited area should be principally devoted to Savoys or Broccoli, I should unhesitatingly advise in favour of the former. We find they succeed admirably on a rather cold east border, planted without any preparation other than cleaning and levelling in succession to Leeks. Such small varieties as Tom Thumb, King Koffee, Little Pixie, and Earliest Dwarf Vienna form quite a pretty edging to the larger-growing varieties, and are also suitable for fruit borders, as they come off the ground quickly. These small Savoys may be planted 12 inches apart each way, and an additional 3 inches is sufficient for the Early Dwarf Elm, Dwarf Green Curled, and Gilbert's Universal. Both the Dwarf Elm and Universal are of excellent quality, and may well be planted extensively. The Drumhead is of a coarser habit, and this ought to be planted 18 inches apart in rows 2 feet apart.

BORECOLES.

All the varieties of Borecole or Kale are hardy and more or less serviceable, but we most value Read's Hearting, this being the best form of the green-curved Scotch that can be grown, as it produces a tender heart and a good succession of succulent greens. The ordinary tall and dwarf green-curved varieties of Scotch Kale are also very serviceable; while the Cottager's Kale is perhaps the most productive of all and very hardy. All these ought at once to be finally planted about 2 feet apart each way, or the rows may be 30 inches apart and the plants 6 inches nearer each other. They pay well for liberal treatment, a moderate amount of manure under them much improving the quantity and quality of the crop. The Asparagus or Buda is the only other Kale we care to cultivate, this dwarf and exceptionally hardy variety producing abundance of most succulent greens till late in the season. This may be put out now in rows 2 feet apart, or if no plants are available, the seed can be sown at once where the plants are to grow. The drills may be drawn 18 inches apart, and the seedlings eventually thinned to about 12 inches apart, or even less, being grown similarly to Spinach. W. I.

Cutting Lettuces.—In complying with "A. D.'s" request in THE GARDEN, June 29 (page 609), for an opinion on this subject, I beg to say that I have not had any experience in growing Lettuces in the manner set forth and for the purpose indicated by your correspondent. However, I have no doubt about a very tender and crisp salading of Lettuces being secured by sowing the seed somewhat thickly in a frame or under a handlight during the summer and early autumn months, or in a heated pit the remaining months of the year, the object being, as set forth very clearly by "A. D.," to secure a quick and clean growth. The Paris White Cos and Grand Admiral Cabbage or any other quick-growing summer varieties would, I imagine, be suitable Lettuces to grow for cutting young. These, if sown in a warm border out of doors any time between the middle of

May and the middle of August, would be fit for cutting within a month by keeping the soil in which they are growing moist all the time, that is, from the time the seed is sown until the plants are cut. In support of this assertion I may say that seeds of fine varieties of Lettuce (including those named above) sown on an east border on June 18, watered every afternoon, and kept covered with old mats until the young plants came up are now (June 29) developing their third or fourth rough leaves. Seeds sown under handlights and in cool frames any time during the period stated and treated as indicated in the way of watering would produce plants fit for cutting within three weeks, allowing the same time to ensure plants fit for cutting when grown in heat during the winter and spring months. In order to keep up a constant supply of young Lettuces grown for the purpose indicated it would be necessary to make successional sowings every week or ten days throughout the year somewhat after the manner of Mustard and Cress. With regard to the "value of cutting Lettuces so called for salads generally," I may say at once that I set very little value on this method of supplying salading, especially during the summer and early autumn months when the necessary complement of blanched solid heads of Lettuces is easily procured. However, any cultivators who may show a preference for this Mustard-and-Cress way of growing Lettuces for salading will not encounter much difficulty in carrying their fancy into practice. But at present I fail to see anything in the method of procedure to commend it to public favour. —H. W. WARD.

Tomatoes at Chiswick.—In one of the houses in the Royal Horticultural Society's Gardens at Chiswick is a number of pot plants of five varieties of Tomatoes which deserve notice for their free-cropping qualities. One of the chief kinds is Horsford's Prelude, the fruit of excellent quality, smooth, of medium size, and freely produced. Another good variety is Ham Green Favourite, but the most prolific is Tennis Ball, one or two of the plants having as many as fifty fruits; these are of roundish shape, medium size, and smooth, but not of the very best quality. The large-fruited Perfection was bearing well; so also Advancer, another good type; the strings and bunches of red fruit hanging from the plants are exceedingly ornamental. The best all-round variety is Horsford's Prelude, as it not only bears freely, but the fruit is excellent in quality.

ORCHIDS.

PAPHINIA GRANDIS.

A FLOWER of this strange and beautiful plant comes to me for a name from "G. T., Stafford." He says that it came with other Orchids from Brazil, and flowered soon after its arrival. The above is its name, and I may remark that it is a rare plant, and I should like to know the district in Brazil from which it was sent, for assuredly we want to know more of the surroundings of this beautiful and singularly flowered genus. Paphinia as at present known comprises but few species, the oldest and best known being *P. cristata*, which was originally placed with the *Maxillarias*, from which, however, it is quite distinct, and so also are all the kinds which I have seen, from the *Lycastes* into which Bentham has placed the *Paphinias*, but which name I do not think English Orchid growers are likely to adopt. *P. cristata* was introduced to cultivation upwards of fifty years ago from Trinidad, but although occasionally seen in flower, it has never been established thoroughly in gardens, and has never become a common plant with us. The flower of the variety now before me (*P. grandis*) is very much larger than that of *cristata*, more richly coloured, but very seldom seen. I hope "G. T." will succeed in establishing it in his garden.

Paphinias are small growing plants, which

grow naturally upon the slender branches of trees, and I should imagine they affect moist situations. To grow Paphinias, they should be placed in small wooden baskets or in shallow, well-drained pans; the soil should consist of about equal parts of peat fibre and Sphagnum Moss, with some nodules of charcoal in and about it to help keep the material open and sweet. The plants should sit on a cone-like mound above the rim, and the whole be pressed down firmly; the basket should be hung near the roof-glass, so that the plants may reap the full benefit of sun and light, but shading must be provided to protect the plants from the burning effects of the sun during the hotter part of the days in summer. It is not done, the leaves which are thin in texture soon become disfigured, and any destruction to leaves results in a check to the formation of strong pseudo-bulbs, and weak pseudo-bulbs do not bring forth flowers. Paphinias should be grown in the East India house, and the atmosphere should be well charged with moisture. During the growing season, a liberal supply of water is necessary, and at no time in the year should the plants be allowed to suffer from drought, although I believe in a state of nature these plants become much shrivelled during the dry season. Under cultivation, however, it is far better not to subject them to such a trial. There is little more to be said respecting the cultivation of Paphinias, and if "G. T." has a fairly strong mass of *P. grandis* and treats it according to the above directions, he will in all probability succeed in establishing it, but perhaps not flower it again this season. Its flowering appears to me somewhat out of place, as it usually blooms during the late autumn months.

P. cristata is a small-growing plant, seldom exceeding about 9 inches in height; the pseudo-bulbs are ovate, slightly compressed at the sides, and bear two or three strongly ribbed leaves, which are thin in texture and rich green in colour; the scape usually bears a pair, sometimes three flowers, each measuring 3 inches across. The flowers remain two or three weeks in full beauty. The flowers are extremely beautiful, curious in form, and somewhat variable in colour; usually they each are between 3 inches and 4 inches across. Sepals and petals nearly equal, spreading, somewhat fleshy in texture, and creamy-white on the outside. The ground colour of the interior is also creamy-white, thickly covered with narrow transverse lines of rich chocolate, suffused with a tinge of purple. The lip is shorter than the sepals and petals and of a peculiar shape, and blackish-purple in colour, the claw being deep orange-red and spotted, whilst at the end of the trowel-shaped anterior lobe is a tuft of downy, white hairs, which give it a singular appearance. The column is large and rich yellow at the top, becoming green towards the base. It would appear to be plentiful in Trinidad, as from that island I have received it in quantity, and I have also had it sent me from Demerara.

P. grandis.—The flower now before me from "G. T." is much larger than that of the preceding kind, but the sepals and petals are less spreading; if these are spread open the flower measures about 6½ inches across. The sepals and petals are fleshy and nearly equal in size, the upper half is wholly rich deep chocolate, the lower half of a creamy-white or straw colour, profusely marked with transverse irregular lines of rich chocolate; the lip is similar in shape to that of *cristata*; the side lobes are, however, larger and of a reddish-chocolate hue, the front lobe bearing a pair of falcate wings and furnished at the point with a dense tuft of long, creamy-white hairs. It is a very rare and handsome plant. Native of Brazil.

P. rugosa is a smaller plant than the last, and bears flowers similar in size to those of *P. cristata*. The flowers in this plant are yellowish or tawny-yellow, more or less banded and spotted with rich brown. The lip is shorter than the sepals and

petals and is white, spotted and blotched with purple, and bears on the tip a brush-like tuft of creamy-white hairs. New Grenada.

P. SANDERIANA.—This, like the last-named plant, is a summer bloomer, and indeed, as with the species now before me from "G. T.," they may all flower at various seasons. The blooms are each slightly over 3 inches across, and the fleshy sepals and petals are nearly equal; they have a creamy-white or straw-coloured ground, over which is scattered a profusion of brownish-purple spots; the lip, like that of all the species, is peculiar in structure, and shorter than the sepals and petals, of a uniform deep purplish-brown, with a brush-like tuft of white hairs on the tip.

Cypripedium pardinum (T. J., Leicester).—The flowers sent appear to me to be merely those of the typical *C. venustum*. In the original plant which I saw at Kew twenty years ago the dorsal sepal was of a purer white than in your flowers, and the lip was brighter in colour. The peduncles were all two-flowered, although I do not think this is a character which is found in the *pardinum*s of today.—G.

Dendrobium MacCarthiae.—This beautiful species comes from Mr. Cypher at Bath, and it bears three flowers on a scape; these are large, and more open than is usually the case with this species. The sepals and petals, too, appear to be paler than usual; the maroon-purple on the lip, however, is the same, and it is bordered with light bright purple. Orchid growers in this country have not obtained a mastery over this species, although it has been imported largely from time to time. It is found only in the island of Ceylon, and is becoming very scarce.

Vanda Cathcarti.—A flower of this plant comes from "M. Manchester," for an opinion, and I must say it is the finest form of this grand plant which has hitherto come under my notice. The sepals and petals are leathery in texture, 3 inches across, the ground colour yellow, which colour is almost obliterated by the very close transverse lines of bright reddish-brown. The front portion of the lip is yellowish-white, the margin deep yellow. It is a superb plant somewhat difficult to grow, and I know quite well that it is difficult to import in a living state. It is the *Esmeralda Cathcarti* of Reich. f.—W. H. G.

Masdevallia Reichenbachiana.—The very finest variety of this plant which has come under my notice was in the Cambridge Lodge collection, where these plants receive special attention, and a great number of species are gathered together, shade, moisture, and a very low temperature being found to suit them admirably. The flower in question stands on a long peduncle well above the foliage; the dorsal sepal is reddish purple, the lower ones creamy white, with two bands of reddish mauve on the upper edge, the long tails being yellowish green. It belongs to the *coriacea* group, and well deserves recognition in memory of the man whose name it bears.

Dendrobium Bensoniæ.—This white-flowered species is now beautiful in Mr. Coulthurst's garden at Streatham Lodge, where a few Orchids are to be found growing with other plants, no special attention being given them. This *Dendrobium* has been an inhabitant of our gardens upwards of twenty years, and it is distinct from any other species; the purity of its white flowers, set off with orange at the base of the lip where there are two eye-like spots of deep maroon, should render this plant a great favourite. It is a native about Prome and Moulmein, at no great elevation, and should, therefore, be kept in the hottest house to make its growth, after which it should be rested in a lower temperature.

Phalaenopsis grandiflora aurea and *P. gloriosa*.—These plants are becoming greater favourites every year, and although it must be admitted that they require more care and attention than most other Orchids, they amply repay any extra care bestowed on them. The first-named bears a large flower, upwards of 4 inches across,

round and full, and of the purest white, saving a stain of rich yellow on the side lobes of the lip, and on the fleshy crest on the disc. *P. gloriosa*, of which a coloured illustration appeared in THE GARDEN, April 20, 1889, partakes something of the characters of *P. grandiflora* and *P. amabilis*. It is one of the Messrs. Low's recent importations, and is probably not sufficiently established to display its full beauties, the flowers at present being smaller than those of *P. grandiflora*, but equally as pure in colour, the base of the lip being stained with yellow and spotted with crimson. Both forms are now very beautiful in Mrs. Studd's garden at Bath.

Aerides crassifolium.—This is a superb *Aerides*, one of the most beautiful of the whole genus. A plant now flowering with Mr. Cypher, gardener to Mrs. Studd, is amongst the best that has ever come under my notice. The flowers are large, rich rosy purple in the sepals and petals, the large open lip being broadly streaked with deep amethyst-purple, and deliciously fragrant. The plant in question bears a long, dense raceme of fifty blooms. It is a species which requires a considerable amount of heat and moisture and an abundance of light. It may, however, be rested cool, like the majority of these distichous-leaved plants.—H.

Native Orchids.—From Mrs. Fisk, of Tyddyn-gwladys, North Wales, comes a beautiful boxful of spikes of these plants gathered in the mountains near her residence. Amongst them are excellent examples of (1) the Spotted Orchis (*O. maculata*), the spikes very dense, and the flowers varying in colour from pure white, with spots and lines of purplish crimson to those with purple flowers, beautifully and regularly streaked and spotted with crimson. These are as elegant as any of the Eastern *Saccolabiums*, and it is no wonder that a desire exists to cultivate them in the garden at home. Another species (No. 2) is *Gymnadenia conopsea* (the Fragrant Orchis), with spikes of purple flowers, which are extremely handsome and deliciously sweet. No. 3 is *Habenaria bifolia* (the Butterfly Orchis), also very fragrant. This example has a root which, however, is only half developed, thus showing the impropriety of lifting the plants at this season. No. 4 is another form of the same species, the flowers of which are also very sweet-scented. No. 5 is a pure white, unspotted form of *O. maculata*, and is, I believe, somewhat rare. There should be very little trouble in cultivating these plants by those who reside near their native haunts. One of the greatest difficulties arises in lifting them when in flower and just at the time they are in the middle of the growing season. This, however, can be avoided by anyone living in close proximity to them in a natural state. I would therefore advise that the places where they are marked by a stout peg, which can be seen later on when the plants have died off and finished their root growth. Carefully dig them up, and plant in the garden in exactly the same soil that they have been taken from and under the same conditions. This soil in all probability exists naturally in the garden, being so close to the spot in which they are found; if not, make it so artificially. They are beautiful plants, and if established in large clumps extremely showy.—W. H. G.

Odontoglossum vexillarium.—This beautiful species, of which we gave a coloured illustration, May 29, 1880 (p. 474), has been more endeared to the Orchid growers by the vastly improved forms which have been introduced during the past two or three years, and it is now flowering in great profusion in various gardens, the most notable of these in private gardens which have come to my notice being in the Cambridge Lodge collection at Camberwell, in Mr. Canon's collection at Merton, and at The Woodlands, Streatham. In the first-named the flowers appeared to be the largest, some examples measuring each $4\frac{1}{2}$ inches across. Mr. Canon's were also very beautiful; whilst at The Woodlands were nearly 3000 spikes of bloom, averaging four flowers on the spike—truly a wonderful sight. This plant has been perhaps more correctly removed to the *Miltonias*, but growers do not like to miss this grand plant from their

favourite genus. By all it has become acknowledged that it requires at least 5° more heat than *O. crispum*. It, however, requires great care and attention to maintain the plants in a clean and healthy condition under this warmer régime, its greatest pest being the black thrips, which, if allowed to obtain a footing, speedily cause the leaves to assume a blotched and black appearance. These require to be carefully removed and destroyed whenever seen, and as they hide themselves in the sheathing base of the leaves, the mischief is done before the insect is known to be amongst them. The yellow fly is also a great pest to this species, and as fumigating is very injurious to *O. vexillarium*, it was always a great source of annoyance, especially as it puts in an appearance just when the plants are flowering. In this state I have frequently seen the Thanatophore of the greatest service; the steam from this not only kills the insects without injury to the plants, but it is quite harmless to the most delicate flowers, and with these qualifications it cannot but become of the greatest help to Orchid growers. It appears, however, that the cost of the liquid for steaming is high, and leads many to forego the use of this machine. This species requires thorough drainage, and the potting material should be the fibre of good upland peat and chopped living Sphagnum. During the growing season, *O. vexillarium* enjoys an abundant supply of water to the roots and moisture in the air, and at no time should it be allowed to suffer from drought. Light syringings overhead when the plants are not in flower will also be found highly beneficial, and conducive to health and cleanliness.—W.

HARDY ORCHIDS.

THE HELLEBORINES.

SOME of these are well worthy the attention of cultivators of hardy plants, as they are of very free growth, very free-flowering, and not at all difficult to please either with soil or site. Generally speaking, they are shade-loving plants, if, perhaps, we except the marsh form, *Epipactis palustris*, which delights to grow in the open swamp or quagmire where one dare hardly venture.

THE GIANT HELLEBORINE (*E. gigantea*) is of large growth, strong specimens frequently attaining to a yard in height, with thick, fleshy, and sturdy, not brittle stems, and deep green leaves not unlike those of our native *E. latifolia*. Amongst leaf-mould and sand I have grown it well for many years; but it wants abundance of moisture, a shady situation, and plenty of bottom drainage. Perhaps the flowers, which are of a purplish pink, might not by everyone be considered as attractive or pretty, but they are large, well poised, and being set on such a tall and sturdy stem, have always an imposing and stately appearance. The root increases rapidly, and stems are frequently sent up at nearly 6 inches from the original plant. The Helleborine requires to be well established before its beauty is fully seen.

THE MARSH HELLEBORINE (*E. palustris*), whether for neat habit or abundance and purity of flowers, holds a high place amongst hardy Orchids. Individually the blooms are large and of a pinky white tinge, their beauty being much enhanced by the beautifully crenated labellum. It is an occupant of marshy and swampy ground, the edges of lakes, and occasionally, but rarely, meadow ground and pasture fields, and seems to have a special affinity for limestone districts and the neighbourhood of the sea. For several years I have grown it very successfully by imitating the soil and swampy spots in which it delights to grow naturally. Plenty of moisture must be allowed in the culture of this Helleborine, an open position fully exposed to the sun, and soil mainly composed of peat and chopped Sphagnum. It increases from the root-stock very freely, it not being at all uncommon for these new stems to be sent up each year. They run along beneath the ground and shoot up here and there with little or no regularity. A very pretty effect is produced by potting up a few strong roots and surfacing the top with the

Bog Pimpernel (*Anagallis tenella*). It does not dislike greenhouse treatment.

IN THE BROAD-LEAVED HELLEBORINE (*E. latifolia*) we have a sturdy plant, but one that is, unless in the rather rare varieties, of no great beauty as a flowering plant; 3 feet high specimens, and stout in proportion, are by no means uncommon, particularly when the plants are growing in a deep open soil, such as along the banks of a railway cutting or where trenching of the ground has at one time taken place. There is a white-flowered form, which is particularly attractive, the dirty purplish green of the typical species being quite wanting, while the plant is equally free of growth and quite as stout and sturdy. Pink-flowered varieties are not uncommon, and they contrast nicely with the form just alluded to, but the typical plant is hardly worthy of culture, unless as a botanical specimen. It is a plant of the easiest culture if uninjured crowns are planted in deep stony soil or gravelly loam.

E. OVALIS.—This rare native plant is a little gem, that rarely exceeds 4 inches or 5 inches in height, with a few small ovate leaves and a big and handsome spike of pinky white flowers. It delights to grow on the limestone cliffs and in the blazing sunshine, and where, from want of soil, few plants save the hardy *Pyrus aria* can eke out even a miserable existence. As a garden plant I have long cultivated this *Helleborine*, and it flowers freely, but increases slowly.

A. D. WEBSTER.

FLOWER GARDEN.

ANNUAL CHRYSANTHEMUMS.

WHEN visiting Hylands, Chelmsford, the residence of Mr. A. Pryor, a few days ago, I saw a remarkable bed of varieties of *Chrysanthemum carinatum*, or *tricolor*, well cultivated, and displaying themselves to the best advantage. Evidently the plants had been carefully raised



Chrysanthemum carinatum Burridgeanum.

from seeds and then planted out in well-prepared ground. They had grown into vigorous bushes and were bearing flowers of large size and handsomely marked. Mr. W. Bowman, the gardener at Hylands, stated that he found them invaluable for cutting. The type, *C. carinatum* (see illustration), was introduced from Barbary about 1796, and since it has occupied a place in English gardens it has been materially improved, several fine varieties having sprung from it. The habit of growth appears to be all that can be desired; it is erect, compact, free-

branching, and when grown in good soil throws up very strong stems that produce remarkably fine and showy flowers. As border plants they are superb, and they yield colours that are remarkably novel and striking. *C. tricolor*, or *carinatum*, has white petals, at the base of which is a yellow ring surrounding a dark disc. A fine and striking variety named *Burridgeanum* (see illustration) has white petals, but with a ring of bright crimson round the disc. Lord Beaconsfield is of a crimson-maroon colour, sometimes dense and sometimes striped with gold; there is also a golden margin. It is one of the finest of the newer types. *Purple Queen* is one of the latest introductions; there is a band of black round the disc, and the remainder of the margin is deep purple. *Sultan* has a dark brown disc, a golden ring round it, and a margin of crimson-maroon. W. E. Gladstone



Chrysanthemum carinatum (*C. tricolor*).

has the base of the petals crimson, shading off to violet. One seed catalogue describes this variety as brilliant, but erratic. What is intended to be conveyed by this is that it is changeable in character. But this is true of the tricolored annual *Chrysanthemums*. The presence of so many varieties, all of which have sprung from a common type, bears testimony to its changing character. Plants show different types of flowers. I have counted as many as four differently marked flowers on one plant, and this property of variability only adds to the interest felt by the cultivator in what he is growing.

Chrysanthemum coronarium is even an older introduction than *C. carinatum*, for it was introduced from Sicily about the early part of the seventeenth century. The single form appeared to have been almost lost to our gardens until recently, when the rage for *Marguerites* has been the means of bringing it to the fore again. It is called the Garland Flower, being much used by the Sicilian peasants for garlands. For some years past the double white and double yellow forms of *C. coronarium* have been found in gardens, and the yellow is much grown for market; the flowers when double are smaller

in size than when single, and they are as well formed as those of a *Ranunculus*. They, too, are much and deservedly grown for cutting.

The yellow *Chrysanthemum segetum* is also an annual form; its popular name is the Corn Marigold. This common flower of our fields has come to be much grown for cutting purposes, the golden yellow of its well-formed blossoms being highly acceptable for table and room decoration. It was formerly so troublesome a weed in Denmark that a law was passed inflicting a penalty on any farmer who neglected to eradicate it from his cornfields; and even in Ireland, Threkelde, writing in 1737, says: "Manour courts do amerce careless tenants who do not weed it out before it comes to seed." We have somewhat improved upon the common form of *C. segetum* by taking seeds from the finest types.

There is a small group of double annual *Chrysanthemums* obtained from *C. carinatum*. They are both white and yellow in colour, and being double they are regarded as more lasting than the single-flowered. But they are by no means elegant in appearance. It must not be supposed the single varieties do not stand well in a cut state. On June 22 I brought a handful of flowers from Chelmsford to London in very hot weather. On June 29, a week later, many of the flowers were as fresh as when first cut. R. D.

Field Poppies.—I must confess to having at one time some doubt as to the origin of these really charming flowers. A visit to a cornfield in the country last week has, however, dispelled these doubts entirely, as I gathered no less than six distinct varieties, not mere shades of colour, but sufficiently distinct varieties for ordinary garden purposes. The perfection to which Field Poppies have attained leave the French Poppies quite out in the cold, and as they give very little trouble besides keeping them clean, they ought to find a prominent place in every garden.—D.

White Lobelias.—I do not think many of your readers will agree with the statement of "A. D." in THE GARDEN, June 29 (p. 603), where he says that the compact growing forms of blue Lobelias come very true from seed, while the white forms do not. Such is not my experience. In that respect one is as good as the other. I do not consider that either of them can be relied upon. Those who require Lobelias true either in form or colour, as a rule, raise their stock from cuttings. The best white form of dwarf Lobelia for bedding that has yet been raised and distributed was obtained by a west of England nurseryman. It is, I believe, only locally known. I often find it in gardens in the neighbourhood in which it was raised, and as a dwarf-growing white form it leaves nothing to be desired. When grown by the side of *White Queen* it is far superior.—J. C. C.

Primula obconica.—A friend, whose son is a large grower of flowers in England, writes me expressing obligation for the note on the poisonous properties of *Primula obconica*. She says, in substance, "This has solved the mystery for us of the very troublesome inflammation of face and hands from which not only I, but two of my daughters have been suffering this last year. It is undoubtedly *P. obconica* that has been the cause of it, for since we have avoided handling the plant the symptoms have gradually disappeared. I do not suppose any but those who grow the plant in large quantities need be afraid, and our men have divided and repotted a great number without ill effects, so that it is only injurious to certain persons. It so happens that I have taken special trouble about our picking dead leaves, &c., little thinking that the evil was thus continually kept up. My eldest daughter, who has charge of boxes of cut flowers, has suffered greatly in her hands and arms, and, in some degree, in her face and eyes. Another daughter, who has used

the flowers in wreath-making, of late showed similar symptoms, which puzzled our doctor extremely, though he said he was positive there was some local cause. It is such a charming plant that we are truly sorry, but I am afraid the fact remains." As *P. obconica* is now being so largely grown, it seems well that this evidence should be given, as a warning to those who are susceptible to plant poisons.—J. N. GERARD, in *Garden and Forest*.

FLOWER GARDEN NOTES.

THE DROUGHT.—Though not very prolonged, the drought, consequent on the constant prevalence of north-easterly winds combined with fierce sunshine, has been of the severest description, and plants that continue in vigorous growth under such conditions are worthy of a first place on the list of summer flowering plants. I herewith note a few that virtually have had no artificial watering, and yet they are just as vigorous and flowering better than they could have done in a season of alternate sunshine and showers. I ought, perhaps, to add that our soil is light, but of good depth, and the plants are mulched with Cocoa fibre, a material that saves a great deal of watering. This is a branch of labour we strive to avoid in flower gardening, first, on the ground of economy of labour; and secondly, because the practice is injurious unless it be regularly performed. A constantly moist surface soil draws the roots upwards, and once this gets dry the tender rootlets perish, and as a natural consequence the plants suffer; whereas if left to themselves the roots will go down in search of moisture, and are consequently, in a dry time like the present, out of danger. Among the plants that stand drought well tuberous Begonias must head the list. The plants are simply grand, and they are flowering splendidly. Single and Cactus Dahlias—the only kinds we grow—have had no artificial watering, yet they are already of full height and many of them in good flower. We have quantities of auratum Lilies, some in full flower, and all as healthy as anyone could wish. The same must be said of *Salvia patens*, herbaceous Lobelias, and *Antirrhinums*, none of which have been watered. From the foregoing it will be seen that tuberous and fibrous-rooted plants have stood drought best. Pelargoniums are not far behind. All kinds have grown well and are flowering to perfection, and fine-foliaged plants are exceptionally well coloured. In the bedded-out garden these are all that I have noted as being as good without the labour of watering as very many other plants are with it, and the object of this note is that of indicating the kinds of plants most suitable for dry positions. Amongst herbaceous plants the following are noticeable for their perfect condition despite the heat and drought: Japanese *Aremones*, *Delphiniums*, *Galegas*, *Veronicas*, (*Enocheras*, *Acteas*, *Hemerocallis*, perennial *Helianthus*, *Funkias*, *Pentstemons*, *Rudbeckias*, and a few others of less importance. *Spiraeas*, *Phloxes*, *Geums*, *Potentillas*, *Asters* (*Michaelmas Daisies*), *Solidagos*, and others must in such a season as this be watered artificially or there will be no flowers. It is not in my power to give a complete list of the two sections of plants, nor is it desirable if I could, as all that are really interested in the culture of perennials will soon learn to distinguish the sections for themselves, and a self-discovered test is sure to prove the most helpful.

HYPERICUM (St. John's-wort).—We have a dry sloping bank fully exposed to the sun that was formed with the intent of screening a road from one portion of the pleasure ground. The soil, though poor, is of great depth, and shrubs—*Retinosporas* and *Cotoneasters*—have done exceedingly well on it, but the greatest hit of all was the planting of the Scotch St. John's-wort (*Hypericum barbatum*) here and there in the crevices of the stones that were placed to hold up the bank of soil. This plant has quite hidden the stones, and at the present time is grand in the extreme, being quite covered with flowers of the purest golden hue. The jutting out here and there of the dark green sprays of *Cotoneaster microphylla* and of the trailing shoots of the hardy evergreen *Vinca* (*Periwinkle*) adds greatly to the effect, and the whole forms

a most natural setting or cushion for *Retinospora filifera*, *plumosa* and *squarrosa*, and for *Cupressus Lawsoniana argentea* and *C. erecta viridis*. This manner of planting banks, screens, &c., is capable of great development, more especially in the direction of the use of a greater variety of plants such as *Ivies*, *Pernettyas*, *Ilex Fortunei*, *Irish Heaths* and other varieties of *Hypericum*. Not the least merit of this mode of planting bank screens is that of the little amount of labour needed to keep the plants in trim condition. The thicket of plants after the first year or two leaves no space for the growth of weeds.

SMALL SHRUBS AND FLOWERS IN MIXTURE.—Such mixtures I have for years arranged, and they have generally been approved of, but never till the present year have I thought them really beautiful; as a matter of course others may be of a different opinion. The origin of such arrangements in my case was that of endeavouring to lessen the labour of planting in autumn when the summer bedding plants were over, and the beds had to be filled for winter effect. Circumstances rendering it needful to still further curtail labour, we have this season made a greater use of shrubs than ever, and thus far with the most satisfactory results. I will try to describe the planting of one or two of the beds. A pair of circular beds about 8 feet across have central plants of golden *Retinospora plumosa aurea*, and are then regularly dotted over with three small plants of each of the following: *Cupressus erecta viridis*, *Retinospora plumosa*, gold variegated *Hollies* and small bushy *Mahonias*. The beds are edged with *Herniaria glabra*, next to which there is an enclosing line of variegated *Mesembryanthemum*, the whole of the space between the shrubs being filled with tufted Pansies—white, lilac, and sky-blue colours in regular mixture. The planting is simple in the extreme, and the colours of shrubs and flowers blend so naturally that one feels compelled to say, How simple, and yet how beautiful! Another pair of circular beds of the same dimensions are planted in exactly the same way, but with different shrubs, the centre plants being *Cupressus Lawsoniana argentea*, and the following plants in threes at regular intervals over the beds: Gold variegated *Euonymus* (bushy plants), *Retinospora squarrosa*, *Thuja borealis variegata*, and in the outer line six small bushy plants of *Euonymus radicans variegatus*. These beds are also edged with *Herniaria glabra*, and the enclosing line is *Leucophyton Browni*. The whole of the space between the shrubs is planted with tuberous Begonias, rose, scarlet, and apricot colours, and I say it advisedly, no other bedding arrangement that we have this year excels this.

CHRYSANTHEMUM TRICOLOR.—The hot weather has suited these annual varieties of Chrysanthemums, for the plants are already as large and as well flowered as they usually are by the end of the month, and the colours are exceptionally bright. All the tricolor varieties are showy and specially suited for filling beds in parts of the pleasure grounds, where excessive neatness is not looked for, because when once established they require no further attention than an occasional picking over to remove seed-pods, that the plants may continue in good flower to the end of the season. The Sultan, Burridgeanum, carinatum, W. E. Gladstone, and venustum are the most showy kinds. The seeds are best sown any time during March either in a cold frame or under a handlight, and the seedlings should be pricked out as soon as large enough to handle, and be transferred from the frames to the open borders early in May.

W. WILDSMITH.

Sowing Wallflowers.—Accidentally I have learned a lesson in the matter of sowing Wallflowers and some other seeds. It is customary to sow them as early in the spring as possible, so that the young plants are ready at an early date to put into their permanent quarters. This is important in the case of such kinds as the Harbinger and other kinds grown for cutting from for market. Naturally the earlier the plants are put into their winter quarters the greater chance is there of an

abundant and early bloom. Last spring some plants were allowed to shed their seeds, and the ground was not disturbed round them. In February the young plants came up thickly, and by April, which is the time generally chosen for sowing hardy perennials, they were large enough for transplanting. Such plants would make specimens double the size of spring-sown ones, and planting is so much more easily done in early spring than in the summer months. I believe that many things might be just as well sown in autumn as in spring. I noticed that *Clarkia* and some other hardy annuals came up at the same time, and much more freely than when sown in the ordinary way.—J. C. B.

THE CARNATION AND PICOTEE.

I HAVE been pleased to read the very interesting and useful articles that have recently appeared in THE GARDEN on these sweet and beautiful hardy garden flowers. One thing, however, I do not admire in the discussions which have taken place, and that is the tendency by many cultivators to extol the qualities of one section at the expense of another. A very large and increasing number of people prefer flaked and bizarred Carnations to selfs. If a man does not like flaked and bizarred Carnations, he need not grow them. I confess that I admire the selfs more every year, as so many new and beautiful varieties are being added to our collections, vigorous in constitution, dwarf and sturdy in habit, and of such rich, varied and decided colours that they cannot fail to command our admiration. Yet when these beautiful flowers are left out of doors in the ordinary flower borders all the year round, one year after another, we cannot depend upon their continued vigorous development of leaf and flower. Some there are like the good old crimson Clove, which will hold its own under the most adverse conditions, but there are many beautiful Carnations we would not like to lose, and lose them we would if we trusted only to out-of-door plants. Take the beautiful white variety The Bride (Hodges) as an example. It has been grown for many years, and is not at all plentiful; we cannot get enough of it; indeed, it would have disappeared from our collection long ago if we had not carefully nurtured it as a pot plant. Indeed, many selfs, especially pale rose, pink, blush, yellow, and buff varieties would have disappeared also if we had not taken the same care of them as we had done with The Bride. In regard to the flakes and bizarres, the same remark applies. Some varieties do quite well out of doors; others will do well for a time, until they gradually decline in vigour, and have to be nursed back again into good condition by pot culture. One of the largest amateur cultivators wrote me the other day, suggesting growing them from seeds in colours. He finds that from one cause and another named varieties are not quite satisfactory, and yet few amateurs have taken more pains to obtain all the best and most reliable varieties in cultivation. He has also the advantage of possessing a garden well adapted to the culture of the Carnation and Picotee; whereas many persons desire to grow Carnations, and lack that most important factor to command success, viz., good garden soil. The want of success in one direction may be the means of driving the cultivator to seek for it in another way, and I certainly think it is an excellent idea to try to obtain strains of distinct colours from seeds. My own experience leads me to the belief that amateurs may obtain a great deal of pleasure by trying this method of culture. Plants raised from seed when the flowers have been fertilised with pollen of the same varieties do not vary much in colour, although they do to a certain extent both in this and in the height of the flower stems. Hundreds of seedlings might be raised, and the pleasure of watching the development of the flowers is very great. From 100 to 200 blooms may be obtained on some of these seedling plants, and a score or two of layers. Numerous plants of the best forms may be selected for layering and a large bed or border could be furnished with hundreds of plants the first season. The most vigorous varie-

ties could be retained for future cultivation. The plants out of doors in many cases have not done well this year, owing to the excessive rainfalls caused by the heavy thunder showers and the hot, dry weather which cracked the ground into fissures. The seedlings have done much better than the propagated plants, but in truth a great deal depends upon the pains taken with them. The ground should be well prepared by turning it over and exposing the surface to the action of the weather before planting, and perhaps the best of all manure, if it can be obtained, is the sweepings of a cattle market. It should lie in a heap six weeks or more before being used, and if it is likely to become over-heated it can be turned over two or three times. I like to place a good layer of this manure 6 inches below the surface, and the plants pass through the winter in a more healthy condition if a thin layer of it is laid over the surface. Mulchings of manure in summer are also excellent for all classes of Carnations.

The plants may be layered at any time now, as the sooner roots are formed and the plants established the better they will pass through the winter, especially if they have to be planted out of doors.

Seeds are best sown in a hot-bed in the spring; the last week in March or the first in April suits very well. They will vegetate within a week in a nice bottom-heat, and the young plants grow very rapidly afterwards, and should be planted out permanently in good soil in June or early in July at the latest.

J. DOUGLAS.

SHORT NOTES.—FLOWER.

The Japanese Primrose (*Primula japonica*), self-sown amongst the Ferns, has given a bit of charming colour. Many of the plants were 2½ feet high.—W. O., Fota, Cork.

Scabiosa graminifolia.—This grows well at Ipswich in the open ground, where it spreads out into broad and pretty masses. It is a good rock plant, and will do well in a warm sandy border. The stems are somewhat woody, but are densely clothed with narrow silky grey leaves, the flowers being of a pale mauve-blue.—A. H.

The great Broom Rape (*Orobancha major*).—The Broom Rapes are a more curious than interesting class of parasites, mostly of a dusky brown hue. On a dry bank, clothed with Furze and Broom, I recently discovered the great Broom Rape in such quantity as to present quite a distinct and uncommon effect. One mass especially noticeable had twenty-five spikes, many of them being 2 feet high.—A. H.

Heucheras.—With the exception of *Heuchera sanguinea*, which should be in every garden, *H. glabra* and its near ally *micrantha* are the only good useful species of this genus; the latter two have small inconspicuous flowers, but they are borne on the loose stalks in such quantities as to make them objects of great beauty. *H. hispida* (Richardsoni), of which the flowers are dirty greenish, has very beautiful satiny leaves, and may be grown as a foliage plant for the rockery.

Fine-foliaged climbers.—Among hardy climbers remarkable for their fine foliage may be mentioned, besides the Dutchman's Pipe (*Aristolochia Sipho*), some of the North American Vines, notably *Vitis Labrusca* and *cordifolia*, which when growing vigorously produce huge leaves that die off richly tinted in the autumn. Whether on trellises or arbours they are very fine during the summer and autumn months.—T.

Helleborus niger ruber.—I presume that the Christmas Rose now being distributed under the name of Apple-blossom is identical with the above. If so, the popular name is decidedly the best, and very well describes the appearance of the bloom, which only by a stretch of imagination can be called red. My plants of it not being strong, I could not form last spring a correct opinion of its worth, but it seems to be a cheerful looking flower and valuable on account of its contrast to the white blooming kinds. As growing with me, the flowers were neither red nor pink, but irregularly splashed with the brighter colour, with a deeper shade on the reverse side of the petals. I have no doubt that this variety is the first step towards a race of

bright-coloured forms of the Christmas Rose, and that by constantly raising seedlings and selecting such as show even the faintest advance in colour to seed from, quite a bright pink variety might be obtained. Some may think that the beauty of the Christmas Rose lies in its exquisite purity, and that any form of colouration would be but a doubtful improvement, but variety is always welcome, and a good pink kind would find admirers.—J. C. B.

STOVE AND GREENHOUSE.

SIDE-SADDLE PLANTS.

(SARRACENIAS.)

I AM glad the attention of plant lovers has been called to this curious and interesting product of the American wild wood. The recent articles in THE GARDEN discussing the different species and the habits of each interested me very much. The *Sarracenia* is indeed a beautiful plant in its brilliant markings of the foliage with its curious veined network, and most interesting by reason of its peculiar habit of growth. Did it never bloom at all it would well repay cultivation for its foliage alone; hence those who do not succeed in blooming it will not labour in vain. It will, however, bloom under proper treatment, and the flower is almost as curious as the leafy pitchers themselves.

However, "W. H. G.," who endeavours in THE GARDEN, May 18 (p. 462), to correct what he terms an "absurd assumption" regarding the hardness of *Sarracenia purpurea*, that was inferred from the fact that this species is a native of North America, is quite in error, as I shall show. He says it grows "in the centre of the Northern States, where the summer temperature rises to 112° Fahrenheit, and where it is well covered with snow in winter." The fact is it grows amid the summits of the Catskill Mountains, in New York State, 3000 feet in the air, among the bogs and mossy swamps which abound there between small lakes. The mercury gets down to 25° below zero at times in winter, and frequently there is little or no snow at all. In summer the maximum temperature is very rarely above 75°. I have obtained beautiful specimens there, and the plant seems to feel delightfully at home up there in the cold clouds; hence I am not surprised at all to read in subsequent numbers of THE GARDEN that it succeeds admirably in the open air of England and the north of Scotland without protection. It should do well in any bog garden where it has protection from the hot sun. The plant delights in shade, and seems to possess a vigorous constitution. As to the other species and numerous hybrids grown in gardens and greenhouses, I cannot speak definitely, but I incline to award the palm to *S. purpurea* for beauty and vigour. This plant is also known by the following descriptive names of Side-saddle Flower, Huntsman's Cup, and Whip-poor-will's Shoe, and yet the appellations are more fanciful than appropriate, and it is perhaps better to adhere to the botanical name, as it is easy to handle and will avert confusion. This species being found in the Hudson's Bay region, its hardness ought to be unquestioned.

I obtained some beautiful specimens in the Catskills last summer; they were well supplied with large pitchers, and the crimson veinings overlying the green made the plants very showy indeed. One of the specimens flowered handsomely, throwing up a stem about 8 inches high, upon which was a curious globular nodding blossom of a crimson colour, which contrasted well with the green and crimson pitchers. From this I gathered seed, and I am

now trying to raise the young plants, wondering how they will turn out. It being the nature of the plant to rest in winter, I think it is often kept too warm by those who attempt to grow it in the greenhouse. This induces a soft, weak growth and poorly developed pitchers. A vigorous root growth should be encouraged, and not leaves at the expense of roots. Each flower-stem divides the crown of its plant into two, but the plants should not be separated until they have attained a good size. *S. flava* is a distinct and handsome species, with strong and rich venation. Another peculiarity of it is that its flowers are sweetly scented, being greenish yellow in colour. There are several hybrids with which I am unacquainted, except from the printed descriptions, but I think all of any value have been produced by using *S. purpurea* as one of the parents.

Kingston, N. Y.

H. HENDRICKS.

LILIIUM WALLICHI SUPERBUM.

THIS fine Himalayan Lily differs from *L. Wallichianum* in so many important particulars, that in all probability it will prove to be a distinct species, for *L. Wallichianum* is a slender-growing plant, with long, narrow leaves, which are of a bright Grass-green tint in all stages, and of an unusually thin texture, while the flowers are long, pure white in colour, with the exception of a greenish tinge on the exterior towards the base, and the segments are reflexed in a marked manner.

In the so-called *superbum* the stem is very stout, and thickly clothed with narrow leaves, which are much shorter than those of *Wallichianum*, and when young are tinged with reddish brown, which does not happen in the case of the typical form. The leaves, too, gradually become broader as they advance towards the top of the stem. In the case of the individual blooms there is a great difference between the two Lilies, those of the newer form being about 9 inches in length and nearly as much in diameter when fully expanded. They also possess an agreeable fragrance, reminding one very much of *L. neilgherrense*, to the flower of which species indeed that of *Wallichianum superbum* bears a certain amount of resemblance, for in the interior the lower part of the segments is of a clear ochre yellow, while the remaining portion is of a milk-white colour. The segments recurve in a very graceful manner, but not to the same extent as in some of its allies. The specimen shown was between 5 feet and 6 feet in height, but, of course, this character is very variable in the case of Lilies, depending, as it does, to a great extent upon the conditions under which they have been grown.

If this handsome Lily is not a variety of *L. Wallichianum* the question that arises is, What is it? My impression is that it is one originally discovered by Wallich, and by him named *L. ochroleucum*. I am fully aware that this Lily is by most writers, and notably by Mr. Elwes in his "Monograph of Lilies," regarded as synonymous with the Nepal Lily (*L. nepalense*), of which a coloured plate was given in THE GARDEN for January 19 of the present year. Still, it is somewhat singular, if these two plants are one and the same thing, that the name of *nepalense* should be acknowledged by Wallich, and then that he should afterwards bestow the name of *ochroleucum* upon the same species. Certainly *L. nepalense*, as shown last year by Messrs. Low, has no claim whatever to the specific name of *ochroleucum*, which the newer form most certainly has, and taking all these facts into consideration, as well as the many conflicting opinions that were published of *L. nepalense* prior to its flowering, I am induced to think that Wallich's *ochroleucum* has at last been introduced in a living state, and that it is totally distinct from *L. nepalense*. This last, as illustrated by Mr. Elwes, is widely removed from that flowered by Messrs. Low, for the figure in the monograph resembles the so-called *Wallichi superbum* quite as much as it does the true *nepalense*. Again, in the *Gardeners' Chronicle* for July 17, 1880, there is an illustration

of *L. nepalense*, which is certainly far more like the latest introduction.

Whatever differences of opinion may exist as to the name of this Lily, there can be none with regard to its beauty, for it is a decided acquisition, and one that Messrs. Low may well be proud of.

H. P.

ARALIA SIEBOLDI.

WE retain the name *Aralia Sieboldi*, as under that title the plant, of which an illustration is given, is familiarly known; but the botanist would call it *Fatsia japonica*, as it has been placed in the allied genus *Fatsia*, of which there are a few members. It is synonymous with *A. japonica*, and came from Japan about the year

and that is for indoor decoration. We know few things of the character of the glossy-leaved *Aralia Sieboldi* that can withstand so well the hardships plants thus used have to undergo, but the tough leathery leaves of the *Aralia* are proof against draughts, heated rooms and gaslight. When small, it makes a charming table plant, and those who have the management of exhibitions should always have a few ready to help decorate the tables. We have seen it in a small state used to divide Rose classes at shows of this flower, and no plant could be better chosen. A stock may be quickly raised from seed sown in gentle heat, and cuttings may also be made either from the stem or roots. It is a plant largely grown in nurseries, and one

the half-ripened shoots strike root without difficulty, though they sometimes stand a considerable time before roots are formed. In the case of large plants, the soil in which they are potted should be of such a nature that they may be allowed to remain undisturbed for two or three years, unless it be intended to grow the plant on as quickly as possible, when an annual shift may be given. Equal parts of peat and good loam, with a liberal amount of sand, will suit this *Gomphia* perfectly.—H. P.

WORK IN PLANT HOUSES.

STOVE.—MEDINILLAS.—Amongst the limited number of *Medinillas* known to cultivators are *M. magnifica* and *M. amabilis*, which differ little in appearance, except that whilst the panicles of flowers in the first-named sort are pendulous, those of the latter are erect. Taken altogether, *M. magnifica* may be said to be the handsomest kind. The treatment under which one succeeds answers for the other. Like most other plants indigenous to Java, *Medinillas* require warm treatment; they like to be grown in a house that affords plenty of light, with a somewhat drier atmosphere than such things as *Ixoras* and *Dipladenias* require, especially towards the latter part of summer, when the season's growth is being matured. In the absence of this the plants do not produce the full quantity of flowers which they are capable of when the wood is well ripened. Plants that were struck from cuttings during the spring of last year will now require a good deal of room, 14-inch or 15-inch pots not being too large for them. *Medinillas* will do in either loam or peat, but the former suits them best, as in it the growth is usually shorter jointed and the foliage less inclined to become coarse. They should be stood well up to the glass at the end of the house where the most air is given. Only a thin shade should be used, and this only in the middle of the day, as the more the foliage is exposed, provided it does not get scorched or disfigured, the better the plants will be. Syringe freely once a day, and if this is attended to, mealy bug is not likely to gain a footing. If any of the branches grow too strongly, cut away the points so as to direct the growth into the weaker shoots. Old plants that have had their strongest branches shortened in after they had done blooming will now have broken into growth and be in a condition for repotting. The amount of increased room that is necessary will depend on the size of the pots they already occupy. If as large as requisite to give them, it will be best to turn the specimens out and remove as much of the soil from the tops of the balls as can be got away without injuring the roots much. Replace the old material with new turfy loam, to which may be added a moderate quantity of rotten manure and some sand. Pass the manure through a fine sieve, so that if any worms are present they may be removed. Large plants that have to be grown in the same soil their roots now occupy should be assisted with manure water or with surface dressings of some concentrated fertiliser. If strong, vigorous-habited subjects like the *Medinillas* are not liberally supported, either with new soil or manurial stimulants, the growth comes too weak to be satisfactory. Cuttings struck during the past spring should now be moved into 6-inch or 7-inch pots. The leading shoots, if not already stopped, should have their points removed so as to lay the foundation for bushy, well-furnished specimens.

STEPHANOTIS.—Plants that have flowered late, either when grown in pots or planted out, should, when they have done blooming, be cut well in. Shoots ought to be removed to the extent of from one-half to two-thirds of the length they attained last season. If this is not annually attended to, the plants get to an unmanageable size, and do not usually produce any more bloom than when the branches are kept within due limits. Specimens that are grown in pots, and that previous to blooming had their shoots trained round trellises, should, after cutting in, be trained to strings or wires close to the glass. Where this is not done, and the mistake is made of winding the growing shoots round the trellises in a horizontal position, it induces



Aralia (Fatsia) Sieboldi growing in a pot.

1858. It is only during the last few years that the value of this almost hardy-foliaged plant has been fully brought out, as many were afraid to trust it in the open air until it was found that even frosts of some severity would do no further damage than sear the large, rich glossy green leaves. Such a plant, that combines a certain stateliness of habit with imposing foliage, may be made great use of in the garden, and one way is to have a single specimen on the turf, where it always looks well, provided there are suitable surroundings. A little shade does no harm. A small bed of spring or summer flowers with this plant in the centre is another way of seeing its beauty, and it is used frequently with happy effects in our London parks and gardens. Apart from its beauty in the garden, there is another use to which it is largely and appropriately put,

that all gardeners should have in moderate quantity. The plant shown in the annexed engraving has been grown in a drawing-room for five years, and during that time it has been only once repotted.

Gomphia decorans.—This very attractive stove shrub is just now beautifully in flower. It is a native of Brazil, where it attains the dimensions of a large bush, but here in the stove it flowers very freely when small. The *Gomphia* forms a branching specimen clothed with deep green leathery leaves, while the showy blossoms are borne in large terminal branching racemes. Each bloom is about an inch in diameter and of a rich golden-yellow colour, so that a specimen when studded with flower is very showy. Though now in full bloom, its flowering season is not limited to this particular period of the year, for I have had it in full beauty late in the autumn. It is by no means difficult to cultivate, for cuttings of

weakness to an extent that prevents their flowering well. Stephanotises differ from most moderately strong-growing plants, in that they do not like their roots being often disturbed. They bloom best when left in the same soil for years with no further assistance than can be given by the application of surface dressings of concentrated manure, or the use of manure water during the time that the growth is being made. Specimens that have been several years without any increase of pot-room must be well attended to in this matter, or they cannot be expected to go on flowering satisfactorily. Stephanotises will bear a high temperature provided the atmosphere of the house is not kept too moist, and sufficient air is given during the summer and autumn. If the plants are grown in a humid, confined atmosphere combined with much heat, the shoots do not get sufficiently hardened to bloom well; consequently it is better to keep them in an intermediate heat. The nearer the shoots are to the glass provided the leaves do not touch it the better it is for the plants; no more shade should be used than is found to be necessary to prevent the leaves getting scorched. Young examples that were propagated last year should now be in 7-inch or 8-inch pots, and if they have not already as much root-room as this they should be at once moved, as there is yet plenty of time for the roots to get fully hold of the soil before the end of the growing season. Syringe the plants freely every day at the time the house is closed. The air should be taken off sufficiently early in the afternoon to shut in as much sun-heat as possible. This is necessary with stove plants of all kinds, as it not only saves fire-heat, but the warmth thus obtained is much better for the plants than that which is given off by the pipes.

ALLAMANDAS.—Notwithstanding the large amount of growth these plants make during the long season they can be kept growing, and the quantity of flowers they produce, they can be kept in full vigour in much smaller pots than the majority of things that grow more slowly. This being the case, it is better during the early stages of their existence to confine them more at the roots than is often done. This holds good both with plants that are trained on trellises and that are grown with their tops under the roof; but when their roots are thus confined the surface of the ball should have a moderate dressing of concentrated manure once a fortnight, or liquid manure should be given every time the soil requires water. This the roots will bear, provided the water is not applied in too strong a state. Young stock of any of the varieties that were struck early in the spring should now be moved into 8-inch or 9-inch pots, for though, as already said, there is no need to give so much room to these plants as some things require, it is best to treat them during the first summer in a way that will enable them to attain size and strength. Full-sized specimens that were partially shaken out and repotted in fresh soil early in the year must now be well supported with stimulants, otherwise they will not continue to bloom freely up to the end of the season. With enough heat there is no difficulty in keeping Allamandas blooming up to the end of November.

DIPLADENIAS.—Dipladenias are at all times more impatient of over-watering than any other stove plants with which I am acquainted, as if the soil ever gets too wet the fibrous portion of the roots dies, leaving nothing but the fleshy tubers, and these, needless to say, are not capable of supporting the growth, though the branches often retain life after the feeding fibres have perished. But though it is necessary to be cautious with the water-pot, the soil should not be kept so dry during this and the following month as at other times, for the roots should now be plentiful enough to absorb moisture more quickly than usual; and if they are too dry the flowers usually fall off sooner than they otherwise would. To enable the plants to continue blooming through the autumn, which where required they will do, provided the necessary amount of heat is maintained, weak manure water should be given once a week. Where the branches have been trained to

strings run up under the glass, the plants may, if required, after the flowers have begun to open, be trained on an ordinary wire trellis, as the lateral shoots which spring from the strong branches formed during the spring will set their buds and flower without the support that it was necessary to give to the stronger growths. Care should be taken that the plants are free from mealy bug, for if this pest effects a lodgment on them, it is almost impossible to keep it down after the flowering has begun without disfiguring the leaves and causing the buds to fall off.

ROSES.—Tea Roses that are forced during the winter often have to be turned out of doors during part of the summer for want of room, otherwise it would be better to keep them under glass. The leaves of Tea Roses that are formed in the short winter days whilst the plants are being forced are very tender, and sensitive to the least hard treatment. When suddenly exposed to the open air, the result is generally seen in a luxuriant crop of mildew. If the parasite is allowed to infest the plants to any appreciable extent, even at this season when the growth is comparatively at rest, they will not flower well next winter. The plants after being turned out should be looked over once or twice a week, and as soon as any curled or slightly discoloured leaves are found sulphur ought to be applied without delay. In dusting the leaves with the powder, it is necessary to see that it does not reach the soil, for should it do so it will get washed down to the roots and do much harm. Neither must red spider or aphides be allowed a footing, or they will do permanent injury to the foliage. It is now time to repot any plants that require it; if well attended to afterwards, the roots will make headway in the new soil, though comparatively little top-growth may be apparent. Be careful not to over-do them in respect to root-space. Strong-growing varieties that are in vigorous health will do with larger pots than the weaker sorts. As much of the old soil should be removed as can be got away without sacrificing the roots, which in the case of pot Roses are rarely more plentiful than necessary. Drain the pots well, and secure the drainage with enough fibrous matter to keep it free from the soil. In potting, use the lath freely, so as to make the soil quite solid. Roses like harder potting than most things. Strong loam of a rich heavy nature suits them best; one-sixth of rotten manure and a moderate quantity of sand should be added. The plants may be pruned at the time they are potted, so far as cutting away all the thin wood that is too weak to produce shoots sufficiently strong to flower. They should be stood in a moderately open place, where they will get enough sun and air. If the pots can be plunged in ashes it will keep the roots at a more equable temperature, in addition to its preventing their being injured by the sun striking against the sides of the pots, and labour in watering will likewise be saved. Syringe overhead freely once a day in dry weather.

T. B.

Lilium longiflorum floribundum is one of the most lovely Lilies for pot culture that can be grown, as it succeeds so well in small pots, and is therefore suited for indoor decoration. It may be had in bloom for the greater part of the year by starting bulbs at different periods. We have some at the present time in 5-inch pots with three large blooms of the purest white on stalks little over 1 foot in height. For mixing with dwarf Ferns, Mosses, and Lycopods, this Lily will be found most useful.—J. G. H.

Double-flowered Pelargoniums—Pelargoniums of the Ivy-leaved and zonal sections with double blossoms are very plentiful, but in the large-flowered class, such as the show and decorative varieties, there are very few with double, or even semi-double flowers, though some of the Regal group are often spoken of as double, which is really not the case. An old, but very pretty variety with double blossoms is *album plenum*, which is of slow, sturdy growth, and produces its pure white blossoms very freely. The individual blooms are very pretty for button-holes and similar purposes, but the slow rate of growth is against its general cultivation. During the last few years, however,

several other varieties, with blossoms more or less double, have been raised, principally by M. Le-moine, of Nancy, all of which, by the way, are white, or nearly so. A very distinct variety is *Belle de Jour*, the blossoms of which are pure white without any pencilling whatever. This is notable from the fact that the flowers on one truss do not all open at the same time, or nearly so, but a succession is kept up for a considerable period. The flower truss of this variety is, therefore, always loose and irregular compared with the others, more especially as the individual blooms are borne on unusually long stalks. This last is an advantage, for they can be used in a cut state without destroying the whole truss. One thing that militates against the common cultivation of this variety is its loose straggling growth, for though some of the others are of a much better habit, in none of them are the blossoms of such a uniform pure white. Two varieties greatly resembling each other are *Jeanne d'Arc* and *Madame Bouchardat*, of a free, yet much branching habit, and with trusses of pretty double blossoms of a blush tint. In *Madame Papé Carpentier* the flowers are whiter than those of the last two, but not so pure as those of *Belle de Jour*. A useful variety put into commerce last season is *Duchess of Teck*, which appears to be a sport from a well-known market kind, *Madame Thibaut*. It (*Duchess of Teck*) is, however, very variable, for while some blooms are double, others are quite single, while the same difference in colour is also to be found, for pure white flowers, and others more or less pencilled in the upper petals, are to be met with on the same plant, and even on the same truss. Whether the blooms are single or double, however, their massive character causes them to be of great value for cut purposes. A remarkably curious Pelargonium with double blossoms is *P. cucullatum fl.-pleno*, a stiff-growing kind, that produces its heads of double purple coloured flowers nearly throughout the year, if in a suitable temperature for the purpose.—H. P.

FERNS.

W. H. GOWER.

MENISCIUM.

THESE plants are bold-growing ornaments in a naturally arranged fernery, and present a striking and distinct appearance grouped with finer leaved sorts. They are swamp-loving plants, and should therefore be planted in situations where their peculiar wants can be attended to, otherwise they produce but a sorry effect. In a naturally arranged fernery there are usually spots where provision is made for pools of water, and on the margins of these, associated with some of the *Osmundas*, *Acrostichum aureum*, and such like plants, the *Menisciums* will thrive admirably, and produce a grand and varied effect. It is this object that should be always kept in view in the planting of a fernery; want of it has been the cause of Ferns going so much out of favour of late years. There are no varied shapes and colours of flowers to diversify the scene, and it therefore behoves the planter to use Ferns with a distinct character of leaf, so that one cannot, by a cursory glance over the house, see all its contents and become wearied. *Menisciums* are strong rooting plants and thrive best in nearly all loam, and, indeed, this soil keeps sweeter when saturated with water than does peat or leaf-mould. The plants, however, do not appreciate stagnant moisture, so that the pool of water upon the banks of which they are planted should be dipped out or lowered occasionally in order to allow the soil of the bank to drain away, but the roots should never be allowed to suffer from drought. If grown as pot plants, the pots should stand in large pans of water, and these supplied with fresh water once or twice in the week will keep the plants in a thriving condition. Under such

treatment I have grown handsome specimens of the majority of the kinds here enumerated. They are all plants from warm countries, and therefore require the warmth of the stove; the fronds are simple or pinnate, the pinnae large, and on the under side the sori are large and conspicuous, forming a great ornament to the frond.

M. SIMPLEX.—I introduce this species first because it is the smallest of the genus, makes a pretty pot plant, and may be grown in a Wardian case. The rhizome is creeping, and the stems are slender, pale straw colour, and a few inches high, frond usually about 6 inches long and 2 inches broad. The base is rounded in some forms, and in others it is auricled. This is conspicuously the case in the form brought from Hong-kong by the late Mr. J. G. Veitch, and I have also had this form in cultivation. It is a native of Hong-kong and the island of Formosa.

M. TRIPHYLLUM is another pretty pot plant, having fronds from 1 foot to 18 inches high, including the bare stem. As its name implies, there are three pinnae to the frond, the central pinnae each some 6 inches long, but the two lower ones are less than half the size. The fertile frond is similar in shape, but smaller, whilst standing upon a longer stem it rises above the others. Ceylon, &c.

M. GIGANTEUM.—This I have only seen with a simple frond, and indeed I think this is its true character. The fronds are supported upon somewhat stout dark brown stems 1 foot in length; the blade of the frond is oblong, becoming suddenly contracted at both ends, from 1 foot to 2 feet long, and about 3 inches or 4 inches broad, strongly ribbed, and deep green. A bold handsome plant from Peru.

M. PALUSTRE.—A bold, handsome plant when in a suitable position, the fronds each measuring from 2 feet to 4 feet in length, independent of a stem a foot or more long. The fronds are pinnate, bearing numerous pairs of pinnae, each from 6 inches to a foot long, and from 1 inch to 2 inches in breadth. The underside is heavily laden with sori, which add materially to its effect. Brazil.

M. RETICULATUM.—Another very bold-growing plant and very effective, with fronds from a foot to 4 feet or more high, and a foot or more broad; the pinnae are large, some 9 inches long, and from 2 inches to 4 inches broad. It comes from various parts of South America.

M. DENTATUM is another species from Tropical America with pinnate fronds some 5 feet high, the pinnae numerous, each 6 inches or 7 inches long and 1 inch broad, leathery in texture, and light green. It is a free grower, and as a pot plant is somewhat coarse in appearance, but is charming when planted out.

M. SALICIFOLIUM.—A handsome Fern with pinnate fronds; they are each from a foot to 18 inches long, independent of the glossy straw-coloured stem; the pinnae are long and narrow, tapering at the base, and lengthened out into tail-like points at the ends; the sori large and conspicuous, occupying the greater portion of the underside of the pinnae. It comes from Singapore, and very much resembles another plant which I once saw in the Liverpool Gardens under the name of *M. angustifolium*, but this last-named species came from the West Indies, or from some part of the Western Hemisphere, notwithstanding which, however, it may be the same plant.

The Holly Fern (*Polystichum Lonchitis*) will not do well in a horizontal position. Its fronds form a kind of cup in which water is apt to gather. Growing naturally I have almost always found it covered by an overhanging piece of rock, and I have never had any difficulty in its cultivation since I have protected its crown in this manner.—F. W. HARMAN, Oakland House, Cringleford, Norwich.

Gymnogramma caudiformis (W. W.).—Yes, yours is the plant which was named and figured by Hooker under the above name, but, like yourself, I cannot understand where the affinity comes in. It is true it is put into the section *Selliguea*, but my

idea of *Selliguea* is that its relationship is with *Pleuridium*. From this last-named genus, however, the distinctions are but trivial. In your plant the rhizome is creeping, and should not be buried. It is a native of India and the islands in the Indian Archipelago, and requires stove heat. When grown freely it is a bold and effective Fern; the deep green of its leathery fronds and the copious deep brown sori render it a very ornamental plant.—W. H. G.

FERNS IN THE OPEN AIR AT FOTA.

In the gardens here, perhaps the most attractive part is the hardy fernery. The Tree Ferns have made splendid growth this season. The specimens of *Dicksonia antarctica* have each made heads of fronds from 9 feet to 10 feet across. I find that it takes several years to get them well established, and year after year they seem to improve. *Cyathea medullaris* started into growth very early in the season, and I was afraid that the tender fronds would have been cut off by frost, but I am pleased to say they escaped, and the plants are now looking well. *Woodwardia radicans* is a great favourite here. It sometimes loses its fronds in winter, but last year it escaped unharmed, and its new fronds are now spreading out for several feet under those of its taller neighbours. *Balanium culticum*, another Fern from Madeira, does well, but grows more erect than the *Woodwardia*. It is a most ornamental species. Several of the *Osmundas* are very ornamental, and perhaps the best is *O. Claytoniana*, a native of North America, and not so strong-growing as our native *Osmunda*. *O. cinnamomea*, another variety from North America, also does well. *O. japonica* and *O. regalis cristata* are well worth growing, and I find them useful for planting in front of the taller forms. *Onoclea sensibilis*, also from North America, and very like the *Osmunda* in growth, is a very ornamental Fern, and grows and increases freely.

Several of the *Cyrtomiums* do well here in the hardy fernery, and perhaps the most ornamental is *C. falcatum*. *C. carotidum* and *C. Fortunei* also do well and are very distinct. *Onychium japonicum* is quite hardy here. It is a most useful Fern to cut for vases. *Pteris cretica albo-lineata* also does very well with other hardy Ferns. In one corner of the fernery we have a small grotto set apart for Filmy Ferns. Our native *Trichomanes radicans* and *Todea pellucida*, *T. superba*, *T. Wilkesiana* and others give variety. Many of the dwarf Ferns fill the little nooks between the rockery stones. A few tall *Dracaena australis*, *Lilium giganteum*, which is now in flower, a few *Yuccas*, and the tall Tree Ferns give the place quite a tropical appearance. This rock garden is surrounded by large trees, which shelter it very much from high winds, and thus protect the more tender Ferns. W. O.

Fota, Cork.

Notes on Ferns.—Where Ferns of small or medium size are required in quantity for indoor decoration, it is requisite to keep pace with the propagation, for when the plants are kept for most of the summer in living rooms, halls, and such like places, they are usually so long before they take to moving freely again that it is often better to discard them and use fresh ones. For the purpose in question *Pteris tremula*, *P. cretica*, *P. serrulata*, and some of the better forms of crested *Pteris* with *Adiantum cuneatum*, *A. formosum*, *A. pubescens*, and others of like character are the most useful. Plants that were raised from spores sown last autumn and now in small pots should be moved into larger ones. Most of the kinds of *Pteris* named may be put at once into the pots they are to remain in. By the use of manure water given regularly during the season of active growth, there

is no necessity for giving them more than 6-inch pots, except when plants of extra size are required. Ferns of most kinds are not so particular in the matter of soil as some things are, but peat answers best. They grow away more freely in it than they do in loam, and where sufficient light is given, the fronds will have substance enough in them to enable them to stand and keep their bright fresh appearance for any reasonable length of time. In potting any Fern, at whatever time of the year the work is carried out, the roots should not be disturbed more than by removing the old drainage from the bottom of the ball. Finely broken crocks, sandstone, charcoal, or cinders should be mixed with the soil in moderate quantities in addition to sand. Drain well, pot firmly, and leave sufficient space for plenty of water to be given. After potting stand the plants near to the glass to admit of their getting the necessary amount of light to give strength and substance to the fronds. Use a thin shade in bright weather, with a moderate amount of moisture in the atmosphere and enough air to prevent the fronds becoming weak. Do not attempt to grow Ferns that have to be used in the way in question, or that are wanted for cutting under other plants. In private gardens this is sometimes done for want of room or for appearance, the Ferns being used as a setting for other things of larger growth, but where this course is followed the Ferns look poor, and are next to useless for the chief purpose for which they are required.—T. B.

BRITISH FERNS AT STREATHAM LODGE.

MR. COULHURST'S beautiful old-fashioned garden at Streatham is redolent with plants and flowers one rarely sees now-a-days. All sorts of old-fashioned, sweet-smelling flowers, including Pinks, Carnations, and Roses, are largely grown. In addition to the quantity of hardy plants, however, there is a fine representative show of the choicer and more popular plants, such as stove and greenhouse ornamental-leaved and flowering plants, Orchids, and Ferns. It is of the British section of the Ferns that I wish to say a few words. There is a large number indoors and out in the best possible health. Many species are grown, but amongst them all the Lady Fern (*Asplenium Filix-femina*) is largely represented, and the kinds mentioned below I would specially recommend to the notice of my readers who may be planting new ferneries, or replenishing those already established. One word of advice is necessary: do not overcrowd, and allow ample space for each kind to become fully developed.

A. FILIX-FEMINA GLOMERATUM.—A form much dwarfer than the original, with a large and dense crest on the end of the frond.

A. FILIX-FEMINA CORYMBIFERUM.—A large bold form, with dense crest on the apex, and ends of all the pinnae crested, very fine.

A. FILIX-FEMINA ELWORTHII.—Similar in its cresting to the last named, but a coarser plant.

A. FILIX-FEMINA APUEFORME.—A dwarf-growing variety, with more slender crests than the last, and a very fish-like outline to the fronds, hence its name.

A. FILIX-FEMINA APPLEBYANUM.—This is a beautiful form; the lower part of the frond has small, rounded, toothed pinnae, resembling the form known as *Frizellia*. Higher up the pinnae are more elongated, in which state it assumes the appearance of the variety *Fieldia*; the apex of the frond about 5 inches or 6 inches from the top becomes much-branched, and forms a dense heavy crest; the fronds are from 1 foot to 18 inches long, the heavy crests at the end giving them an elegant pendent character.

A. FILIX-FEMINA BALFOURI.—Fronds some 18 inches high and very broad; top heavily crested, and also all the pinnae. A bold, handsome form.

A. FILIX-FEMINA FRIZELLII.—A distinct and beautiful variety. The fronds are 1 foot or 15 inches long and pendent.

A. FILIX-FEMINA DEPAUPERATUM.—This, although an irregular form, is exceedingly beautiful. The apex of the frond is deeply lacinated and tasselled, forming a dense head. The pinnae are reduced and slightly tasselled.

A. FILIX-FEMINA THYSSANOTUM.—A truly beautiful form, of large size, and heavily crested.

A. FILIX-FEMINA MOOREI is a distinct and handsome kind and dwarf in habit. The fronds are about 9 inches long, and seldom reach to the length of 1 foot; the pinnae are reduced, irregular in size, usually multiplied at the ends, the frond measuring from 2 inches to 2½ inches across; the apex of the frond becomes branched, and forms a wide, flat, tufted head. It is a beautiful form, and worthily commemorates a man who worked so hard amongst the varieties of British Ferns.

A. FILIX-FEMINA MULTICEPS.—This is a strong-growing kind. The fronds are some 18 inches or 2 feet long, the pinnae and top beautifully crested, the former being deeply lacerated.

A. FILIX-FEMINA VICTORIE.—This, to my mind, is the most beautiful variety of any I have ever seen. It was originally found wild in Scotland, and no other plant, I believe, has ever been found. The spores of this plant, I am told, always reproduce the same plant, which, however, vary slightly in some instances, and one or two variations have been named. The pinnae branch close to the rachis, forming a widely-expanded letter V, these crossing each other on either side and becoming multiplied at the points.

The above kinds are all very beautiful.

The typical plant is the most beautiful of our native Ferns, and, indeed, holds its own against almost any tropical Fern for grace and elegance, and it is appropriately named the Lady Fern. It and its varieties are plants of easy culture in the hardy fernery; all like an abundant supply of water to the roots, but the drainage must be good. The Lady Fern does not like stagnant moisture, but Fern growers will do well to shade it or to plant it where it is sheltered from the early morning sun, and remember that—

Where the morning dew lies longest,
There the Lady Fern grows strongest.

This I can practically speak of, having wandered amongst breadths of it in most parts of the kingdom. I have found it very plentifully in Yorkshire, in the neighbourhood of Halifax and Luddenden Foot; also in Scotland and glorious in Ireland, which country has contributed some of the very best of the varieties which have been found in a wild state. W. H. G.

SOCIETIES AND EXHIBITIONS.

NATIONAL ROSE SHOW.

JULY 2.

IN brilliant summer weather the National Rose Society held its metropolitan exhibition, and the Crystal Palace, as usual, was the place chosen. The visit of the Shah necessitated an alteration in the customary arrangements, and the show was relegated to two comparatively small inconvenient tents, where in an insufferable atmosphere, through the crush, bad ventilation, and strong sun, the flowers quickly lost colour, freshness, and character. The exhibits were in one or two classes far too much crammed together, without a vestige of taste or eye to colour. The soft delicate shades of the finest Rose flowers paled against the glaring tints and colours of the tuberous Begonias brought into violent contrast—a medley of indiscriminate hues, each one killing the other, and resulting in a muddled, unsatisfactory effect. A Rose or Dahlia show never varies; it is the same one year as the other; just as stereotyped, and with little attempt to introduce novelty of arrangement or some plan to relieve the formality and monotony of rows of green boxes, filled with flowers all on the same level, and with little foliage to act as a foil and support to the colours. A great mistake was made in the first tent by placing the exhibits almost on the ground. It was impossible to see the flowers with any degree of comfort. A Rose show has this distinct disadvantage—it gives amateurs an opportunity of taking notes of the new or little-seen varieties which they do not happen to possess. Many failures can be attributed to this. Not the slightest idea can be obtained from a single flower of the habit, constitution, vigour, or hardiness of the variety it represents; it is placed on the board in its best possible phase, but there is nothing to guide the intending grower of it as to its character

in other ways. If the flowers were each cut with a good length of stem so as to show the foliage, vigour of the plant, and flower in its natural condition, some good lessons might be learnt from such a plan; but not as things are at present. A careful review of the Rose show of 1889 reveals a better quality in the flowers than one might have expected from several weeks' hot weather, and an unusually bright sun on the day before. The northern growers, as might be expected, came out strongly. Messrs. Harkness and Sons' (Bedale, Yorks) flowers showed surprising freshness; Messrs. Cocker and Sons, Aberdeen, were also successful; and in the amateurs' classes filled with perhaps the finest flowers of any, Mr. W. J. Grant, of Ledbury, exhibited matchless blooms, fresh, in fine character, and with plenty of substance. In the first and second prize stands the flowers as a rule were good, but there was a great falling off in many instances in the other exhibits, the dark coloured varieties showing unmistakable signs of distress from the recent hot weather. The classes that give greatest pleasure and make rich blocks of colour are those for twelve blooms of one variety, and these were happily well filled. We have seldom seen Merveille de Lyon or the beautiful rose-tinted Her Majesty in finer character; the massive flowers stood the heat well. And again we have to mention the success of Comtesse de Nadaillac, which was present everywhere, and in both the amateurs' and nurserymen's divisions was the premier bloom.

The great class in the nurserymen's division was for seventy-two distinct varieties, single trusses, and the keenest interest was centred in the competition. The Yorkshire flowers of Messrs. Harkness and Sons, Bedale, Yorks, carried off the trophy, but those of Mr. Frank Cant were not many points behind. In the winning collection were several poor blooms, but the following were characteristic, fresh and full: Mrs. Jowitt, Souvenir d'Elise Vardon, Niphetos, Amazone, Charles Darwin, Lord Macaulay, distinct for the peculiar iridescent violet shading over the flower; Mme. Alphonse Lavallée, Harrison Weir, Duc de Rohan, Comtesse de Nadaillac, General Jacqueminot, Mme. Angele Jacquier, A. K. Williams, Lord F. Cavendish, a fine purple-crimson coloured flower; Penelope Mayo, and John Stuart Mill. Messrs. J. Cranston and Co., Hereford, although not prize-winners, had in their uneven stand of flowers some excellent blooms, especially of Alfred Colomb, Prince Camille de Rohan, Auguste Rigotard, Ulrich Brunner, Merveille de Lyon, Etienne Levet, Duke of Wellington, and Duchess of Bedford. Messrs. Paul and Son were amongst the most successful of the southern growers; they were first for forty-eight distinct varieties, three trusses, showing flowers that were a credit to them considering the season. Here we could pick a charming flower of The Bride, the comparatively new Tea that has risen at a bound into favour; Mme. de Watteville in the fulness of its lovely pink shading of colour; Mme. Susanne Rodocanachi, a beautiful rose-coloured variety of peculiar brilliancy; Her Majesty, which was seldom shown badly; and the white Niphetos. The Colchester flowers of Mr. Frank Cant approached very closely those from Cheshunt, but the light coloured ones were much damaged. Marie Van Houtte (Tea) had its lovely shading well brought out, and there was a good flower of the Duke of Teck, a bloom of rich crimson colour, good shape, and handsome, and Francisca Kruger. We mention the third prize collection of Mr. B. R. Cant to refer to the flower of Mrs. John Laing, a variety shown well by him, and that promises to become one of the most popular of Hybrid Perpetual Roses. Messrs. G. Cooling and Son, Bath, were first for forty-eight distinct varieties, and they showed well Black Prince, Merveille de Lyon, Marie Rady, Dr. Sewell, Pierre Notting, and The Bride. Messrs. Keynes, Williams and Co., Salisbury, were second, and in the collection were such excellent types as Silver Queen, the new Rose in the style of La France; Bougère, a Rose of a cheerful salmon-pink tinge; and Souvenir d'Elise Vardon. The Oxford flowers of Mr. G. Prince won the prize in the class for twenty-four single trusses. Of course, the Tea varieties were as faultless as the season would per-

mit, but such dark-coloured Hybrid Perpetuals as Reynolds Hole and Xavier Olibo were not wanting in that rich depth of colour so distinct and charming. Mr. John Walker, of Thame, Oxon, had Ulrich Brunner and Maréchal Niel in good character. Ulrich Brunner has not come to the front so conspicuously as last season, but it was often shown and usually of average merit. In the corresponding class for three trusses of each variety, Messrs. G. and W. H. Burch, Peterborough, showed Teas well, such as Mme. Cusin, good for colour, Souvenir d'Elise Vardon, and The Bride; Messrs. Keynes, Williams and Co., who were second, having well finished flowers of Her Majesty, Fisher Holmes, Reynolds Hole and Mme. de Watteville.

The amateurs' classes were well filled, and one of the finest and most even stand of flowers in the exhibition was from Mr. W. J. Grant. Such blooms that had lost very little of their freshness and colour are worth special notice. The best were Lady Helen Stuart, Souvenir d'Elise Vardon, Etienne Levet, Prince Arthur, Victor Hugo, Marie Baumann, Niphetos, Earl of Dufferin, Reynolds Hole, Comtesse d'Oxford, Comtesse de Nadaillac, Jean Souperet, Anna Olivier, Ulrich Brunner, Caroline Kuster, Horace Vernet, Alfred Colomb, Duchesse de Vallombrosa, Beauty of Waltham, and Mrs. J. Laing. The trophy has never been given for finer flowers in such a season as the present. Again Mr. Grant was the most successful for 24 distinct varieties, three trusses of each, exhibiting flowers of delightful freshness and beauty, especially of Mme. Susanne Rodocanachi, Marie Van Houtte, Merveille de Lyon, Le Havre, Mme. G. Luizet, Marie Rady, Dupuy Jamain, and Alfred Colomb. Mr. S. P. Budd, Bath, also showed well. Another amateur who exhibited well was Mr. E. B. Lindsell, who came in first for thirty-six distinct varieties, single trusses. There were beautiful flowers of Marie Rady, Her Majesty, Victor Hugo, Viscountess Folkestone, Mme. Watteville, Marie Baumann, Dr. Andry, Innocente Pirola, Ulrich Brunner, Catherine Mermet, La Boule d'Or, and Prince Arthur. Mr. Lindsell was again the most successful prize-winner for eighteen distinct varieties, three trusses, and amongst them were exquisite flowers, full, fresh, and well coloured, the finest perhaps Merveille de Lyon, Niphetos, Caroline Kuster, Marie Rady, Horace Vernet, Catherine Mermet, Comtesse de Nadaillac, Innocente Pirola, Ulrich Brunner, La France, Louis Van Houtte—a magnificent gathering of even blooms. Mr. Geo. Christy, Westerham, was first in both the class for twenty-four and also that for twelve varieties. A very good lot of blooms was to be seen in the class for eighteen single trusses, and here the Rev. L. Garnett, Christleton Rectory, Chester, showed well, his flowers of Horace Vernet, Beauty of Waltham, Xavier Olibo showing marked finish. For twelve, Lieut.-Col. F. Standish Hore, St. Asaph, showed good blooms of leading varieties. In the extra classes, excellent flowers came from Mr. Bateman and Mr. C. J. Grahame, of Croydton; but, as a rule, the flowers in the smaller classes were sadly deficient in substance and freshness.

Tea Roses, unlike those of last year, were exceedingly fresh, and for the most part in excellent character. It is not surprising to see Mr. Prince head the list in the principal class, that for twenty-four distinct varieties. He had Comtesse de Nadaillac, a Rose he does particularly well; David Pradel, with its peculiar lilac tinge well brought out; Alba Rosea, Etoile de Lyon, Souvenir de Thérèse Levet, Innocente Pirola, Princess of Wales, Comtesse Panisse, Mme. de Watteville, Souvenir d'Elise Vardon, Mme. Lambert, Mme. Hippolyte Jamain, Mme. A. Jacquier, and Mlle. Marie Arnaud. Mr. Frank Cant had Niphetos, Souvenir de Gabriel Drevet, Catherine Mermet, Mme. H. Jamain, Edith Gifford, and Innocente Pirola in their best style. Messrs. J. Burrell and Co. had the best eighteen, having, amongst others, Luciole and The Bride. The classes for twelve single trusses of one distinct variety are always worth inspecting. Mr. G. Prince showed twelve lovely blooms of Comtesse de Nadaillac, and was placed first, and to give some idea of the perfection of this variety this season, Mr. Frank Cant was second, also with twelve good

flowers of it. Mr. Frank Cant did well in the Tea classes, as he was first for eighteen trusses, having a well-coloured flower of Mme. Cusin, with other leading varieties; Mr. G. Prince coming in second. Mr. W. J. Grant showed as well in the Tea classes as in those for Hybrid Perpetual flowers, and for eighteen varieties he was first, having Caroline Kuster in its full purity of colour, a Rose that has made a conspicuous mark this season. The second was the Rev. F. R. Burnside, who had David Pradel in excellent condition. We like this Rose when seen as this exhibitor had it. Mr. Lindsell had the best twelve flowers, and Mr. O. Orpen was second. Mr. W. J. Grant, the Rev. L. Garnett, and Lieut.-Col. Standish Hore were the principal prize-winners in the other classes for Tea-scented Roses. The Rev. F. R. Burnside showed Comtesse de Nadaillac in beautiful condition in the class for six single trusses of any Tea Rose, and Mr. E. P. Lindsell was second for the same variety. It says much for this exquisite Tea Rose that it should have been the prize flower in both nurserymen's and amateurs' classes.

A special prize was offered for an arrangement in an epergne, basket, or otherwise, of Tea Roses. A good exhibit was that from Mrs. Edward Mawley, Rosebank, Berkhamsted, who had the first prize for a tasteful, simple arrangement in a basket.

OPEN CLASSES are always interesting. None others tell us better the condition of the Roses or the kinds that are in their finest condition. Mr. W. J. Grant showed twelve beautiful flowers of Mme. Caroline Kuster in the class for one kind of yellow Rose; and Comtesse de Nadaillac was the flower put up by Mr. Frank Cant, the winner of the second prize. There was a very large competition for flowers of any white Rose, and we have seldom seen twelve better blooms of Merveille de Lyon than those from Messrs. Harkness and Sons. This variety was splendidly shown throughout. The Bride is another delightful Tea Rose, shown well on Saturday. The crimson Roses were fairly good. Messrs. Cooling and Sons had excellent flowers of Alfred Colomb, the colour deep and rich. This variety was also shown in the second prize stand of Messrs. Cranston and Co. The various exhibits for twelve flowers of the variety Her Majesty made a charming display of colour, as the massive flowers were of perfect colour, unblemished and fresh. Those from Messrs. Paul and Son were exceptionally fine. It is a pity this glorious Rose is practically scentless. A Rose without fragrance loses more than half its charm, and we are seeking colour, size, and shape more than fragrance—a grave error. There was just as many competitors in the class for Niphetos, but the exquisite freshness and purity of Mr. Frank Cant's blooms carried off the first prize, and presented a contrast to the somewhat damaged flowers to be seen in the class for twelve blooms of Lady Mary Fitzwilliam. Here Messrs. J. Cocker and Sons showed fine flowers of this first-rate variety. A. K. Williams was exhibited in as poor a condition as it was possible to show it. It is a variety that has not revealed its true character—unlike last year, when it was chief amongst the dark-coloured kinds. Mr. George Mount, Canterbury, showed good flowers of Marie Baumann, and in the class for any dark velvety crimson the good qualities of the beautiful dark flower S. Reynolds Hole were brought out to the full. Messrs. Paul and Son had grand flowers, as rich and handsome as any we have seen this season. The class for twelve blooms of any Rose not mentioned above gave an opportunity for a display of Tea varieties, and Mr. Frank Cant exhibited Mme. Watteville in charming freshness and colour. Mr. W. J. Grant had fine blooms of Ulrich Brunner.

An important class is that for twelve single trusses of any new Rose; and here Messrs. J. Cocker, of Aberdeen, were first with Lady Alice, the sport from Lady Mary Fitzwilliam. It is of a washy colour; as shown by them on Saturday, we do not like it. Mr. B. R. Cant had The Bride. In the corresponding class for twelve Roses, distinct, Mr. Frank Cant was first, and he had Viscountess Folkestone, Earl Dufferin, Grand Mogul, Her Majesty, The Bride, Mrs. John Laing, Duchess of Leeds (pink), Miss Ethel Brownlow, and Ye Primrose Dame, a soft

yellow flower of great beauty. All these are good kinds. In the stand of Messrs. Paul and Son was a flower of a variety named L'Ideal, a well-shaped Rose, neat, full, and deep copper colour, flaked and flushed with red.

A gold medal was offered for three single trusses of any Rose either not in commerce or not first distributed until the autumn of last year. This coveted award went to Mr. G. Prince for his new Tea and sport from Souvenir d'un Ami, named Souvenir de S. A. Prince, which has been described before in these pages. There were classes for Garden, Moss and Provence Roses, and Roses suitable for button-holes. Mr. J. Mattock came first. He had exquisite buds of such varieties as Souvenir de Paul Neyron, W. F. Bennett, Anna Ollivier, Ma Capucine, Mme. de Watteville, Innocente Pirola, Niphetos, W. A. Richardson, Homère, and Comtesse de Nadaillac.

The best flowers in the exhibition were in the nurserymen's division—the Hybrid Perpetual Ulrich Brunner, a noble bloom, shown by Messrs. R. Mack and Son, and the Tea Rose Comtesse de Nadaillac from Mr. G. Prince. In the amateurs' classes, Mr. E. B. Lindsell showed the Tea variety Comtesse de Nadaillac; and Mr. W. J. Grant the finest Hybrid Perpetual, a magnificent flower of Marie Baumann. In each case a silver medal was given.

Special prizes were offered by Messrs. Sutton and Sons and J. Carter and Co., the prize-winners' names appearing in the prize list.

A very fine collection of fruit came from Messrs. T. Rivers and Son, of Sawbridgeworth, including trees of St. Michael's Orange, Humboldt and Pine-apple Orange Nectarines, and The Czar and Cherry Plums, Cherry Bigarreau Monstreuse de Mezel, rich red; Black Hamburg Cherry, black; and fruits of several of the former. It was an interesting and pretty display of fruit. Mr. Gordon, of Twickenham, showed a group of Lilium auratum in fine varieties. Groups of tuberous Begonias were exhibited by Messrs. H. Cannell, of Swanley, and J. Laing and Sons, of Forest Hill. Carnations came from Mr. Charles Turner, of Slough; and Chrysanthemums in beautiful flower from Mr. W. E. Cass, Upper Norwood. The plants were well grown, the flowers large and pure; but we do not want Chrysanthemums now in the full summer. Mr. W. Taylor, Osborn Nursery, Hampton, had splendid flowers of Rose Her Majesty.

A full prize list is given in our advertising columns.

ROYAL HORTICULTURAL SOCIETY.

THERE was a very fair meeting of the fruit and floral committees in the Chiswick Gardens on Tuesday last, and a good list of interesting plants exhibited. After the business was concluded a meeting was held to protest against the recent decision of the council, who have seen fit to take into their hands the final awarding of the certificates. No plant can receive such distinction, as things stand at present, unless it has been passed by the council. This shows distrust in the committees' work. Either they are fit for their office or they are not. The members of the various committees were, in the first instance, selected by the council; then why question their awards after they have fully considered all the plants that may be submitted to them? It may be, and no doubt is the case, that some of the plants to which the committee have awarded certificates have never been seen by some members of the council. Then, how is it possible for these members to form any opinion as to the merits of the plant? It is absurd and improper for the council to question the awards of the committees, as if these bodies cannot grant them, for what are they called together? Such disputes weaken the society, already crippled by strife and division.

FIRST-CLASS CERTIFICATES went to the following:—

ONCIDIUM CRISPUM GRANDIFLORUM.—A well-named variety of a popular Orchid. The branching spike carried a number of unusually large flowers, almost entirely of the rich nut-brown colour characteristic of the type. It reminded one of O.

Marshallianum as regards size. Such a free and large-flowered variety should be valued. From Mr. T. Charlesworth, Heaton, Bradford.

CATTLEYA MENDELI DUCHESS OF MARLBOROUGH.—There seems to be an influx of white-flowered C. Mendeli, and this is an exceptionally pure form. It is not, however, quite pure, as there is a distinct, though very delicate, trace of pink in the sepals and petals. The finely-shaped lip is white, with the usual yellowish colouring within the throat. From Mr. Whillans, gardener to the Duke of Marlborough, Blenheim.

IRIS KÄMPFERI (LÆVIGATA) SIR G. MACLEAY.—There are several good white varieties of the late-flowering flag, and this has the largest bloom we have seen. It is not white, however, as there is a distinct lilac shading in the broad, rather thin falls. If there is a blemish in the flower it is a want of substance. This variety was imported direct from Japan by Sir George Macleay. Such a flower peering up through Rushes and aquatics by a stream or pond-side would have an unusual effect.

RHODANTHE MACULATA FL.-FL.—A pretty rose-coloured double variety of a well-known annual Everlasting. It should be made a note of by those in search of a finely coloured everlasting flower. From Messrs. J. Veitch and Sons, Chelsea.

RHODANTHE MACULATA ALBA.—A double white variety, and one that ought to be much grown. From Messrs. J. Veitch and Sons.

LILIUM PARDALINUM LUTEUM.—A good form of the old Tiger Lily. The flower has recurved segments, as in the type, and is rich yellow, spotted with deep chocolate. From Mr. T. S. Ware.

RETINOSPORA FILIFERA AUREA.—A golden variety of a well-known Conifer. The colour is decided, uniform, and suffuses more or less the whole of the foliage. Such a variegated shrub is not "spotty" in the garden. From Messrs. J. Veitch and Sons.

AWARDS OF MERIT went to—

CANTERBURY BELLS, DOUBLE AND SINGLE.—These were shown by Messrs. J. Veitch and Sons. The colours were varied and pretty, but the double Canterbury Bell is a monstrosity, and in the newer single varieties the flowers are far too large, coarse, and ugly.

CARNATION MRS. FRANK WATTS.—A self ivory-coloured border variety; the flowers are of good shape, size, and finish, and do not split the calyx. From Mr. T. S. Ware.

CAPSICUM CORAL RED.—This is a most promising ornamental Capsicum, the result of a cross between C. Prince of Wales and Chili Tom Thumb. A large batch of plants was shown, each having a good show of deep red conical fruits. There is always room for such decorative plants as these. From Mr. Mortimer, Farnham.

SWEET WILLIAMS.—This was a good strain of flowers named Auricula-eyed, sent by Mr. Walker, of Thame, Oxon. There were many colours, but the selfs we admire most. These are the richest and most effective.

The fruit committee gave a first-class certificate to each of the following:—

RASPBERRY HORNET.—A variety from Messrs. T. Rivers and Sons, Sawbridgeworth, and on trial in the Chiswick Gardens. It is a good cropper, and has large, handsome, deeply coloured fruits of excellent flavour.

PEA CONSUMMATE.—This, one of Mr. Eckford's raising, is an excellent variety of the Marrow class, the pods well filled with Peas of excellent table quality. It is one of the trial kinds in the Chiswick Gardens.

LETTUCE GROSSE PARESSEUSE.—This should have a simpler name. It is a good late Cabbage variety, tender, well flavoured, and with a firm heart, free from stalk. In a collection of over fifty varieties this stood the best. From Messrs. J. Veitch and Sons.

MELON COUNTESS.—This is a variety of the Hero of Lockinge class, the skin clear yellow, and the flesh white and juicy. We cannot have too

many first-rate Melons of the character of "Countess." From Mr. Goodacre, Elvaston Gardens, Derby.

A botanical certificate was given to Physosiphon Loddigesii, an Orchid with very inconspicuous brownish flowers. It scarcely deserved the award. From Mr. Tautz, Studley House, Hammersmith.

There were several exhibits before the committees worth noting, and amongst them the plants from Messrs. J. Veitch and Sons. A few sprigs of *Genista capitata* were shown, but sufficient to indicate the beauty of this Broom when 4 feet or 5 feet in height and in full flower. The flowers are yellow and the calyx hairy. Our gardens would be considerably beautified by masses of such delightful shrubs as these. *Hypericum coris* needs a greenhouse, but it is a pretty pot plant, slender in growth, and having small yellow flowers. A variety of *Cupressus nutkaensis*, named *argentea nova*, the foliage tipped with a silvery colour. Such variegated conifers should be used with caution. A better kind is *C. Goveniana*, shown in fruit. The growth is exceedingly graceful and slender, the colour deep green. Messrs. J. Veitch also had a mass of *Notospartium Carmichaeliae* in full bloom. This Broom-like plant is perfectly hardy, grows between 3 feet and 4 feet high, and at this season is studded with pretty pink-coloured, Pea-like flowers. A note on it will be found at page 21. Flowers of a Carnation, flaked with rich magenta on a white ground, came from Mr. J. Douglas, The Gardens, Great Gearies, and two varieties of not much apparent merit came from Messrs. Hooper & Co., Covent Garden. Mr. H. Little, Twickenham, showed a double white-flowered tuberous *Begonia* named *Perfection*. It very much resembled *Octavia* of Messrs. Cannell and Sons, having the same exquisite shape and purity. A group of new shrubby *Calceolarias* came from Mr. R. Brown, Handsworth, Birmingham, all the different kinds named. This is a mistake. Messrs. Lemoine & Co., Nancy, exhibited two good Ivy-leaved *Pelargoniums*, one named *Berthelot* having flowers of a rich shining carmine, large, and almost double, the other (*De Quatre-fages*) being bright magenta. The same exhibitor had three zonal varieties of promise. A variety of *Lilium auratum* named *Purity*, from Mr. W. Gordon, Twickenham, was an exceptionally pure form of this Lily, the flowers ivory-white and with a yellow band down the centre of each of the segments. Flowers of the Japanese Irises, now coming into full bloom, also came from Mr. Gordon. A few Sweet Peas from Mr. Eckford deserve comment, as no one has done more for this flower than he. Such varieties as Mrs. Sankey, white; Mrs. Hunt, delicate rose; Ignea, bright scarlet and mauve; Mrs. Gladstone, delicate pink; Purple Prince, rich purple; and Empress of India, white and rose, are typical of Mr. Eckford's best selections.

A large group of flowers came from Mr. Walker, Thame, Oxon, consisting of Sweet Williams, alluded to previously; Everlasting Peas in white and rich carmine, distinct colours, and *Zinnia grandiflora*, the flowers large, robust, and showy, especially the deep maroon, crimson, orange-scarlet, and orange colours. Mr. Charles Turner, The Nurseries, Slough, sent a stand of Carnation flowers, and a collection of annuals, comprising also Poppies and Sweet Peas, came from the Royal Horticultural Society's Gardens at Chiswick. Mr. Ware, Hale Farm Nurseries, Tottenham, had a group of hardy flowers, composed principally of Lilies, as *L. Krameri*, *Browni*, concolor, *davuricum*, *pardalinum* in variety, one named *Warei*, having self-coloured yellow flowers, and *chalcodonicum*.

Orchids were not plentiful. Mr. Charlesworth showed *Cattleya gigas Sanderiana*, a variety remarkable for the depth of colour and size of the lip; and a good form of *C. Mendeli*, the sepals and petals rose tinted, the lip bright magenta. An interesting group was that from Mr. Cowley, gardener to Mr. F. G. Tautz, Studley House, Shepherd's Bush. It comprised a white form of *Cattleya Gaskelliana*, a further illustration of the extreme

variability of this type of *C. labiata*; *Lælia callistoglossa*, the lip of the richest purple-maroon; *Miltonia vexillaria*, a dainty flower, small, rich rose, except for a staining of chocolate, surrounded by white in the centre; *Phajus Humbloti*, and *Houlletia odorata*, a sweetly scented Orchid, the flowers reddish brown.

A box of Rose blooms came from Messrs. William Paul and Sons, Waltham Cross, in which were beautiful flowers of the new Tea variety *Corinna*, described on p. 21; climbing Tea Pink Rover, the flowers large and pink; Spenser, which has large blooms of a salmon-pink colour; Salamander, good crimson colour and excellent shape; Marchioness of Lorne, previously described; and *Crimson Queen*, crimson.

FRUIT COMMITTEE.—Several exhibits of interest came before this body. Messrs. F. Rivers and Sons sent fruits of a reddish coloured Cherry named *Olivet*, and a black variety of luscious flavour, and pot plants of Tomatoes came from the Chiswick Gardens. They are noticed on page 33. Mr. Allan, Gunton Park Gardens, Norwich, sent splendid fruits of nine varieties of Strawberries, comprising John Powell, a scarlet fruit of large size; *Crimson Queen*, rich crimson colour; *Loxford Hall*, Countess, British Queen, Unser Fritz, Amateur, Dr. Hogg, and the dark coloured Waterloo. Strawberry Filbert Pine was sent by Messrs. W. Lovell and Son, Driffield. It is not a fruit we care about. Messrs. J. Veitch and Sons had, besides the Lettuce certificated, one named *Perfection*, a Cabbage variety of considerable merit. Chicory Asparagus came from the Chiswick Gardens; and Tomato Golden *Perfection* from Mr. Turner. This is a sport from *Perfection*, and like the fruit of that variety in shape, but of a pure golden yellow colour. Mr. C. Ross, The Gardens, Welford Park, had Grape Mrs. Eyre, a seedling from Black Monukka. The berries are of similar shape to those of that variety, white, and sweetly flavoured. A Pea named *English Wonder* came from Mr. W. Burbidge, Kenilworth. It has the appearance of a good variety, the pods not too large and well filled. Quality is the great point, however. Wood wool cut from Aspen wood, which is free from smell, was exhibited by Mr. George, of Putney. This is an excellent packing material.

Chiswick Horticultural Society.—The annual show of the local society was also held on Tuesday last in the Chiswick Gardens, now in their best summer dress. The exhibition was of the usual character, and throughout there was excellent competition. Fortunately, the weather, although threatening, did not prevent a large attendance. One of the principal classes, and on which most interest was centred, was for a group, the silver Jubilee cup to be the first prize. This had to be competed for three times until it became the property of the exhibitor. There was a sharp contest, but for the third time it went to Mr. Brown for a tasteful arrangement, in which Lilies, Orchids, and beautifully coloured Crotons were nicely worked in. Messrs. Fromow & Sons, of Chiswick, were second. Mr. Wright, gardener to Mr. Watts, Devonhurst, won the Veitch Memorial medal and £5 for a smaller group, excellently put up, and having *Hydrangea paniculata grandiflora* and *Oncidium flexuosum* as leading features.

Rubbish in pastures.—The manure-heap is frequently the depot for a great deal of rubbish that has no manurial value, and, as a matter of course, this gets, in due season, transferred to the land. As an instance of the trouble caused in this way it may be useful to relate a case of supposed illness in a steer that recently occurred in practice. A two-year-old bullock was observed to be standing alone in the field, refusing to graze, his tongue partly protruded; he was incessantly champing his jaws, and slaving profusely from the mouth. He was assumed to be choked, given a dose of oil, which went down freely, and turned out again to see if he would mend up. The animal obstinately refused to eat, and of course fell away; but, being a rough

beast, no serious attempt was made to examine him. On a veterinary surgeon being sent for, the animal was secured and his mouth examined by the aid of a proper gag, when it was found that a piece of roofing zinc was fixed between the jaw and the cheek. This, on being removed, was seen to be about 3 inches long by 2 inches wide, and, of course, effectually prevented any attempt to eat. We remember also another case of a heifer getting the greater part of the sole of a boot impacted in the molars, while instances of a similar character might be mentioned besides, all the mischief occurring from cattle having transferred pieces of iron, wire, nails, &c., to the rumen, from whence it has made its way to some vital organ and caused death. Matter of this kind should not be spread with manure on the pastures, and if such things are seen lying about they should be picked up and deposited in some place where they are not likely to do harm. —*Farm and Home.*

Mulching fruits and flowers.—The importance of this operation can hardly be over-estimated now that drought is once more visiting us, and in soils naturally light and well drained it is simply hopeless to attempt to grow good fruit or flowers without it. To keep the soil moist enough for any tree or plant carrying a large head of foliage in such weather as we have lately experienced, with a tropical sun and dry harsh wind combined, will necessitate such continual applications of water that the manurial properties of the soil will be very much exhausted. But by the aid of timely mulching applied over the surface before the soil parts with its moisture, a great saving may be effected. If tropical summers were the rule rather than the exception in this country, we should be far better prepared to combat them. As no one, however, can foretell, with any degree of certainty, the kind of season we are going to have, it behoves us to make the best use we can of temporary expedients to ward off the effects of drought when it does come. The year 1888 was a wet, sunless one, and mulching was not required; in fact many averred that it did more harm than good, but 1889, thus far, is quite of the opposite character, and mulching and watering are greatly needed at present, in most gardens, to keep the fruit from withering on the trees, and the flowers from withering in the bud. Manure only is not requisite, for anything that prevents evaporation is useful in keeping what moisture there is in the soil, or that which is supplied by watering.—*J. GROOM, Gosport.*

A variegated Potato was one of the exhibits before the fruit committee of the Royal Horticultural Society on Tuesday last. Such things have no use whatever, yet a stock had been apparently raised, for what purpose it is difficult to conceive.

Death of the Hon. and Rev. J. T. Boscawen.—It is with great regret we announce the death of the rector of Lamorran, Cornwall, in his 70th year. He has been rector of this Cornish village since 1849, and his own garden there was a true reflex of his horticultural tastes. Always interested in flowers, there were very few exhibitions or meetings of importance from which he was absent.

BOOK RECEIVED.

Report of the Botanic Gardens and Government Herbarium, Cape Town, for the year 1888.

Names of plants.—*E. Hurst.*—*Euphorbia lathyris.*—*A. C. Bartholomew.*—*Dendrobium Dalhousianum.*—*G. P.*—*Bourbon Rose Souvenir de la Malmaison.*—*Amateur.*—*Abelia rupestris*, *Clerodendron fragrans* (double flowered).—*J. L. Baldwin.*—*Quercus pedunculata*, *Q. p.* var. *heterophylla*.—*M. H. B.*—*Asperula hexaphylla.*—*Vicar.*—*Retinospora* sp., cannot name without fruit.—*Baskerville.*—1, *Rosa polyantha*; 2, *Spirea flagelliformis*.—*C. O. Miles.*—*Pancratium fragrans*, *Lilium* too much crushed to venture a name.—*P. Murton.*—*Sisyrinchium striatum.*—*C. D. Marr.*—1, *Lolium perenne*; 2, *Avena flavescens*; 3, *Calamagrostis lanceolata*; 4, *Poa rigida*; 5, *Melica nutans* var.

Names of fruit.—Strawberries: No. 1, *Auguste Nicaise*; 2, not recognised.

WOODS & FORESTS.

SUCCESSION OF FOREST GROWTHS.

THE following is from an address delivered lately by Mr. Robert Douglas before the Association of American Nurserymen:—

It is the prevailing and almost universal belief that when native forests are destroyed they will be replaced by other kinds, for the simple reason that the soil has been impoverished of the constituents required for the growth of that particular tree or trees. This I believe to be one of the fallacies handed down from past ages, taken for granted, and never questioned. Nowhere does the English Oak grow better than where it grew when William the Conqueror found it at the time he invaded Britain. Where do you find White Pines growing better than in parts of New England, where this tree has grown from time immemorial? Where can you find young Redwoods growing more thriftily than among their giant ancestors, nearly or quite as old as the Christian era?

The question why the original growth is not reproduced can best be answered by some illustrations. When a Pine forest is burned over, both trees and seeds are destroyed, and as the burned trees cannot sprout from the stumps like Oaks and many other trees, the land is left in a condition well suited for the germination of tree-seeds, but there are no seeds to germinate. It is an open field for pioneers to enter, and the seeds which arrive there first have the right of possession. The Aspen Poplar (*Populus tremuloides*) has the advantage over all other trees. It is a native of all our northern forests, from the Atlantic to the Pacific. Even fires cannot eradicate it, as it grows in moist as well as dry places, and sprouts from any part of the root. It is a short-lived tree, consequently its seeds when quite young and seeds abundantly; the seeds are light, almost infinitesimal, and are carried on wings of down. Its seeds ripen in spring, and are carried to great distances at the very time when the ground is in the best condition for them. Even on the dry mountain-sides in Colorado, the snows are just melting and the ground is moist where they fall.

To grow this tree from seed would require the greatest skill of the nurseryman, but the burnt land is its paradise. Wherever you see it on high, dry land you may rest assured that a fire has been there. On land-slides you will not find its seeds germinating, although they have been deposited there as abundantly as on the burned land.

Next to the Aspen and Poplars comes the Canoe Birch, and further north the Yellow Birch, and such other trees as have provision for scattering their seeds. I have seen acorns and nuts germinating in clusters on burned lands in a few instances. They had evidently been buried there by animals and had escaped the fires. I have seen the Red Cherry (*Prunus pennsylvanica*) coming up in great quantities where they might never have germinated had not the fires destroyed the debris which covered the seed too deeply. A careful examination around the margin of a burned forest will show the trees of surrounding kinds working in again. Thus by the time the short-lived Aspens (and they are very short-lived on high land) have made a covering on the burned land, the surrounding kinds will be found re-established in the new forest, the seeds of the Conifers, carried in by the winds, the berries by the birds, the nuts and acorns by the squirrels, the mixture varying more or less from the kinds which grew there before the fire. It is wonderful how far the seeds of berries are carried by birds. The waxwings and cedar-birds carry seeds of our Tartarian Honeysuckles, Purple Barberries, and many other kinds four miles distant, where we see them spring up on the lake shore, where these birds fly in flocks to feed on the Juniper berries. It seems to be the same everywhere. I found European Mountain Ash trees last summer in a forest in New Hampshire; the seed must have been carried over two miles

as the crow flies. While this alternation is going on in the east, and may have been going on for thousands of years, the Rocky Mountain district is not so fortunate. When a forest is burned down in that dry region it is doubtful if coniferous trees will ever grow again, except in some localities specially favoured. I have seen localities where short-lived trees were dying out and no others taking their places. Such spots will hereafter take their places above the timber line, which seems to me to be a line governed by circumstances more than by altitude or quality of soil.

There are a few exceptions where Pines will succeed Pines in a burned-down forest. *Pinus Murrayana* grows up near the timber line in the Rocky Mountains. This tree has persistent cones, which adhere to the trees for many years. I have counted the cones of sixteen years on one of these trees, and examined burned forests of this species, where many of the cones had apparently been bedded in the earth as the trees fell. The heat had opened the cones, and the seedlings were growing up in myriads; but not a Conifer of any other kind could be seen as far as the fire had reached. In the Michigan Peninsula, Northern Wisconsin and Minnesota, *P. Banksiana*, a comparatively worthless tree, is replacing the valuable Red Pine (*P. resinosa*) and in the Sierras *P. Murrayana* and *P. tuberculata* are replacing the more valuable species by the same process. In this case, also, the worthless trees are the shortest lived, so we see that Nature is doing all that she can to remedy the evil. Man only is reckless, and especially the American man. The Mexican will cut large limbs off his trees for fuel, but will spare the tree. Even the poor Indian, when at the starvation point, stripping the bark from the Yellow Pine (*P. ponderosa*) for the mucilaginous matter being formed into sap wood, will never take a strip wider than one-third the circumference of the tree, so that its growth may not be injured.

We often read that Oaks are springing up in destroyed forests where Oaks had never grown before. The writers are no doubt sincere, but they are careless. The only Pine forests where Oaks are not intermixed are either in land so sandy that Oaks cannot be made to grow on them at all, or so far north that they are beyond their northern limit. In the Green Mountains and in the New England forests, in the Pine forests in Pennsylvania, in the Adirondacks, in Wisconsin and Michigan—except in sand—I have found Oaks mixed with the Pines and Spruces. In North-western Minnesota and in Northern Dakota the Oaks are near their northern limit, but even there the Burr Oak drags on a bare existence among the Pines and Spruces. In the Black Hills, in Dakota, poor, forlorn, scrubby Burr Oaks are scattered through the hills among the Yellow Pines. In Colorado we find them as shrubs among the Pines and Douglas Spruces. In Arizona they grow like Hazel bushes among the Yellow Pines. On the Sierra Nevada the Oak region crosses the Pine region, and here and there Oaks reach far up into the mountains. Yet Oaks will not flourish between the one hundredth meridian and the eastern base of the Sierras, owing to the aridity of the climate. I recently found Oaks scattered among the Redwoods on both sides of the Coast Range Mountains.

Darwin has truly said, "The Oaks are driving the Pines to the sands." Wherever the Oak is established—and we have seen that it is already established wherever it can endure the soil and climate—there it will remain and keep on advancing. The Oak produces comparatively few seeds. Where it produces a hundred, the Ash and Maple will yield a thousand, the Elm ten thousand, and many other trees a hundred thousand. The acorn has no provision for protection and transportation like many tree-seeds. Many kinds are furnished with wings to float them on the water and carry them in the air. Nearly every tree-seed, except the acorn, has a case to protect it while growing, either opening and casting the seeds off to a distance when ripe or falling with them to protect them till they begin to germinate. Even the equally large seeds of other kinds are protected in some way. The Hickory-nut

has a hard shell, which shell itself is protected by a strong covering until ripe. The Black Walnut has both a hard shell and a fleshy covering. The acorn is the only seed I can think of which is left by Nature to take care of itself. It matures without protection, falls heavily and helplessly to the ground, to be eaten and trodden on by animals, yet the few which escape and those which are trodden under are well able to compete in the race for life. While the Elm and Maple seeds are drying up on the surface, the Hickories and the Walnuts waiting to be cracked, the acorn is at work with its coat off. It drives its tap-root into the earth in spite of Grass and brush and litter. No matter if it is shaded by forest trees so that the sun cannot penetrate, it will manage to make a short stem and a few leaves the first season, enough to keep life in the root, which will drill in deeper and deeper. When age or accident removes the tree which has over-shadowed it, then it will assert itself. Fires may run over the land, destroying almost everything else; the Oak will be killed to the ground, but it will throw up a new shoot the next spring, the root will keep enlarging, and when the opportunity arrives it will make a vigorous growth, in proportion to the strength of the root, and throw out strong side roots, and after that care no more for its tap-root, which has been its only support, than the frog cares for the tail of the tadpole, after it has got on its own legs.

There is no mystery about the succession of forest growths; nothing in Nature is more plain and simple. We cannot but admire her wisdom, economy and justness, compensating in another direction for any disadvantage a species may have to labour under. Every kind of tree has an interesting history in itself. Seeds with a hard shell, or with a pulpy or resinous covering, which retards their germination, are often saved from becoming extinct by these means.

The Red Cedar (*Juniperus virginiana*) reaches from Florida to and beyond Cape Cod; it is among the hills of Tennessee, through the Middle States and New England. It is scattered through the western States and territories, at long distances apart, creeping up the Platte River, in Nebraska. (I found only three in the Black Hills, in Dakota, in an extended search for the different trees which grow there. Found only one in a long ramble in the hills at Las Vegas, New Mexico.) Yet this tree has crept across the continent, and is found here and there in a north-westerly direction between the Platte and the Pacific Coast. It is owing to the resinous coating which protects its seeds that this tree is found to-day scattered over that immense region.—*Garden and Forest*.

Curious effects of lightning on a tree.—During the recent thunderstorms a large Elm tree was struck by lightning in a private park at Dulwich, but the only visible effects were linear interrupted grooves about $\frac{3}{4}$ inch deep, extending down one side of the tree to the ground, where two or three depressions some 3 inches deep were found. The bark is scooped out as clearly as if done with a gouge, and the intervals are from 1 foot to 2 feet in length, while the grooves themselves are from 1 foot to 3 feet in length. The grooves are now filled with mildew, which, I take it, indicates the death of the adjacent bark. I have often seen trees which have been struck by lightning, but none in which the effects have at all resembled those which I have described.—ALFRED S. GUBB, in *Nature*.

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No. 922. SATURDAY, July 20, 1889. Vol. XXXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

PURE STREAMS.

If there is one beauty in an English landscape, it is a pure clear stream or brook rippling over the stones. If there is one blot on an English landscape, it is a muddy, sewage-defiled stream. No; ditch is the only name it now deserves. But how common this defilement is. About every town there is the same curse, and the jerry builder as coolly drains into a stream as he does every other wrong thing. The wonder is that English landowners have allowed a clear stream—one of Nature's sweetest gifts—to be defiled. In numbers of cases the day when a stream was clear is easily remembered. Why has the owner of lands through or by which it runs ever allowed the vile desecration? My mind recalls streams about Dorking once pure, now foul, and a large millpond now filled with fermenting deposit which was once clear. At Steyning, in Sussex, they drain into a clear chalk stream, and it so runs across the country, carrying corruption along with it for a mile or two—a horrid ditch! At Lancing College, the entire sewage is clumsily allowed to ooze over the north slope of their hill, while below is a clear, delicious spring and stream and vale called Ladywell, into which some of it seems to be led, so far as symptoms demonstrate.

Why cannot some of our foremost men attack this evil? Why do not poets, artists, and physicians bring their force to bear heavily on it? How nobly Ruskin opens his "Crown of Wild Olives" on this subject!

But instead of this we shall have the tribe of defilers rise up against us as confiscators of their sacred rights of defiling if we begin the crusade. Let the crusade be begun; the sooner the better. How our earliest inhabitants worshipped our rivers and streams! What a fountain of the sweetest, noblest of ancient legend hangs round pure limpid streams! Every spring had its protecting deity, in the eye of the Greek. But where is the protecting spirit of our springs and rivers? It is changed into an avenging spirit of typhoid fever, and we dread going near to most of them. Instead of the present abominable custom, a hard, rigid inspection should be made of the course of a stream that it be not made a nuisance.

It would be well for landowners to see what powers they have over those higher up a clear stream to prevent its defilement. It seems hard to think that there is no vestige of control in this matter. And if not, then they might well and wisely seek such control. A.

Mina lobata out of doors.—Among the more attractive and interesting plants in flower in the open air at Kew just now is this elegant and pretty-flowered climber from Mexico, which has reappeared in our gardens in recent seasons. It belongs to the *Convolvulus* family, but is quite unlike an ordinary Bindweed, except in growth, as its flowers are not round and regular, but oddly shaped and coloured with scarlet and gold. Where it thrives in the open air it is a rapid grower and free flowering, and I have seen it in some warm southern gardens flourishing much better out of doors than in a greenhouse, which is commonly thought to be its proper place. The plants must be raised under glass and be strong before they are planted about the beginning of June. The soil must be rich and the spot not too much exposed to

winds. A few stout tree branches must be placed for the slender stems to ramble upon, and if the plant thrives it will soon cover the whole with foliage and flower. It is a desirable plant to grow, as it is so unlike other open-air flowers, and in autumn it is very beautiful, for by that time it gathers its full strength and flowers abundantly.

ROSE GARDEN.

ROSE-COLOURED ROSES.

THE flush of Roses is over, and the season of 1889 may be regarded as a short and brilliant one, in which many of the light Roses, a few of the dark types, and some of the finest of the Teas have flowered with unusual excellence. One class of Rose has suffered amongst the least of any from the scorching sunshine that burnt the strong colour out of the dark Roses, and expanded the flowers before they had time to fill their centres with firm characteristic petals. This is the rose-coloured section, a section that is lamentably weak in varieties of a pure rose colour, such as Marie Finger at its best gives us in its fulness, and which is a favourite and glorious colour when unmarred by any tint or trace of lilac or mauve shade that destroys the freshness, richness, and purity of otherwise good types. There are red Roses without number, crimsons of many shades, a few dark varieties, and a plenitude of pinks, but a conspicuous want of self-rose-coloured flowers of the clearest and most brilliant kind. Of white Roses there is a fair abundance, and though we have no true scarlet, there are many shades of it so rich and bright as to eclipse almost the telling colour of such a gem as Brilliant. It is difficult to determine which shall be called pure self-rose-coloured Roses, and some will possibly find fault with the selection given; but these, if not of faultless purity in their special line of colour, may be called self, by reason of their almost complete freedom from any foreign shade. Her Majesty is a Rose that may come into this selection. It is one of Bennett's noblest acquisitions, and this season has been exhibited in surprising condition, not coarse as usually seen. It rivals Paul Neyron, the largest of all Roses in size, but the more the rosarian becomes acquainted with it, so it appears its good points are brought out. It has a beautiful rose colour, a splendid cupped shape when of medium size, grand petal, and an absence of roughness, unless the flowers are unduly large. No blooms I have seen this season had such brilliancy of tint, perfection of form, and finish as those exhibited at the National Rose Society's show by Mr. Tayler, of Hampton, who grows his plants on heavy soil, not over rich. It may be this fact that accounts for their unusual finish. Possibly it is too much forced for the production of a few huge flowers, and shows its character best when treated purely as a garden Rose. It is a variety that does well with Mr. Paul, of Waltham Cross, who, however, regards it as uncertain in its blooming. The dwarf Brier stock is one upon which it is found to give good results. The flower has, however, one conspicuous fault, and that is an almost entire absence of fragrance. This is a serious loss, and is, unfortunately, characteristic of a few of the newer introductions. A Rose without fragrance has much to make up for. It must have splendid qualifications to last long in favour without this, I must say, essential trait. The free-growing and old-fashioned Victor Verdier is a Rose that may form one of the present number, though it is not of a true rose colour, as the petals have a purplish edging that scarcely enriches the rose-carmine tint of the centre; but

there is one of its progeny that has made a conspicuous mark this season, though hampered with a name that would have entirely destroyed the chance of success of a Rose less brilliant and distinct. This is Susanne Marie Rodocanachi, one of Lévêque's seedlings of 1884, and one of the strongest growing, if not the most robust, of the Victor Verdier family. It is a glorious Rose whether on the exhibition table or in the garden, perfect in its rich, shining, and penetrating rose colour that seems lit up when the sun shines fully upon it. It is very free, and produces both in summer and autumn a rich abundance of pure self rose-coloured flowers, that have a fine robust petal and a fulness without coarseness that delights everyone who loves a perfect Rose. There have been many excellent flowers exhibited at the shows this season, and that it should appear so remarkably well in such a fitful year says much for its vigour and constancy. Mary Bennett is another beautiful Rose that is constant and a good autumnal, a point of no small importance, but it has not the vigour of such a Rose as Susanne Marie Rodocanachi. It seems to do best on the dwarf Brier stock, and its flowers are of elegant expression, expanding well, so as to show in all its richness the glorious rose-cerise colour. If the plant had a stronger constitution it could be classed amongst the finest of Hybrid Perpetuals, but the want of this is a drawback. A rose-coloured Rose of great beauty is Mme. Gabriel Luizet, the colour soft, delicate, and refined, cupped in form, large and very sweet. It is one of the best of garden Roses; and another variety that needs no description, but which must be mentioned is Marquise de Castellane, which is of a beautiful rose colour, a good grower, free and vigorous. A Rose that is coming quickly to the front, though of recent introduction and one of Lacharme's best Hybrid Perpetuals, is Alphonse Souperet, a good grower as seen in the Waltham Cross Nursery, the flowers bright cherry-rose, and freely borne. The raiser's name is sufficient indication of its real worth. No Rose raiser has brought out so many good things as the late lamented Lacharme. Countess of Rosebery, a seedling of Postans, introduced to notice about 1879, is a beautiful shining rose-coloured flower of full excellent cup form and good foliage, coupled with which qualifications is a very sweet fragrance. It does not seem very constant, but it is of first rate colour, and on that account to be valued. Another particularly brilliant Rose is called Mme. Bois, that has some resemblance to Victor Verdier. The colour is of the brightest rose, in which we can detect a salmon shade that increases its richness. It is of a strong habit of growth and blooms freely. This is one of Levê's choicest seedlings. Of Marchioness of Lorne we have scarcely seen sufficient to justify a strong recommendation; but that it is a promising rose-coloured Hybrid Perpetual there is not the slightest doubt. It is one of Messrs. W. Paul and Son's new seedlings, and, judging from a number of plants in their nursery, it is a strong grower, with good foliage. It produces a plentiful supply of rich fulgent rose-coloured flowers that are slightly shaded with carmine in the centre; they are very sweet, of cupped form, but at present rather thin, a fault that may disappear with cultivation. It is an addition of no mean kind to the present section, so lacking in flowers of a self rose colour. Lady Sheffield, one of Postans's seedlings of 1881, is another vigorous Hybrid Perpetual, the flowers of a lovely rose tint; therefore a variety that should have become well established. Its flowers have the fulness and finish of those of a first-rate Rose. Mme. Charles Crapelet must

receive mention; though it was raised by Fontaine as far back as 1859, yet it is not beaten in its own line of colour, which has more red in it than many of the varieties recorded in this selection. The flower is large, full, and of good form. Another old Rose too good to be omitted is Anna de Diesbach, a beautiful flower when its fresh and brilliant rose colour is well seen, but the clear telling rose shade is its chief charm, as the flower lacks fullness and finish—essential qualifications in a Rose of the first class. Queen of Waltham is one of Messrs. Paul and Son's introductions, and a variety of vigorous growth, the flowers bearing a resemblance to those of Lady Sheffield in colour, which is a soft cherry-rose, delightful for its distinctness and richness. Heinrich Schultheis is well known for its vigour of constitution and brilliant flowers, which can scarcely be called rose, as they have a distinct pinkish shade. But they are as much rose as pink, and this variety may, with propriety therefore come into the present list. A beautiful rose-coloured variety and a recent seedling of Lévêque, is Comtesse de Paris, a pure rose-coloured flower without a blemish in form, expression, or finish. It has the great merit of being a good autumnal, a valuable characteristic in a Rose.

These are a few of the brightest, clearest, and richest of the self rose-coloured Hybrid Perpetual varieties, but there are others; and it would interest readers of THE GARDEN wishing for information on Roses in general, and this section in particular, to learn of any other good types that may be added, provided that these are vigorous in growth and have self-coloured flowers. The pink-coloured Roses will be taken next, of which La France is a type, and notes on these will be of interest to many. C.

SHORT NOTES.—ROSES.

The rain has spoilt the Rose flowers for a season. In a large Rose nursery the other day it would have been difficult to cut a decent bunch. But the brief respite from strong sunshine will help the plants to make a good autumn bloom.

Brilliant is a charming Hybrid Perpetual for the garden only. It is not an exhibition variety, as the flower is too small, but it is of the brightest crimson-scarlet colour. It is one of Messrs. William Paul and Son's acquisitions, in whose nursery we saw it recently.

Rose York and Lancaster.—There are other differences between this Rose and Rosa Mundi besides one of flowers only. In the York and Lancaster the thorns are long and the growth more robust, while in Rosa Mundi the stems are covered with prickles and the habit is dwarfier. The first of the two is a Damask Rose, the other a Gallica.

Grace Darling is a charming Tea Rose that improves on acquaintance. It is one of Mr. Bennett's choicest introductions, the flowers of a charming white, softly touched with the palest of salmon-rose shades, which deepens at the edges of the petals. It blooms early and continues late. A bed on the turf in the Waltham Cross Nursery showed its freedom and vigour.

Mme. Hoste is a Tea Rose that, although new, has, through its undoubted merits, become comparatively common. It is one of Guillot's seedlings of 1887, and there is a large bed of it in the Waltham Cross Nursery on the Brier stock. The flowers are of good size, excellent form, and self-yellow of a charming shade. It has been shown well this season, and also proved itself a good autumnal last year.

Rose Mme. Plantier makes a splendid standard Rose. It has been loaded with flowers at Kew, the branches almost breaking with the weight of their lovely burden. There are some noble specimens of it on the turf in the Waltham Cross Nursery, the large heads many feet across, luxuriant, and smothered with the double white flowers. It is a grand Rose for massing.

A new climbing Rose.—This is called Pink Rover, and for which we have to thank Messrs. W. Paul and Son, of Waltham Cross. It was shown well by them this season, and has large well-built flowers

that remind one of those of Souvenir de la Malmaison as to colour. This is of a fine shade of pink, deeper in the centre of the flower. In the bud it is extremely pretty and delicate. Coupled with these qualifications is a good climbing habit.

Rosa moschata.—More generally known under the specific name of Brunoniana than that of moschata, this is one of the finest single Roses that we possess, for when allowed to ramble over some support such as a neighbouring bush, it will flower profusely. It is of rapid growth, and though in some districts liable to be injured by exceptionally severe winters it usually quickly recovers.—T.

Polyantha Roses.—There is a beautiful batch of Polyantha Roses on the De la Grifferaie stock in the Waltham Cross Nursery, the plants covered with the small, pretty flowers. They make a good growth, and all the varieties are grown, such as Perle d'Or, the pretty pink Mignonette, the double white Anna Marie de Montravail; Gloire de Polyantha, bright rose, centre white; and Blanche Rebatel, a deep crimson flower and very free.

Reine Marie Henriette.—Can "T. W. G." or any other of your correspondents learned in the history of Roses kindly tell or refer me to the origin of this Rose, its parentage, &c.? The origin and history of our best garden Roses would form a very interesting subject, and I am sure many Rose growers would like to have an authentic history of such Roses as the following: Maréchal Niel, White Provence, Devoniensis, Souvenir de la Malmaison, Gloire de Dijon, and many other standard sorts I need not name. I am very anxious to learn the history of Reine Marie Henriette.—F. W. B.

A bed of Polyantha Roses is one of the best things of its kind in the Royal Gardens, Kew. There is a large group near the greenhouse, the plants small, bushy, and apparently on their own roots. The varieties selected are White Fairy, which has large double white rosette-shaped flowers—it is a vigorous grower; Gloire de Polyantha, deep rose; Little Dot, white, with just a tinge of salmon in it; Perle d'Or, nankeen-yellow, centre orange; George Pernet, deep rose; White Pet, white; Floribunda, flowers rose, but rather thin; and Mlle. C. Brunner, rose.

Waltham Climbers.—There are three seedlings of Gloire de Dijon Rose at Waltham Cross known as Waltham Climbers, 1, 2, and 3, all of which bloom abundantly and continuously until autumn, and give shades of colour we want more of in the climbing Roses. The colour is shades of red, brightest in No. 1, and darkest in No. 3. If one only is wanted, that should be Waltham Climber No. 1, a valuable hardy crimson-coloured climbing Rose with excellent foliage. Now that more interest is taken in climbing Roses, we hope to find such acquisitions as these in all good gardens. There are plenty of climbers with light-coloured flowers, but good red kinds are scarce.

Rose Her Majesty.—There is a great tendency on the part of this fine Rose to come very coarse; indeed, it has been found this season rivaling Paul Neyron in dimensions and in roughness. The most beautiful flowers of this Rose I have yet seen were exhibited by Mr. W. Tayler, of Hampton, at Twickenham the other day. They were real cup-shaped, of exquisite form and finish, and of good size. Mr. Tayler stated that the plants were growing on heavy, hard soil, which also was not too rich. Nurserymen generally show us blooms from bud growths; probably we shall see better flowers of Her Majesty when they are produced in gardens on plants under ordinary conditions. The variety has come out in remarkable form, and reflects lustre on the reputation of Mr. H. Bennett, the raiser. But all the same, I think the real merits of Her Majesty will be better displayed when it becomes a widely-grown garden Rose.—A. D.

Rosa gigantea.—A great deal was said about this newly introduced Indian Rose at the Rose conference held at Chiswick recently, and from the description and specimens shown it is evidently a really gigantic single-flowered Rose. At present we are interested only in the fact that at Kew we saw recently some strong plants of this Rose raised this year from seeds received from India. The seeds were sown in a tropical house in

January, and the seedlings removed into a lower temperature as soon as they got above the soil. Some of the plants are now a foot high and are growing vigorously. Of course the Rose breeders will not be happy until they have got a double form of what at present must be a magnificent single Rose, but, for the sake of posterity, we hope they will not succeed. It may be added for the information of those who do not know this Rose, that it has pure white flowers each 6 inches across.

Rose names.—The fact that the Rose Her Majesty has an English and readily understood name is almost certain to make it popular, but all Roses, especially those with long French names, cannot claim such a distinction. I noted in Messrs. Veitch and Sons' stand at the recent Ealing show a glorious flower of Gloire de Bourg-la-Reine, but, let a Rose be ever so beautiful, it is to some extent handicapped by such an intolerably long name, and reporters too often carefully omit mentioning it. Would it not be possible for our home traders, in selecting French Roses, to have these abominably long names revised, and, still further, to some extent anglicised.—A. D.

Pegging down Roses.—I fully agree with the editorial remarks at p. 20 with reference to the free flowering of Roses when pegged down, as we have for years had beds of them treated in that way, and the plants bloom almost the entire length of each shoot. These we lay in fresh every year, cutting out all those that have flowered, but we never shorten back, and do nothing more than just prick over the surface of the soil and give a top-dressing of manure. This is left as a mulching and to rot away as it will, as it is not seen after the plants are in leaf. Another advantage in having Roses pegged is that the bare ground is always covered, which is never the case otherwise, unless the plants are closer together than is good for them. The plants also increase in strength, as there is no restriction to growth. There is no doubt but that some sorts are better adapted for this work than others, but most of the Hybrid Perpetuals are suitable, and the less pruning some of these get the better. This, of course, only applies to such as are not grown for prize blooms, as the pegged-down ones produce a quantity of flowers, and therefore make a grand show.—S. D.

Roses on old trees.—What magnificent objects Roses are on old trees, that is, when proper sorts are chosen and a little trouble is taken in the planting of them, as then they grow with great freedom and send their long shoots up and over every branch where they can find support. The most suitable stumps to plant the Roses against are those of the Oak, as they do not produce much, if any, surface root, but any tree going into decay or that is half dead or shabby will do, as all that is wanted is a frame or support for the Roses. With regard to sorts, any of the hardy rampant climbers are the kinds to use, and they look well blended in colour, the bright with the pale, such as Cheshunt Hybrid and Aimée Vibert, or any of these shades, or Clematises and the pale Roses make a fine contrast. The way to give them a good start is to well break up the ground where they are to be planted and to work in a heavy dressing of rotten manure, and the same if Clematises are to be grown but if the soil is poor and bad, a large hole should be dug out and some fresh put in, as much depends on the way they are treated at first and the attention they get at that time. Those wishing to commence now should obtain pot plants and turn them out. Most growers of Roses for sale supply these, and Clematises may be had in any quantity, Jackmanni being one of the best.—S. D.

Bredia hirsuta.—This pretty Japanese shrub does not seem to be much known in private gardens, but making as it does such a neat little plant for the conservatory, it is a wonder it is not more grown. It thrives best in rich light soil, but should be kept in small pots, as it never grows more than 6 inches or 8 inches high. The flowers, which are produced in great profusion, are of a pretty rose-pink colour. Some plants of it are now in bloom in the greenhouse at Kew.—G.

TREES AND SHRUBS.

PINUS INSIGNIS.

HAPPY indeed was the great traveller and collector, David Douglas, in his selection of a name for this beautiful Pine, for of all the Conifers hitherto introduced to this country, *Pinus insignis* is certainly most remarkable—remarkable, when planted as a lawn specimen, for its easy and graceful style of growth, with its densely clothed branches resembling emerald green carpets sweeping the turf or forming im-

but not least advantageous, it is remarkable for the magnificent growth which it makes when exposed to the sea breeze.

Pinus insignis is a native of Lower California, from the coast in the neighbourhood of Monterey to San Antonio. It resembles its companion, the beautiful *Cupressus macrocarpa*, in its excitability, since it starts very early in the spring and continues growing until late in the autumn, sometimes quite up to Christmas; therefore it cannot be regarded as a reliable tree in all parts of this country. Indeed, this Pine and



The Monterey Pine (*Pinus insignis*). Engraved for THE GARDEN from a photograph sent by Miss Nutcombe Gould, Bovey Tracey, South Devon.

mense whorls of foliage as they start from the trunk further from the ground; remarkable for the colour of its grass-green leaves, three in a sheath, slender, thread-like, twisted, and upon healthy specimens about 6 inches in length; remarkable, too, for its whorls of large, handsome cones, grass-green at first, but when fully ripe a bright brown, obtuse at the base, pointed at the apex, but unequal in contour, the exposed side being fully developed, whilst the other is compressed and flattened, possibly in consequence of the imperfect fertilisation of the flowers; last,

the Monterey Cypress were so severely injured by the frosts of 1860-61 that planters, although they can find nothing to touch them in point of colour, now give them a wide berth inland. Nevertheless, in some parts of the country—south of London, west of Gloucester, and in North and South Wales—they make most magnificent growth, especially when sheltered from north winds in a site exposed to the saline atmosphere of the sea. Here, at Eastnor, these two trees—I cannot dissociate them—were made the trees of the place, and whilst those below a

certain level were killed by the terrible frost of 1860-1, others above that line entirely escaped. One group of trees, thirty-six in number, planted very high on stiff clay and exposed to the full force of the western gales, did not even put on the proverbial brown tint, but made leaders from 3 feet to 5 feet in length the following year, and some of them now equal the grand Devonshire specimen, of which the annexed is a faithful engraving. Introduced by Douglas in 1833, the tree under notice was planted in Miss Nutcombe Gould's garden, Knowle, Bovey Tracey, forty-five years ago, and so extraordinary has been the growth that the following notes may prove interesting: Height, 59 feet; widest spread, 54 feet; girth at 5 feet from the ground, 11 feet; and cubical contents of timber, 140 feet. Figures like these must prompt all lovers of Conifers to give this beautiful grass-green Pine, if not a first, possibly a second, or even a third, trial; but before doing so, I would ask them to become thoroughly acquainted with the conditions conducive to success.

This Pine will grow freely in almost any well-drained loam, peat, or brash; but that which suits it best is a deep limestone soil free from stagnant moisture. It is not adapted to low-lying flat tracts inland, as there the foliage is sure to become brown and unsightly in consequence of piercing winds, if the frost of sharp winters does not kill it. In such localities it will thrive best if planted on the west sides of lofty ridges, and then it must be sheltered or nursed on north and east by other and hardier Conifers. Being a native of the Californian coast, altitude in our maritime counties is of less consequence, but there even it should have shelter from cutting north and east winds, and certainly room for development. On no account should trees whose roots have become corkscrewed in pots be preferred, as these in course of time will be blown down or bring about their own destruction by strangulation. If, however, pot plants are the best at command, they should be turned out and soaked in a tub of water until all the soil has become loose, when the roots can be uncoiled previous to planting. A stout stake having been driven firmly into the ground to support the stem, each root may be pegged out with wooden pegs, covered with fine loam, watered home and finished off precisely as we manage our choice fruit trees.

When in the early stages of their growth these trees frequently suffer from the attacks of the Pine beetle (*Hylurgus piniperda*). This insect is readily detected by the young shoots suddenly drooping and sometimes falling off early in June, and if left alone it soon spoils the most promising specimens. In order to arrest the progress of this troublesome pest, each affected shoot of the young tree should be cut off and burned. Some years ago, when our trees were from 20 feet to 30 feet in height, they were attacked by this beetle, but by persevering for two or three years in succession we eventually got rid of it. W. COLEMAN.

Escallonia Phillipiana.—This is very distinct from the other *Escallonias* cultivated in our gardens, and though introduced from Valdivia about fifteen years ago, it is still not grown to anything like the extent it should be. It is now one of the prettiest little shrubs we possess. It forms a free, much-branched bush with small dark green foliage, and is so thickly studded with blossoms as to be when in full bloom quite a mass of white. The flowers, and, in fact, the whole plant, remind one of some of the Australian *Leptospermums*, but it really is in no way related to the Myrtle family, which includes the *Leptospermums* and allied genera. This *Escallonia* is perfectly hardy, and cuttings of it will root if put in a frame at any time during the summer

months. If kept close and shaded the cuttings will strike before winter, that is if the weak and medium shoots only are chosen for the purpose, as the strong and succulent ones are far more liable to decay.—T.

FLOWERING APPLES.

A LARGE number of the so-called "flowering" Apples are now at their best. They flower usually ten days later, but the unprecedented heat of the last few days has forced many plants into bloom long before their time. These small Apples, taken as a whole, surpass all other trees here in floral beauty at this particular period of the year, and there are no more satisfactory plants for the May decoration of the lawn or the shrubbery. They flower profusely, at least most of the varieties do, year after year; they are indifferent to cold, to heat, or to drought, and they do not grow unmanageably large. They like rich soil, and well repay generous treatment.

It is hopeless, and certainly not necessary, in these notes, to try to unravel the intricacies of the synonymy of the Apples, or even to refer in every case the cultivated forms to recognised species. The species of Apples, their origin and distribution have puzzled the best-equipped botanists, and no two of them have ever held quite the same views with regard to these plants.

There is a very large number of these Apples in the arboretum, gathered during many years from the best European collections and raised from seed obtained from all available sources. Speaking broadly, they may be referred to four types. There are, first, the varieties of the common Apple,

PYRUS MALUS,

which are generally recognisable by the light grey bark, pale leaves, which are, with the petioles and shoots, woolly-pubescent on the lower surface while young, and by the minute, scale-like bract on the peduncle. There is a handsome variety with double flowers; others with pendulous branches or with dwarf habit, and one curious one with shrubby habit, narrow leaves, and small fruit less than an inch in diameter, and persistent upon the branches until after the flowering time the following year.

PYRUS SPECTABILIS

is a well-marked species not difficult to distinguish—at least in the double or semi-double-flowered form, the only one apparently now known in cultivation. The flowers were figured in this journal last year (i. 272, f. 214), and there are coloured plates in the "Nouveau Duhamel" (vi., t. 42, f. 2) and in Watson's "Dendrologia Britannica" (i., t. 50). It is one of the handsomest of the whole race, and one of the most profuse and persistent bloomers. It is a shrub-like tree, reaching a height of 20 feet, and characterised by the upright habit of growth of the branches, which give to fully grown specimens a sort of vase-like form. The bark is reddish brown. The flowers are rose-coloured or pink and white, and delightfully fragrant.

A large proportion of the Apples in the collection are best referred to

PYRUS BACCATA.

These plants vary, except in the deciduous calyx, remarkably among themselves, and in looking at some of the extreme forms it is hard to realise that they may be referred to a single species. The habit, flower, foliage, and fruit are all different, the last varying in size from a diameter of nearly three-fourths of an inch to one of less than one-eighth of an inch. But

with all the forms before me it is impossible to find any real distinguishing characters in them, except the deciduous calyx. *Pyrus baccata* is itself a widely distributed species in Siberia, through Northern China to Japan, and in the Himalayas. It has long been cultivated not only in Europe, but from time immemorial by the Chinese and Japanese, so that it is not surprising that innumerable forms have been developed, especially as all the Pomaceæ show a remarkable tendency to seminal variation. The most beautiful of the various forms, referred here to *P. baccata*, are those of Japanese origin, known in gardens as *Pyrus Malus floribunda*, and its double-flowered variety introduced into this country by Dr. Hall, and variously known in American gardens as *P. Parkmanni* or *P. Halleana*. It seems identical with the plant grown in Europe as *P. spectabilis* Kaido. These Japanese Crabs are low, bushy trees, with dark brown bark, branching from the ground, growing to a height perhaps of 20 feet, and spreading to a breadth of 20 feet or 25 feet. When they are in bloom they are wonderful objects, the branches being entirely covered with the flowers, which individually are not large and barely more than an inch across when fully expanded. The buds are crimson and very showy, so that the plants are perhaps more attractive just before the flowers open than at any other time. The flowers, when they expand, are pink, and then gradually fade to white before the petals fall, the effect of the white masses of flowers being often set off by a few unopened buds near the ends of the branches. The fragrance is powerful and delicious, and may be perceived for a long distance when a large plant is in bloom. The fruit is minute, the size of a Pea, dull coloured, and devoid of beauty. In the semi-double form the petals are deep rose-coloured, the calyx dark red, and the young leaves purple. Among other forms of what are taken here to be varieties of *P. baccata* are several plants of very great ornamental value, with yellow-brown bark, symmetrical, arborescent habit, rather thin leaves, and large, pure, snow-white, fragrant flowers, each nearly 2 inches across when expanded, and small fruit. They have been raised principally from seed derived from the St. Petersburg Garden, and sent under several different names. There are in the herbarium wild specimens gathered in the northern island of Japan which are identical with some of these forms.

PYRUS TORINGO

is a Japanese shrubby species which grows well here. The leaves are sharply and deeply cut and often three-lobed; they are pubescent, as are the shoots when young; the flowers are smaller than those of the other Apples, and the fruit is minute, with deciduous calyx lobes. *Pyrus Sieboldi* of gardens seems to be a form of this, still smaller in all its parts. Neither of these plants, except in this pubescence and in the shape of the leaves, are readily separated from *Pyrus baccata*.

PYRUS PRUNIFOLIA,

or a number of plants, which seem more readily referred to that species than to any of the others, are the last of the series. *Pyrus prunifolia* is itself a doubtful plant, doubtfully known in a wild state, although generally credited to Siberia. According to Regel it is found in the Baikal, and to Karl Koch in North China, Tartary and Southern Siberia. It has been cultivated for more than a century, and is the original of the garden Crabs; and if really a wild plant, it has been greatly changed by cultivation and by crossing with varieties of the common Apple. What are considered here

forms of this plant are stout bushy trees branching from the ground and forming broad masses of foliage some 20 feet high by as much through. The bark is brown or grey-brown, considerably darker than that of the common Apple tree. The leaves are, like the shoots, pubescent when young, especially on the lower surface. The flowers are larger than those of the other Apples, being fully $2\frac{1}{2}$ inches across the expanded petals. They are pure white in some individuals, rose-coloured fading to white in others, and very fragrant. The fruit is from half an inch to an inch in diameter, bright scarlet on some individuals, clear yellow on others. The fruit retains its shape and colour until winter, and remains upon the trees until the following spring. These trees flower much less freely than the varieties of *P. baccata*, and do not flower equally well every year, owing, perhaps, to the presence of some *Malus* blood, which it seems possible to trace also in the character of the pubescence and the colouring of the young leaves.

Considered from the point of view of ornament, the most valuable of all these Apples, as flowering trees, are the Japanese Crab (*Pyrus Malus floribunda* of gardens) and its double-flowered variety (*P. Parkmanni* or *P. Halleana* of gardens); next in value is the Chinese Crab (*Pyrus spectabilis*), then various large-flowered varieties of *Pyrus baccata*, the varieties of *Pyrus Malus*, *Pyrus prunifolia*, which is the only species with ornamental fruit, and the only one, therefore, valuable for autumn effects, and, lastly, *Pyrus Toringo*, which is rather curious than really beautiful.

The North American Crab,

PYRUS CORONARIA,

does not bloom until several weeks later, but flowers here profusely. The flowers are individually very large, pale rose coloured, and more fragrant than those of the other species. The fruit which hangs from long, slender stems is ornamental, highly coloured, and very fragrant. *Pyrus coronaria* is a desirable plant for the garden, both for its flowers and its fruit.—*Garden and Forest*.

PAULOWNIA IMPERIALIS.

THE healthy appearance of a specimen 40 feet high of the *Paulownia imperialis* on a well-kept lawn on the outskirts of London showed how well adapted this somewhat rare Japanese tree is for ornamental planting. The immense leaves and panicles of fragrant purplish violet flowers render the *Paulownia* one of the most distinct and interesting of hardy trees; for although it blooms but rarely, few genuine examples of the tree having been killed outright by a severe English winter are on record. Unfortunately, the flowers open too early, that is, generally speaking, for our climate, and unless the previous year's growths have been well matured, the winter rather mild, and the spring an unusually fine one, the showy blooms of the *Paulownia* will not open. Imagine leaves each 25 inches long and nearly 23 inches broad covered with a greyish tomentum, and we have some idea of those produced by a healthy and rapid-growing *Paulownia* in the south of England.

This handsome tree, when the foliage has become perfectly developed, and before the change from the light fulvous green to that of a darker hue comes about, is very pretty.

Like the *Catalpa* and *Acacia*, the *Paulownia*, if cut over near the ground, sends out in one season immense shoots, each 5 feet or 6 feet long, these being nearly as thick as one's wrist.

One of the largest specimens of the *Paulownia* in this district is nearly 40 feet high, and girths fully 8 feet above the swell of the roots. This is the result of about forty-five years' growth.

Judging from how well the large tree that I was privileged to see in all its beauty, hardly a fort-

night ago, looked with its bright, healthy, and abundantly-produced foliage, it was quite evident that neither a special soil nor site were necessary for its perfect and complete development, for the soil was of very ordinary quality and the situation fully exposed on all sides, though at the same time sheltered from the worst winds of the particular district in which the tree was growing.

Japanese Conifers and trees generally are somewhat tender in early life in this country, and the Paulownia is no exception to the rule; but for all this, when favourably situated, it rarely declines to grow freely enough, and occasionally, when peculiar climatic influences suit it, cheers us with its abundantly-produced and highly-attractive flowers.

A. D. WEBSTER.

CALIFORNIAN LILACS.

ONE of the most prominent, as well as ornamental, shrubs of the Santa Cruz coast range of mountains is the *Ceanothus* in its various forms and species. As early as January some flowers begin to appear. But May is the month of its greatest glory. On the sea-side slope of these mountains there are five distinct species: (1) *Ceanothus cuneatus*, Nutt.; (2) *C. papillosus*, Torr. and Gray; (3) *C. incanus*, Torr. and Gray; (4) *C. thyrsiflorus*, Esch.; (5) *C. Andersoni*, Parry.

I mention them in the order of their blooming. The flowers are all of a pleasant fragrance, and give a charm to these regions peculiarly attractive to the lover of Nature.

Dr. C. C. Parry, the eminent botanist, who for forty years or more has made observations from time to time on the Pacific coast, has published lately in the "Proceedings of the Davenport Academy of Sciences" a paper on the *Ceanothus*. To him I am indebted for much information in regard to these shrubs; and with him a few days ago I had the pleasure of a visit and trip of observation to the habitat of each of the above-named species. The doctor having an eye for the beautiful as well as the new in botany, says: "If asked to designate a spot where they (the *Ceanothus*) occur in the greatest profusion and variety I should not hesitate to award the palm to the Santa Cruz range of mountains."

C. CUNEATUS has pale blue or whitish flowers in small, rounded clusters, small opposite leaves and branches, grey bark; a very pretty shrub, 3 feet to 8 feet high.

C. PAPILLOSUS has deep sky-blue flowers in small globose clusters. The dark green leaves, by which it is most readily distinguished, carry small pimples (papillæ) on the margin and upper surface. Whilst May is the month of its greatest bloom, flowers can be found at all seasons.

C. INCANUS is well named, for the leaves and branches are hoary or white. The common name is White Thorn, so named because of its spinose branches. The leaves are broad; the flowers are whitish, in short racemes, and slightly fragrant. The bush is 5 feet to 15 feet high, of a rounded shape, but with crooked and very angular branches.

C. THYRSIFLORUS is a graceful shrub, reaching in many cases 30 feet in height. It may be recognised at a long distance by its slender branches of pale green leaves and sky-blue sprays or plumes of flowers, looking like the smoke from a camp-fire. This species and No. 2 are not often found growing together. The traveller, however, will often pause to admire the flowering clusters of each as they stand against the mountain-side, giving an indescribable beauty to the landscape.

C. ANDERSONI is not very abundant, and only occupies the higher summits of these wooded mountains. With its sprays of pure white flowers, slender and somewhat drooping branches, small, modest, feather-veined leaves of a pale green, it readily attracts attention. When first seen by me in 1882 I secured a few specimens of the flowers, but thinking it possibly a hybrid, they remained unnamed in my herbarium until Dr. Parry saw them, and after careful investigation concluded that they belonged to an unnamed species, which he described in the paper I have mentioned.

The *Ceanothus* in these mountains are commonly called "Lilacs," or, as I have frequently heard, "Laylocks." They flourish most abundantly among the openings of Oaks, Redwoods, Pines, and Firs, on the borders of basins and cañons. They are easily cultivated, and might be used to ornament grounds, or possibly for hedges. *C. cuneatus* and *C. incanus* might grow well in colder climates. I have found them at an altitude of 7000 feet, where the winters are long and severe.

"Hybridity," says Dr. Parry, "which would seem to be largely favoured by the profusion of showy and occasionally fragrant flowers, and which has been suffered to be largely instrumental in confusing species, is not a very troublesome feature in field observation where alone it can be properly studied." And yet in our little walk among these plants we found some very curious combinations which could not be solved very easily in the field, much less in the herbarium. Some of these hybrids were very pretty, too. But the parents were found growing on either side, and the blending of characteristics was so apparent that a botanist would seldom be deceived.—C. L. ANDERSON, in *Garden and Forest*.

STYRAX JAPONICA.

THE North American species of *Styrax* have been long known in gardens, but as they seldom flower well they have almost dropped out of cultivation, while *S. japonica*, which is of recent introduction, is quickly becoming popular. Its usual habit is that of a free, much-branched shrub, whose slender wiry stems are clothed with deep green ovate leaves. The branches grow in a somewhat flattened frond-like manner, which is well calculated to show off the flowers to the best advantage, as they are bell-shaped, and depend singly on long stalks from the undersides of the shoots. The flowers are about three-quarters of an inch in diameter, with pure white petals and a tuft of yellow stamens. This *Styrax* succeeds well in any good open soil, provided it is thoroughly drained. Its neat growth and free-flowering qualities render it a very desirable subject for flowering under glass early in the season, being quite distinct from the majority of the plants employed for that purpose. When treated in this way the shoots produced thus early can be easily struck, as they strike root without difficulty if kept in a close case. The shoots produced later on in the open ground are by no means difficult to strike. Another very beautiful species of *Styrax* very different from this last is *S. Obassia*. For its introduction we are indebted to Messrs. Veitch & Sons, who through their collector, Mr. Maries, have made us familiar with many desirable Japanese shrubs. This species forms a free-growing shrub, with large, cordate leaves and almost erect racemes over 6 inches long of pure white blossoms. The blooms are also agreeably scented. This species will not strike root so readily from cuttings as *S. japonica*, and consequently it will in all probability remain a scarce plant for a long time. Though Messrs. Veitch have now had it for some years, I see it is not announced in the present issue of their tree and shrub catalogue, which would suggest that it cannot be propagated very quickly.

Microglossa albescentis.—While most of the shrubby members of the Composite family that are grown in this country are natives of the southern hemisphere, the species under notice comes from Nepal, and is fairly hardy around London, where, with the protection afforded by a wall, it is quite safe against even our most severe winters. It is a much-branched shrub, with greyish lanceolate foliage and terminal clusters of blossoms. The individual blooms are small, but are densely packed together in heads 5 inches or 6 inches in diameter,

and are consequently very effective. Another notable feature is that while nearly all the shrubby Star-worts have white blossoms, the flowers of this are a kind of bluish mauve. It was introduced by Dr. Royle in 1842, and is also known as *Aster albescentis*.—H. P.

Spiræa nutans.—Among the shrubby *Spiræas* now in bloom may be mentioned this species, which is a native of Nepal, and, unlike many plants from that region, is quite hardy in this country. In free soil it forms a bush 6 feet or 8 feet or even more in height, whose principal branches, upright at first, droop towards the points, while the minor branchlets are still more pendulous. The leaves are small, ovate in shape, and of rather a light green tint, while the pure white flowers are borne in great profusion. They are arranged in dense flattened clusters, and extend for a considerable distance along the shoots, thus making a good show at this season of the year. All these shrubby *Spiræas* are seen to far greater advantage when liberally treated than they are in light sandy soils where they barely exist.—T.

Mount Etna Broom (*Genista athenensis*).—Just as the last flowers of *Genista virgata* are about to drop the earliest blooms of the Mount Etna Broom commence to expand, and being a showy species its late-flowering qualities render it very valuable, for with the exception of the Spanish Broom (*Spartium junceum*) most of the yellow-flowered Leguminosæ are over. It is a tall-growing species, reaching a height of 10 feet or 12 feet, and is of a loose, graceful character, the slender shoots being pendulous, and as they are almost devoid of foliage, a thriving specimen presents a very light appearance. The Mount Etna Broom ripens seeds in quantity from which young plants can be readily raised, and which will grow away quickly and soon attain flowering size. The roots penetrate deeply into the soil, and consequently the plant thrives better in dry, sandy places than many shrubs will do.—T.

Syringa japonica.—The late W. S. Clark, the first President of the Massachusetts Agricultural College, in the autumn of 1876 sent to the Arnold Arboretum from Japan, where he had gone to organise an agricultural college at Sapporo, in the northern island, a small collection of seeds. Among them were seeds of a plant belonging to the Oleaceæ, and described as a small tree. A number of specimens were raised; these flowered for the first time four years ago, and proved to be the *Syringa japonica* of Maximowicz, which had not, I believe, been introduced previously into cultivation. *Syringa japonica*, as it appears in the Arboretum, is a tree of remarkably rapid and vigorous growth. The trunk is straight, and shows no tendency to divide near the ground; it is covered with brown-red, smooth bark, which separates occasionally into thin scales, and is conspicuously marked, as is that of the branches, with raised, white, oblong dots. It might be easily mistaken, except for these dots, for the bark of a young Cherry tree. The branches are upright and rather slender, those of the year being round and covered with light brown bark. The winter buds are very small. The leaves are broadly ovate, contracted into a long slender point. They are smooth on the upper and pubescent on the lower surface, dark green, thick and leathery, 7 inches or 8 inches long by 3 inches or 3½ inches wide. The small white flowers with short corolla tubes, included in the calyx (like those of the other species belonging to the section *Ligustrina* of the genus), measure from a quarter of an inch to a third of an inch across. They are produced in immense panicles, 18 inches to 24 inches long by 16 inches or 18 inches across, and appear here during the first week of July. The fruit is smooth, oblong and obtuse. The hardiness and vigorous growth, the excellent habit, ample dark green foliage and splendid inflorescence, appearing at a season when few trees bloom, make *Syringa japonica* one of the most desirable of the small trees recently introduced into gardens. The fact that it loses its leaves early in the autumn, and that they fall while still

green, is the only drawback which has yet been noticed in it here as an ornamental plant.—*Garden and Forest*.

NOTES FROM THE ARNOLD ARBORETUM.

THE MOONSEED (*Menispermum canadense*) is one of the most graceful of our native vines. The long, slender, twining stems and ample and abundant, delicately thin leaves adapt this plant for covering small arbours and other structures or for clambering over trees and among shrubs. The flowers, which are white, are not in themselves particularly conspicuous, and are quite hidden by the leaves, which conceal also the black Grape-like fruit, which ripens in September. *Menispermum* is dioecious, so that plants of the two sexes must be planted if fruit is expected. *M. canadense* is a common plant in the central portions of the country east of the Mississippi River, where it is found growing in deep rich soil along the banks of streams and in other moist situations. There is a second species in this collection, *M. dauricum*, a native of Siberia, Manchuria and Northern China, whence it has been introduced into the Arboretum by Dr. Bretschneider. It may be distinguished from the North American species by its rather larger leaves, larger flowers, which expand here nearly a week earlier, and by its larger fruit. It is a perfectly hardy plant, and grows easily and rapidly, but from a garden point of view it does not seem in any way superior to our native species.

The cosmopolitan *Viburnum Opulus*, the so-called Cranberry tree, with its showy neutral ray-flowers, which are now expanded, is one of the most beautiful of hardy shrubs of large growth, although now less commonly planted than the variety in which all the flowers are neutral—the "Snowball," or than its Japanese relative *Viburnum plicatum*. The wild form of *V. Opulus* is not only more graceful and far more attractive than any of the abnormal forms of *Viburnum*, but it seems to escape the visits of plant-lice, which so disfigure the leaves of the "Snowball," and sometimes almost exterminate it. There are growing in the Arboretum, side by side, *Viburnum Opulus* from our northern woods, the European plant, and others raised from seed gathered by Dr. Bretschneider on the mountains near Pekin. The last is a distinct and very ornamental plant, with narrowly acuminate leaves, sharply wedge-shaped at the base, and often almost destitute of the broad lateral lobes usually found on those of this species. The cymes of flowers are rather broader than those on the American plant. There is in the collection a curious dwarf variety of *V. Opulus* which has never been known to flower before here. It forms a perfectly compact little round bush a foot and a half high and more than 2½ feet across. The leaves and flowers are smaller than those of the ordinary plant, from which it does not otherwise differ. The variety is not without interest as a curiosity, and it might, perhaps, find its place in a collection of dwarf shrubs. Its compact habit and stiff and formal outline, however, do not make it a desirable object when planted on the margins of shrubberies composed of more graceful plants, while the rarity of its flowers detracts also from its value as a garden plant. It should not be forgotten, in comparing the Cranberry tree with the Snowballs, that the former is one of the most ornamental of all shrubs in fruit, which hangs bright and scarlet on the naked branches almost until the return of spring, while the Snowballs, which produce neutral flowers only, are destitute of fruit.

THE SCOTCH OR BURNET ROSE (*Rosa pimpinellifolia*, or as it is still more generally known, *R. spinosissima*) is a plant which was more frequently seen in gardens a quarter of a century ago than it is to-day, being, like so many of the beautiful wild single Roses, discarded in favour of the showier-flowered races which have come into fashion of late years. The Scotch Rose, nevertheless, is one of the most charming of hardy plants, with numerous varieties differing in the colour and size of the flowers. *Rosa pimpinellifolia* in its uncultivated state is a small, erect, much-branched shrub, rarely growing more than a foot high, thickly armed

with straight, slender prickles. The flowers are white or pink, half an inch to 1 inch across. The fruit is globular, or nearly so, black, or rarely red. This plant has been cultivated in gardens for centuries, and formerly, when Roses were less common than they are in these days, a good deal of attention was devoted no doubt to the selection and improvement of varieties. There are several of these varieties in this collection, some with pure white, others with pink, and one with semi-double flowers. The Scotch Rose is absolutely hardy, and grows and flowers year after year without other care and attention than the early dose of whale-oil soap, which is necessary in this climate to preserve the foliage of every Rose, always excepting that of the Japanese *R. rugosa*, which is unpalatable, apparently, to all insects. *Rosa pimpinellifolia* is widely spread over Europe and temperate Asia, occupying shrubby wastes, often close to the sea, or heathy hills.

HONEYSUCKLES.—As they are now in flower, a few words may be said about two of the twining-stemmed Honeysuckles of the Eastern States. They are *Lonicera flava* and *L. Sullivani*. The first is one of the rarest plants of the United States flora, being known to have grown wild only on the top of Paris Mountain, in Greenville, South Carolina. It was first made known by a notice published in 1802 in Dayton's "View of South Carolina." Later it was collected in the same locality by Fraser, who introduced it into English gardens, where it is still occasionally met with, it is said. It is very rarely seen in those of this country. It is a high-climbing, glabrous plant, with somewhat glaucous, thin leaves, the two or three upper pairs joined together into a disc. The flowers, which are borne in short terminal clusters, are slightly fragrant, bright yellow, later turning orange, with long, slender corolla tubes. The plant, which has long been confounded with this beautiful species, and is now generally cultivated under the name of *L. flava*, is the much more common. *L. Sullivani* (the *L. flava* of Gray's "Manual"), which was first distinguished in Ohio many years ago by Mr. W. S. Sullivan, is a widely distributed plant from Central Ohio to Winnipeg and to Tennessee. This plant may be distinguished from *L. flava* by its short, bushy stems, which barely climb or attain a greater height than 6 feet or 8 feet; by the much thicker leaves, whitened with a glaucous bloom; by the inflorescence, which consists of several more or less approximate whorls of flowers, and by the flowers themselves. The leaves are each 2 inches to 4 inches long. The flowers of this species are not fragrant. This is the half-bushy Honeysuckle often seen in old gardens, with pale foliage, which becomes by midsummer quite mealy-white. It is a far less ornamental or desirable plant than the true *L. flava*, which some nurserymen would do well to take up and make common.

The Scarlet Trumpet Honeysuckle, a widely distributed plant through the Middle and Southern States, and one of the most beautiful of the Honeysuckles in cultivation, is such a well-known plant that it need only be mentioned for the purpose of calling attention to a variety with clear yellow corollas, which is not as well known to cultivators, or as often seen in gardens as its great beauty entitles it to be.

Lonicera hirsuta is another of the climbing Honeysuckles of the Eastern States, which is now in flower, and which well deserves a place in every collection of hardy shrubs. It is a high-climbing, free-twining plant. The corollas are orange-yellow fading to brown, the tubes half an inch long. This pretty plant is found growing upon rocky banks from Northern New England and Canada to the Saskatchewan, and southward to Michigan and Pennsylvania.

It is surprising that the English Woodbine (*Lonicera Periclymenum*) is not more generally grown in the gardens of this country. It is one of the most beautiful of all the climbing Honeysuckles. The "Dutch Monthly" Honeysuckle is a variety of this plant, so named, it is said, because it originated in one of the Dutch nurseries. The flowers are rather darker coloured than those of the

species. These Honeysuckles flower quite continuously through the summer months, and there are no more charming plants to train over the porch or verandah of a dwelling-house.

Lonicera orientalis is in flower. It is a low shrubby species of Western Asia, extending from Asia Minor to Kashmir and the temperate Himalaya, where it sometimes attains the size of a small tree. Here it is a slender shrub with pale green smooth leaves, rather prominently veined small pink flowers and conspicuous black fruit. This plant from an ornamental point of view has little to recommend it as compared with some of the fine forms of the Tartarian Honeysuckle, or with some of the recently introduced bush Honeysuckles from Western Asia.

Another Himalayan species, *Lonicera quinquelocularis*, closely allied to *L. Xylosteum* of Europe and Siberia, is certainly better worth a place in the garden. It is a hardy shrub growing to a height of from 5 feet to 10 feet. This plant is an old inhabitant of the Arboretum, where it is perfectly hardy and decidedly ornamental. It is widely distributed in the Himalayas, where it is common at an elevation of between 4000 feet and 12,000 feet.

ELÆAGNUS CANADENSIS is still, in spite of some interesting introductions from Western Asia, the most ornamental species of this genus, at least in foliage. It grows to a height of from 8 feet to 10 feet, with unarmed branches, those of the year covered with ferruginous scales. The flowers are deliciously fragrant, and are followed by abundant, globular, dry, mealy, edible fruit. It is a widely distributed plant from Northern Minnesota to the Saskatchewan and to Utah; it is abundant, and a characteristic feature of the vegetation of the upper Missouri valley, where it was discovered by Lewis and Clark during their transcontinental journey. *E. argentea* was introduced into English gardens as early as 1813, but is now not very often seen in cultivation. It is perfectly hardy, and the silvery whiteness of the foliage and the pleasant fragrance of the flowers make it an attractive garden plant. *E. umbellata* is also in flower. It is a shrubby plant, 3 feet or 4 feet high, the grey branches covered with brown scurfy scales. The flowers are clustered, creamy-white, fragrant, and appear after the leaves are fully grown. Those on the Japanese plant assume a brilliant hue in the autumn. The fruit is succulent, one-third of an inch long. Another plant here (*E. parvifolia* of Wall. and of gardens) is evidently the Himalayan form of the species. This is a larger and stouter plant, growing into a broad bush 10 feet or 12 feet high, with rather narrower pale green leaves, but not otherwise distinguished from the Japanese plant; it is less hardy, however, and suffers seriously sometimes during severe winters. —*Garden and Forest*.

SHORT NOTES.—TREES AND SHRUBS.

Darwin's Barberry in fruit.—While Darwin's Barberry is one of the finest evergreen flowering shrubs that we possess, its ornamental fruit furnishes yet another attractive feature. Just now, where heavily laden with berries it stands out very distinctly from any of its associates.—H. P.

***Cupressus macrocarpa*.**—I was much interested in Mr. Webster's note on this in THE GARDEN, July 6 (p. 8). In the Imperial Gardens, Miramare, near Trieste, I found extremely fine forms of the broad table-headed and the usually strict upright forms. The gardens at Miramare may be regarded as a vast rockery. The Cupresses do remarkably well in the loam resting on rock. *Cupressus torulosa* was also very telling amongst *Pinus halepensis*, and *P. pinea*.—LOUIS KROPATSCH.

The Siberian Pea tree (*Caragana arborescens*).—This hardy little deciduous tree or shrub is well worthy of a place in the mixed shrubbery. The Siberian Pea Tree is sometimes trained to one stem and planted as a small standard, whilst at other times it is allowed to assume the shape of a mere bush furnished with several stems. Its general contour and narrow shaped pea-green foliage never fail to attract attention, and render it

conspicuous among other associates. It is well adapted for planting in places of limited extent, as it is not apt to become damaged when growing in proximity to other plants and trees of a more robust habit of growth. When planted in smoky districts about large towns it appears to thrive perfectly well, although at the same time it is not so commonly used in such places as its merits deserve. With regard to soil, I have found it thrive in any ordinary soil where naturally dry or rendered so by drainage.—J. B. W.

The cut-leaved Hornbeam (*Carpinus incisa*).—This hardy little tree forms a fine specimen when planted on a well-kept Grass lawn. It only attains a height of from 10 feet to 20 feet under ordinary conditions, and has a well-formed, nicely-balanced, globular head, well furnished with finely-cut silky foliage of a light green colour. For villa planting few trees can compare with the cut-leaved Hornbeam, whilst it is one of the very best deciduous trees for withstanding the evil effects of smoke and sulphureous vapours. The fine, ferny-looking, light green spray of its twigs and branches is very effective when produced in the vicinity of water, and for this reason planters should never hesitate to place it here and there in well-chosen spots upon the banks of running streams and lakes. In addition to its beauty as a small specimen tree it can be planted with success on any class of soil, provided it is thoroughly drained and well broken up.—J. B. W.

ORCHIDS.

W. H. GOWER.

PROMENÆA.

THIS is a small family of plants which was formerly included in the genus *Maxillaria*, but which when that family was overhauled by Lindley, now many years ago, became separated under the present title. Later on Reichenbach regarded *Promenæas* as a section of the *Zygopetalums*, but English growers still retain the name bestowed upon them by their chief. These plants are natives of Brazil, and I believe come from warm parts of that country. They were formerly to be found in most gardens, and were highly admired, but they have fallen into disrepute during the last decade or two. Like many of the old species, however, they are again coming to the front, and deservedly so. I was particularly reminded of this fact by a walk through the collection of Mr. Williams at Holloway a short time since, where I noted one or two species flowering beautifully, calling to mind the old times in everything save in the style of growing them. *Promenæas* are small dwarf plants, and we used to grow them upon blocks of wood. Grown thus, they may be hung near the roof glass and thrive well, care, however, being required to keep them supplied with the necessary moisture. Mr. Williams, however, adopts the use of shallow pans, these being suspended from the roof, and I think this system is preferable, especially in large collections, as the plants do not require so much attention in the matter of taking down and watering, as the soil about their roots in the pan does not so quickly become dry.

Promenæas are by no means fastidious in their requirements, and they produce large and showy blooms, which come in at a time when flowers are somewhat scarce, and they last a long time in full beauty. The pans should be well drained, and the plants potted in a mixture of fibrous peat and Sphagnum Moss, elevated into a cone-like mound above the rim, this causing a more rapid falling away of the moisture, and allowing the roots to work out into the open and absorb nutriment from the atmospheric moisture, with which the air should be well charged during the spring and summer months.

Promenæas form small pseudo-bulbs, so that during the winter or resting season they may be safely allowed to become dry occasionally, but not for a long time together, and never so that any injury comes to them through shrivelling. With small plants of this sort shrivelling soon causes the leaves to fall, and if the bulbs also shrivel, it frequently becomes a great source of trouble and anxiety to restore them to good health, hence my strong objection to the drying system as it used to be carried out under the old régime. *Promenæas* are not cool house plants, but thrive best under the same system as is practised by the best growers of *Cattleyas*. The following are the best known kinds, but it is long since we had a new sort introduced; careful search should, however, bring to light some new varieties.

P. CITRINA is a plant with small, four-sided



Promenæa Rollissoni.

pseudo-bulbs, each supporting a pair of leaves, which are some 3 inches or more in length, and light green in colour. The scape is shorter than the leaves and bears a large and showy flower. These scapes are freely produced, and as the flowers last several weeks in full beauty, the plants present a charming appearance. The sepals and petals are bright yellow; lip three-lobed, and rich deep yellow, side lobes small, also yellow, but spotted on the inner side with red.

P. MICROPTERA is a plant of somewhat recent introduction. The sepals and petals are creamy-white, suffused with a tinge of pale yellow; lip creamy-white, bearing three streaks of deep red on the disc and a few purple dots at the base. The side lobes are very small and white.

P. ROLLISSONI.—This plant, here illustrated, is similar to the first-named species, yet entirely distinct if obtained true. The sepals and petals are broad and clear yellow; lip three-lobed, side lobes small, ground colour yellowish-white, dotted with deep reddish crimson; middle lobe large, yellowish-white.

P. STAPELIOIDES.—Perhaps the strongest-growing plant in the genus; flowers large and very conspicuous, peduncle frequently two-flowered. The ground colour of the sepals and petals is greenish-yellow, thickly covered with close transverse lines and spots of deep purplish-black. The lip is deep blackish-purple.

P. XANTHINA.—This is another yellow-flowered species, as its name implies, and to this name most of the kinds with yellow flowers are erroneously assigned. The flowers are smaller than those of *P. citrina* and the colour is somewhat paler.

Stanhopeas.—A German reader sends three flowers of this genus for name. These fill the room with a rich aromatic odour, and show how rich and beautiful the species are. These plants were always greater favourites in Continental gardens than with us in England, the chief reason at home being the short time the flowers remain in perfection. The flowers, however, are so large, so richly coloured, and produced in such profusion, that I am not surprised that the different kinds are being sought after again by numerous growers in this country. Of the flowers now before me, No. 1 is *S. Martiana*, the sepals of which are greenish yellow, approaching to white at the tips, marked with a few unequal spots of red; petals smaller, white, sparingly spotted with large crimson spots, and bearing at the base a large blotch of the same colour; lip white. No. 2 is the typical *Wardi*. The flowers are very fragrant; sepals and petals rich deep yellow, freely dotted with purple; lip paler yellow than the petals, bearing two large eye-like spots at the base, the column sparingly spotted with vinous red. No. 3, *S. ornaticissima*, is a rarer plant than the two previously-named kinds. The sepals are large, deep orange, spotted with brown; petals much narrower than the sepals, also deep orange, sparingly spotted with purplish crimson, all bearing a crimson blotch at the base; lip narrow, whitish, tipped with orange and dotted with rose, and bearing two eye-like spots of deep crimson. These are three beautiful plants, and I would strongly urge the claims of the genus upon English Orchid growers.—H.

Vandas at Holloway.—These plants are just now in fine condition with Mr. Williams. Large specimens, furnished with leaves to the base, are flowering beautifully and filling the house with fragrance, such kinds as *V. suavis*, *V. tricolor insignis*, *V. tricolor Patersoni* (figured in *THE GARDEN*, February 10, 1883), and many other forms of tricolor being conspicuous. Amongst these plants is a fine tall specimen, which Mr. Williams regards as a form of *V. Denisoniana*, but which, to my mind, has not the habit of that species. I rather regard this plant as the true *V. concolor* of Blume, the same as a plant which flowered many years ago at Wentworth House, and which Hooker erroneously made a variety of *V. Roxburghi*, from which, however, it is very different in habit. The sepals and petals of the plant in question are china white at the back, and of a uniform bronzy olive or cinnamon in front; when held up to the light they appear to be tessellated with a lighter hue, but this is very faint when the flower is seen from the front; lip three-lobed, white, bearing four dotted lines of crimson at the base, and freely marked with minute specks of rosy-brown over the surface. The flowers are very fragrant.—G.

Anguloa media.—A beautiful variety of *Anguloa* which I recently noted flowering with Mr. Horsman at Colchester appears to me to be a form of the above-named plant, and it is very handsome

and distinct. The flowers on the outside are dull orange-yellow; the sepals within of a brownish-red, the petals orange-yellow, profusely spotted with reddish-brown. It was imported from the Antioquia side of Columbia.—W. H. G.

Eriopsis rutidobulbon.—This exceedingly rare and curiously beautiful plant is in the collection of Sir Trevor Lawrence at Burford Lodge. It is an old species found by Purdie, about fifty years ago, when collecting for Kew, and it has continued a rare plant up to the present day. It bears a long, dense raceme of bloom. The sepals and petals are dull orange-yellow, margined with reddish purple. The curiously-shaped lip is of the same colour at the base, the front lobe pure white, spotted with deep purple. It is said to thrive best at the cool end of the Cattleya house.

Cypripedium Morgania.—This is a hybrid of Veitchian origin, and I consider it the grandest form of the genus extant in English gardens. It was obtained by crossing *C. superbians* with *C. Stonei*, and the result is a superior and larger flower than that of the rare introduced form of *Stonei* called *platytanum*, and which originated in the celebrated collection of Mr. Day, of Tottenham. *C. Morgania* has leaves nearly 1 foot long, broad, full green, with faint tessellations of a paler hue, and the scape bears from two to three large flowers of extreme beauty, combining the form and colour of those of the two parents in a marked degree. A coloured illustration of this fine plant was given in THE GARDEN (Vol. XXIII., p. 58). It enjoys the heat of the East Indian house. The plant was named in honour of a famed American grower of these plants, who has since passed away.—W. H. G.

Odontoglossum læve.—From Belfast I have received flowers of this species, asking if they are not the same as those of the plant named *O. Schroederianum*. They are not, but I am fully persuaded that the last named plant is nearly allied to it. *O. læve* appears to be pretty widely distributed over the southern portion of Mexico and the neighbouring country of Guatemala, from whence it was first sent to England, by Mr. Skinner, nearly fifty years ago, but it does not appear to have been found plentifully, or to have found favour in the eyes of recent collectors, for the plant is not much seen in collections. I used to frequently see it, some years ago, in the collections round Manchester. It is a strong growing plant, producing a much-branched, many-flowered raceme of bloom. These blooms vary much in colour, but I do not think the plant named *O. Reichenheimi* is the same as *O. læve*, but nearly allied to it; the lateral spike of bloom before me now, however, is the veritable *O. læve*; the upper sepal and the petals are about equal, all erect; the lateral sepals are longer, all with a ground colour of yellowish green, transversely barred with deep brown; lip white in front, lilac or lilac-mauve at the base. It should receive more attention.—W. H. G.

SHORT NOTES.—ORCHIDS.

Cypripedium cenanthum is a Veitchian hybrid of great beauty and richness of colouring, and thrives best under warm treatment.

Lycaste cruenta.—This old favourite, again becoming popular, and which flowered some time ago with Mr. Bunn, Melford Lodge, Stamford Hill, grows and flowers freely as a pot plant, and requires to be grown in the Cattleya house.

Cypripedium Wallisi.—This, the so-called white Lady's Slipper, flowered in the once famous collection of Mr. Lee, of Leatherhead. In general growth and appearance of flower it is similar to *C. caudatum*, but the ground colour is white, suffused and veined with creamy yellow, the long petals changing to brown. It will succeed in the Cattleya house.

Calanthe biloba is an old and beautiful member of the evergreen section from India. The only living example in this country exists in the Kew collection. The scape is erect, bearing a dense raceme of flowers, which are of a rosy-purple hue streaked and veined with white, becoming with age bronzy-orange. It should be treated the same as the other terrestrial species, and be grown in the East Indian house.—W.

Odontoglossum Cestedi majus.—This is one of the most beautiful and useful of the small-

flowered kinds. The flowers are pure white, stained with yellow on the lip and dotted with orange-yellow on the raised yellow disc. They are very fragrant, are produced in winter and early spring, and are very useful in a cut state. It grows at an elevation of from 7000 feet to 9000 feet in Costa Rica, and thrives best under cool treatment, but should be well exposed to the light.

Oncidium splendidum.—A handsome form of this beautiful species is in the collection of Mr. H. M. Robinson, Aymestrey Court, Liverpool. This plant, which was long one of the rarest of Orchids, has now become widely distributed, and as it flowers in midwinter it is specially valuable. It is a plant said to be found growing on the ground in Mexico, and appears to thrive best in the Cattleya house.

Aganisia cærulea.—A rare plant of great beauty, discovered by the traveller Spruce on the Rio Negro. An exceptionally good variety lately flowered with Mr. Holland, Linwood, Liverpool. The sepals and petals are soft bluish lilac; lip purplish brown, with a yellow crest at the base. It is said not to require much material about its roots, and this should be *Sphagnum Moss*. It should be grown upon a hanging raft in the warmest house, and abundantly supplied with atmospheric moisture.

CHRYSANTHEMUMS.

E. MOLYNEUX.

CULTURAL NOTES.

PLANTS intended to produce large blooms, whether for home decoration or exhibition, are now growing freely, and where many plants are cultivated will almost require daily attention in the matter of securing the growths to prevent accident to the extreme points which at this time are very soft and succulent. All plants having made their first break will grow away freely, and each shoot retained should be securely fastened to upright stakes, which are fastened to the cross-rails. When all the shoots are supported in this way, each one obtains its equal share of light and sun much better than when three branches are tied to one centre stake. By the former method mildew is not nearly so likely to attack the leaves, and ripening of the wood progresses with the growth of the plant by the assistance of a free leaf development. The ripening of the branches of *Chrysanthemums* at this time of the year is not nearly so much thought about as it should be. The growth, as it is made, should be hardened. It is the treatment at this stage of the growth of the plants which goes a long way toward success on the one hand, and failure on the other. With the plants growing quickly, gross-growing sorts need constant attention to see that the bast with which the points of the shoots are fastened is not too tight. Side growths which push from the stems in any way should be promptly removed, thereby concentrating the whole energy of the plant into the selected growths. Suckers which spring up from the base of the plant should be removed as fast as they grow, retaining any from scarce or new varieties for the purpose of supplying cuttings next December. If dibbled into sandy soil, even now, and placed in a slight bottom-heat, they will quickly strike root and make sturdy little plants which will produce cuttings of strong growth at the proper time. Care should be taken in the removal of suckers. See that the roots of the plants are not damaged unnecessarily by cutting out the suckers with a knife, as is sometimes done. The safest way to remove them is to break them off above the soil. Insects have been rather troublesome this season so far, but fortunately are diminishing now in numbers. The Celery fly has been in some

places unusually abundant, and the only remedy that I know of is handpicking. If this is persisted in immediately the presence of the grub is detected in the leaf, the latter need not be removed.

The spittle fly, or what is commonly known as the cuckoo spit, has also been a great trouble. Secreting itself in the points of the shoots, it quickly causes the tender young leaves to curl up, and when once the leaves are affected in this manner they seldom recover their form again. Constant watching and removal are the safest means of clearing the plants of this pest. This fly, if allowed to remain, develops into what is known amongst gardeners as the "jumper," which does much damage to the young growth by eating out the point of the shoot. Earwigs, too, are beginning to appear. These also infest the points of the shoots. Hand-picking is one way of getting rid of them, and they may be trapped with upturned small flower-pots in which is placed a small portion of Moss, also by Broad Bean-stalks.

Mildew, I notice, has made its appearance on the leaves of some varieties. Meg Merrilies and its sport, Ralph Brocklebank, are more subject to this pest than are the bulk of varieties. Upon those kinds it is generally to be found after a spell of hot or cold wet weather, owing, possibly, to some defect in their constitution. A dusting over the affected parts with brown sulphur is the best remedy, especially if it be applied early—as soon as the mildew is seen.

The recent hot weather has been very trying to *Chrysanthemum* cultivators where water is not plentiful, as the plants have needed a supply in some localities twice daily. Under no conditions must the roots be allowed to become dry. As a rule, the soil in the pots should be examined twice daily, and there is no more certain way of ascertaining their condition than by ringing the pots with the knuckles. Any plants which are dry, or approaching that state, should have sufficient water given them to thoroughly soak every part of the soil, and then let it wait until it is again in the same state. Where it is possible to obtain it, the water should be soft. Where a sufficiency of rain water does not exist, recourse has to be had to wells, or, as is the case near to towns, the water passing through the water company's pipes has to be used. Before use, this water should be placed in the sun some hours to become warmed, as water applied direct from the pipes to the roots must give a check to the plants.

Water coming from the sources named, if of a hard description, as is the case from chalk wells, can easily be softened by adding either common washing soda or anticalcaire, commonly called milk of lime, which can be had from any chemist. If the former is used it will also act as a stimulant to the plants. To 36 gallons of water add a quarter of a pound of soda, first dissolving it in hot water and allowing it to stand for twenty-four hours, when it will be quite soft and ready for use. To 250 gallons of water add 1 lb. of anticalcaire, when the chalk contained in the water will be precipitated to the bottom of the tank. When using the water from the tank, care should be taken not to disturb the sediment, which would be injurious to the plants if applied to the roots. Where water is continually applied to the plants in a hard, cold state, the foliage assumes a pale green colour, which is not pleasant to look upon. Especially do they assume this sickly tint if the soil in which they are growing is very much impregnated with chalk, as it will be if the turf was taken from a chalk district. An excess of

lime is injurious to Chrysanthemums, although a sufficiency is an advantage. The continual application of water will have washed some of the surface roots bare about the stem if means were not taken to prevent this after the plants were transferred to their flowering pots. It will be advisable to again cover the roots so that they do not become bare with, say, half an inch thickness of turfy loam, to which has been added a portion of partly decayed horse manure, say one part of the latter to two of the former. On the top of the soil place a flat piece of crock or broken tile about 2 inches square, which will prevent the roots being again bared if the water is poured on the tile instead of directly on to the loose soil. Bush plants will have received their last stopping of the shoots, and the branches will need some sort of support to prevent their being broken by winds or other causes. As a temporary protection in this respect, place three or four stakes around the outside of the pot, and to them fasten some bast, encircling the branches so that they are made secure, to be thoroughly staked out at a later stage. The same care in supplying these plants with water, warding off insects and other details of culture apply equally to this class of plants as it does to those grown solely to produce a limited number of blooms; indeed, more care really is necessary to maintain the foliage in good condition than in the case of the other method, as much of the beauty of bush-grown plants is lost if the foliage is defective through the ravages of insects or mildew. Specimen plants should have their shoots trained as growth proceeds, as it is much easier done now than later when the wood is ripening. In hot, dry weather the plants will derive much benefit from being vigorously syringed twice daily. The foliage is kept free from dust, and insects find it more difficult to obtain a foothold than when the foliage is not disturbed in any way. In showery or cold weather the plants should not be syringed at all, and only once, this in the afternoon, if the nights be favoured with heavy dews, otherwise a good syringing early in the morning after a warm, dry night will prove advantageous. Especially will this be noticeable if the position in which the plants are growing is high and at all exposed to the north or easterly winds, which are always more of a parching description than when they come from opposite quarters. For syringing the plants we use the garden engine, going between the rows and returning in the opposite direction. In this way we are enabled to apply the water to the foliage with some force.

Gardening for profit.—Judging by the many queries under this head, there are many who are still anxious to join the already crowded ranks of gardeners who grow for profit, and I should be sorry to check the ardour of any such wishing to embark in this or any other branch of gardening. I would, however, advise those who have little or no practical knowledge of the business to beware how they embark their hard-earned savings in competition with the host of men who have been trained from their youth up to turn everything to account, and whose united testimony is that they have to strain every nerve to live, owing to the keen competition in all branches of the trade. I may mention the Potato crop as likely to be very good this year. But the old tubers of last season's growth are by no means all sold, and cannot be got rid of at all, except to bakers or cattle keepers at a very low price indeed; and Strawberries that promised for such a fine crop are, owing to heat and drought, all ripe at one time, and the prices very low. Many who thought to make a good thing of the crops of 1889 will be thankful if they get a small profit. I could give endless illustrations, but with a business

so dependent on the weather as gardening, one cannot predict far in advance on the likelihoods of profit from any given crop.—J. G., *Hants.*

STOVE AND GREENHOUSE.

TUBEROUS BEGONIAS AT FOREST HILL.

THE Forest Hill Nursery of Messrs. J. Laing and Sons is one of the great homes of the tuberous Begonia, as here it is seen in its most perfect phase, both outdoors and under glass. For years past there has been an exhibition of the flower, and each season as we glance through the rich collection there are distinct advances, either in a widening of the range of colour, a compacter growth of the plants, or an improvement in the varieties for the garden. Now that the Begonia has been brought to such a pitch of perfection there is very little to tell that is new, as the large house in which the finest varieties are arranged has been often described in the pages of THE GARDEN. It is sufficient to say that the display is as fine as it ever has been; thousands of seedlings abound, all showing improved colours and a better style of growth, and outside alone there are 120,000 seedlings exposed to the full influence of rain, storm, and sunshine. These are evidence if any is wanted that the tuberous Begonia is a good garden plant, though it may fail occasionally. But so does every plant. Last year the Pelargoniums were a complete disappointment, and it was then that the Begonias gave colours quite as rich and diversified as in the bedding Geranium. It is early yet to write of the open-air kinds at Forest Hill, as being young seedlings they are later than usual, but in about a month, judging from present appearances, the many beds will be ablaze with colour. Under glass there are many fine named varieties, and the seedlings about to bloom give promise of still adding to the long list of tints and shades that the tuberous Begonias can give. In the house chiefly confined to the single types, a few of the best were Duke of Edinburgh, deep crimson, a broad handsome flower of splendid proportions, and pendula, a noble basket plant, the flowers large rich rose-carmine, and almost hiding the growth. A basket hanging up in one corner made a brilliant show. There can be no two opinions as to the formality, stiffness, and a certain ungainliness in the tuberous Begonia, and this is the reason that the pendulous varieties, so well shown off in baskets, should be used in sufficient quantity to relieve an otherwise monotonous display. If tuberous Begonias are much used in decorations, always associate them with plenty of Ferns and Palms, as unless a soft colour is used as a foil to the brilliant and gaudy flowers, the arrangement is sure to be painful to the eyes from the effect of colour or a garish mixture. Other good single varieties are Queen Victoria, rose tint; Mrs. Chamberlain, a lovely rose-shaded flower; Lady Iddesleigh, buff; Prince Albert Victor, crimson; Princess Christian, beautiful shining rose; and gigantea, crimson, the flower large and broad, hence the name. A splendid white-flowered variety is Princess Louise, and another excellent type is called White Perfection. We are glad to see such kinds as these. The flowers are of great purity, excellent shape, and the habit of the plants good. Every cultivator of the Begonia should have one or two good white kinds, not forgetting a selection of flowers in which the leading colour is rose. Some of the single flowers are beautifully touched with the softest shades, as if veined with the Rose as to which should have the most refined and delicate tints.

It is in these shades that there has been a marked improvement the past two or three years. Those named just indicate a few special varieties, but it is impossible to give any idea from descriptions of the varied colours multiplying each season through the work of the hybridist. In the double varieties there is the same perfection of form, colour, and habit of growth as in the single types. We suppose there will be a climax, but as yet it is a thing to be achieved, as each year shows new departures in the character of the bloom. Messrs. Laing have a few of the rosette shape that are infinitely to be preferred to the conical sugar-loaf flowers, as ungainly and ugly as a double Canterbury Bell. Those who care for double Begonias will find a rich gem in Duchess of Teck, a flower of a delicate primrose tint, good form, large, and well shown above the foliage; Leonore, of a beautiful shining pink; H. Adcock, deep crimson; and Princess Maud, pure white, a lovely flower. F. Nettlefold has a well shaped bloom of a rich scarlet, and in Viscountess Cranbrook the flowers are rich pink, centre white. In the many rows of seedling double varieties a critical eye may detect the change that is coming over the flower. There are more of the Carnation-flowered types, those whose blooms are like enlarged double flowers of the Nerium or Oleander. Readers who require more information than is given here should visit the nursery itself, where they will see the Begonia at its best, and can then tell those who persistently infer that the tuberous Begonia has reached its climax that there is a greater variety in colour, better habit in the plants, and a greater development in the outdoor section than two seasons ago.

WORK IN PLANT HOUSES.

GREENHOUSE.—**CHRYSANTHEMUM FRUTESCENS.**—Time was when the aim of most plant growers was to get double varieties of nearly all the plants they possessed, unmindful of the superior elegance and beauty of the single forms. The chief merit in double flowers is that they last longer than single ones, a matter of considerable importance to those who have to keep up a display of bloom. Single flowers are, however, reinstated in the position which they never should have lost. Amongst the single flowers that in recent times have become general favourites are the white and the yellow varieties of Chrysanthemum frutescens, or Marguerites, as they are popularly called. The white sort grows by far the best, and blooms proportionately more freely than the yellow one. It is scarcely necessary to say that there are several varieties of both the yellow and the white kind, some of which are superior to the others. The best of the yellows is known by the name of Etoile d'Or. One of the best of the whites has finely-cut leaves of a somewhat bluish colour. This variety, though not producing flowers quite so large as some of the forms, has the merit of keeping on blooming nearly the year round, as when well managed it will flower through the latter part of autumn and again early in spring. To have it in condition for flowering during the dull summer season, the plants must be strong and furnished with plenty of active roots. To secure this condition they must not be pinched for pot room. The stock intended for late blooming should now have a liberal shift, so that the roots may have time to get well hold of the soil before autumn, when, in common with other things, comparatively little progress goes on. Large old specimens generally bloom most freely. Where plants of this description exist and that are already in pots as large as it is desirable to give them, they may be turned out and have one-fourth of the ball cut away, replacing them in the same pots in soil composed of moderately light turfy loam, well enriched with rotten manure and leaf-mould, adding a sprinkling of sand. Make the material firm in the pots, and keep the plants in a somewhat confined atmosphere

for two or three weeks until new roots are fairly moving. At the time of repotting, the heads may be reduced by shortening the branches somewhat, but in doing this do not cut back into the hard wood, or the plants will not break so strongly as desirable. After they have got over the effects of repotting stand them out of doors, and let them remain there as long as the weather permits. Young examples should be potted on before their roots get too much matted. Treat them in other respects as advised for the large specimens. Plants of the yellow variety must have enough pot room to keep them growing freely. Keep the whole stock free from aphides; they should also be gone over frequently to see that the leaf-boring grub does not injure the foliage. There is no effectual means that I know of for the destruction of this pest, except crushing the insects by hand. When the enemy appears means must at once be taken to deal with it, or the plants will be spoilt. Where there is a deficiency of stock, cuttings may now be put in. Soft, free-growing shoots, such as break back from the lower part of the branches and that have not formed bloom-buds, should be selected. If cuttings that are about to flower are used, they will not strike freely, neither will they grow well after they are rooted.

CINERARIAS.—Plants that have been raised from seed sown in spring, and that are intended to bloom about the beginning of the year, should now be pricked off into small pots. In the case of Cinerarias to flower in winter, it is a matter of the first importance that the plants gain size and strength whilst there is time before the short days come on, for unless the growth is close and sturdy it is useless to look for flowers worth taking into account. To have this early stock in the condition named every attention must be given to them. Pot in soil well enriched with rotten manure and leaf-mould, to which add enough sand to allow of the large amount of water the plants will require passing freely through it. Ordinary garden frames sufficiently roomy to admit of the plants standing far enough apart to prevent the leaves being drawn are the best places for Cinerarias during the summer. The frames should be filled up with ashes so as to raise the plants close to the glass; the frames ought to stand to face the north, and have the lights tilted in the daytime to admit plenty of air. A thin shade, such as a piece of old fishing net affords, ought to be given when the sun comes on the glass. In the night the lights should be drawn completely off to expose the plants to the dew. A little seed may be sown now, the plants raised from which will flower in spring.

HERBACEOUS CALCEOLARIAS.—Seed of these should be sown. It is well to put it in early enough to admit of the plants getting strong before winter. Without this nothing that can afterwards be done for them will give the strength requisite to enable them to flower properly, as when the time for their blooming comes in spring, the flower-stems will appear, whether the plants are sufficiently strong to support a good head of bloom or not. Sow the seeds thinly. If the seedlings are too much crowded they will grow up weakly before they are large enough to admit of their being pricked off. Sow the seed in finely sifted soil, and make it light with the addition of sand and leaf-mould. The last-named must be passed through a fine sieve.

SHRUBBY CALCEOLARIAS.—Though the shrubby varieties of Calceolaria do not produce flowers so large and showy as are to be had from a good strain of the herbaceous sorts, there has been much improvement in them of late, especially in the colours, not only of the self-coloured varieties, but also in the spotted forms which now show great variety. One of the advantages attached to the shrubby section is that, where well managed, the plants will keep on for years so as to attain a large size. This, with their continuous habit of blooming through the greater part of the summer, is worth taking into account. Plants of the shrubby kinds that were raised from seed sown a year since must not suffer for want of root-room, for though they will now be in flower, by exercising a little care the

bloom need not be interfered with. Where these shrubby varieties are to be grown or in a way that will admit of their being seen in a large effective condition, they must never be allowed to get much affected with aphides. The shrubby sorts are not so much troubled with this pest as are the softer-leaved herbaceous kinds; still if the insects are allowed to run riot on them they will quickly cripple the leaves, which not only spoils the appearance of the plants, but also stunts their growth.

STOVE.—GARDENIAS.—The flowers of these sweet-scented plants are held in the greatest estimation during winter, at which time there is great difficulty in getting the buds to open, as even under the most favourable conditions in which it is possible to place the plants, the absence of sun makes the development of the blooms a slow process. Where flowers are wanted in the dull season it is well to have plants in different stages at the end of autumn. If large or medium sized specimens are to be depended on, care should be taken that they are as strong and vigorous as possible, with the wood well ripened, and the buds stout and plump at the close of the growing season. Plants that have been weakened by long flowering, or through being pot-bound, will continue to make growth so long as they are kept in sufficient heat, but they are useless for winter blooming, as in most cases the buds will drop without opening. It is a good plan to go over a portion of the stock about this time and pick off all the buds that are formed, reduce any straggling shoots a little, and if the plants are not in pots sufficiently large to carry them through the winter, give them a shift. After this they must be kept in a genial growing temperature in a light house or pit, raising them near the glass and giving no more shade than is requisite to prevent the leaves being scorched. Syringe daily, and keep them thoroughly free from mealy bug and scale. By following this course the plants will be in a condition that will give a better prospect of their blooming in winter, and if the system of striking stout shoots later on with the flower-buds just forming is adopted for winter flowering, the shoots will be in a right state to use.

RONDELETIAS.—The length of time that the flowers of these free-blooming subjects will last, coupled with their producing two crops in the season, entitles them to a place in plant stoves where a moderate amount of heat is used. When grown in an intermediate temperature, the first lot of bloom will be over. If shortened back in the way that is often done, there will not be a second crop afterwards, but if left to themselves they will make fresh growth from the eyes immediately below where the bunches of flower were produced that will set bloom after it has extended an inch or two. This second bloom will come in during the autumn. When it is over, the branches can be shortened back as necessary.

POTTING SPRING-STRUCK STOVE PLANTS.—Small plants that have been struck during the spring and that are of a lasting character, such as Ixoras, Allamandas, Francisceas, Bougainvilleas, and others of a like description, should be potted at once, so as to give them time to make as much growth as possible before the end of the season. Plants of the kinds named make much progress in little time, provided they receive the right kind of treatment. One of the first essentials to success with vigorous-growing stove subjects is, that they are liberally dealt with in respect to pot-room from the first. When, as often happens, the cuttings are allowed to remain for a time after they are well rooted in the pots in which they have been struck, the roots soon become stagnant, and what little top growth is made is weak and puny; whereas if the plants are potted on as soon as enough roots are present to support the tops, the shoots can then be stopped early and there is no loss of time. Give to each kind the soil in which it succeeds best, peat or loam, as the case may be, bearing in mind that all quick-growing stove plants do best and make double the progress if potted in material that contains a large amount of vegetable matter. Even when peat and loam are used, in which there is a large

percentage of fibre in the form of the roots of the Ferns and Grasses that have grown on them, the plants will do better if some of the earthy portion is removed. Those who follow the course advised will find in the progress the plants make a return for the extra quantity of soil required, and there need be no loss, as the portion rejected can be used for other plants of a less valuable nature. Where light fibrous soil is used, either peat or loam, the potting requires to be somewhat harder, so as to make the material sufficiently solid. T. B.

Aristolochia ridicula.—Nearly all the Aristolochias bear remarkably singular blossoms, and this is certainly no exception to the rule. It is a free-growing climber, requiring the temperature of a stove or that of an intermediate house, and when well placed will soon cover a considerable area. The leaves are somewhat bluntly heart-shaped, and 6 inches or 8 inches in diameter. The flower, which is borne on a long stalk, is strange, the tube being greatly swollen at the base, then it contracts abruptly, and after that widens gradually towards the mouth. The upper portion of the flower is divided into two lobes, which are towards their extremities studded with large and conspicuous hairs. The flower is of a peculiar tawny hue, with a network of darker veins. The peculiar corky appearance presented by the old bark is very marked in this species, and another noticeable feature is that the entire plant is hairy.—H. P.

Lagerstroemia indica.—This is an old garden plant in England, but it is only rarely one meets with it in anything like condition. In France, and all along the Mediterranean coast, it is one of the most conspicuous of summer flowering trees. At Kew there has been a large bush of it in flower for about a month, and it is still covered with bloom. The large bunches of pale pink flowers, of elegant and singular form, clothe almost every branch. In a warm greenhouse where there is plenty of light and air in summer, this plant ought to be perfectly at home. The Kew plant is growing in a shallow bed in the porch of the Water Lily house, where of course it gets plenty of air and little or no shade. In the autumn it is pruned back a little, and in winter it is kept quite dry. Growth begins again in March, and the flowers develop from the new growth when about 1 foot long.

GARDEN FLORA.

PLATE 710.

THE NEILGHERRY RHODODENDRON.

(R. NILAGIRICUM.)*

WHEN this plant flowered for the first time under cultivation in the gardens of Messrs. Lucombe, Pince and Co., of Exeter, in 1848, it was named and figured in the *Botanical Magazine* by Sir William Hooker, who described it as a distinct species allied to *R. arboreum*. That was in the early days of the Rhododendron "boom," when Dr. Hooker was introducing and figuring from wild plants all sorts of beautiful, and till then unknown, Rhododendrons of the Himalayas.

A good deal more is known about the genus now than was known then, and to-day the plant here figured is classed as one of the many varieties of the grand old *R. arboreum*. For garden purposes, however, it is abundantly distinct from the ordinary *R. arboreum* both as regards habit, colour of flower, and more especially the rich glowing brown on the under side of the leaves. At Kew it forms a bush 8 feet high and nearly as much through, compact, its crowded branches being clothed with handsome healthy foliage; whilst every spring each branch bears a

* Drawn for THE GARDEN by H. G. Moon in the Royal Gardens, Kew, March 8, 1889. Lithographed and printed by Guillaume Severeys.



bunch of beautiful rosy flowers. That shown in Mr. Moon's drawing is necessarily a small flower-head; in all other respects the characters of this plant are so clearly and truthfully shown in the plate as to render description unnecessary.

The Rhododendrons from the Himalayas are, as a rule, difficult to deal with in ordinary English gardens. Many of them are too large for a greenhouse, except it be such as that in which these plants luxuriate at Kew. Unless they are quite hardy, their cultivation is exceedingly difficult or impossible in the United Kingdom. If one were writing only for those whose gardens are in the warmer parts—as, for instance, Cornwall, South Wales, and the south of Ireland—then the Himalayan Rhododendrons would all fall under the heading of hardy trees and shrubs. But, unfortunately, the greater part of England and Scotland is too cold for these plants out of doors. Even so far south as Kew, only very few species from the Himalayas are satisfactory in the open air. They are all hardy enough to live out of doors without protection, but they make their growth and flower so early in the spring that both are either seriously injured or destroyed by frost. My advice, therefore, to all those who are not better favoured than Kew in regard to temperature, is not to plant Himalayan Rhododendrons outside.

On the other hand, there are very fine collections of these plants in Devon, Cornwall, Ireland, and South Wales. Mr. Llewelyn, of Penllergare, near Swansea, has a magnificent collection of them, all growing out of doors. Another collection, mostly of gigantic plants and all outside, is in the gardens of Sir Hussey Vivian, M.P., at Swansea. The plants at Kew in the temperate house, large as they are, are eclipsed by the huge bushes and trees of Himalayan Rhododendrons at Swansea. A fact worth noting in connection with the outdoor cultivation of these plants is that in both of the gardens mentioned, the Rhododendrons thrive best when planted under the shade and shelter of trees and where there is plenty of moisture. The effect of the trees on the Rhododendrons must be to retard growth in the spring as well as to shield from cold winds the young growth and flowers when they do come. There are many large collections of these plants in formation in the south of England now, and where they can be grown out of doors it would be difficult to find their equals among flowering evergreen shrubs. Anyone who has attended the fortnightly meetings of the Royal Horticultural Society will remember the grand displays of Rhododendron flowers from the gardens of Mr. Llewelyn and others. I have heard of 200 bunches of flowers being cut from one plant of Rhododendron campanulatum in Sir Hussey Vivian's garden for the decoration of a church at Easter, and there were so many on the plant that this number was not missed. As many as 1200 heads of flower have been counted on this one plant, and almost all expanded together. There are numerous hybrids amongst the perfectly hardy Rhododendrons, which have been obtained by crossing *R. arboreum* with others, but not one, so far as I know, possess all the qualities of this grand species. There is no more beautiful plant than a well-grown *R. Aucklandi* when covered with its huge flowers, white as snow, and elegant, though huge. *R. Nuttalli*, *R. Falconeri*, *R. argenteum*, and *R. calophyllum* are other handsome large-flowered, large-growing kinds.

A deep, moist, peaty soil is what these plants must have, whether indoors or out. Plenty of water is absolutely necessary, and syringing

overhead daily is good for them in the growing season.

R. nilagiricum is one of the earliest to flower, usually expanding about the beginning of February. This applies, of course, only to the Kew plant, from which the figure was made. Out of doors perhaps the flowers develop later.

W.

FRUIT GARDEN.

W. COLEMAN.

STRAWBERRIES FOR FORCING.

THE weather for the past four weeks has been more favourable to the spread of mildew than the production of robust runners, but so great is the improvement in the system of making fresh plantations annually that those who cultivate well and have plenty of water can always find enough and to spare for their own use. Strawberry culture and Strawberry propagation, although carried on in the same garden, indeed are quite as distinct as the grafting and formation of Apple trees and the profitable culture of the fruit. Years ago I have seen gardeners searching old beds for weak, wretched runners for forcing, and at the present time we are sometimes advised to turn out betimes early forced plants for early runners. If we wish to wait until August for poor runners or to perpetuate red spider and mildew, why then we may trust to old beds and forced plants; but the days of mediocrity have gone by, and those who now excel as Strawberry growers follow a very different course. Plants from which the supply of runners for forcing or turning out upon open quarters annually is taken should be put out the year before upon the best prepared ground in the garden fully exposed to sun and light, convenient for water, and in no way connected with those intended to yield a supply of fruit. If well mulched and watered through dry autumns and relieved of all their flower-scapes as soon as they become perceptible, strong runners in abundance with short-petioled leaves will be layered and rooting before forced plants, no matter how early they are put out, show signs of pushing a single wire. These maiden plants, as a matter of course, should be kept liberally mulched and watered through the spring, and any that miss flowering, or rather the attempt to flower, should be destroyed, as I have found that strong maidens which do not show the first year remain wiry and blind so long as they are allowed to continue upon the ground. Another important matter, not only in keeping stocks true, but also in preventing the different varieties from degenerating, is the frequent introduction of fresh runners from a distance, as by this means weakening diseases which have become chronic are swept away into the fire, whilst the preparation for their successors, as a rule, is a little above the common. Constant change of ground and the introduction of a little fresh loam at planting are fine preventives of degeneration, but notwithstanding, the main constituents of the soil are the same and the plants in due course fall back, as does the Potato under equally careful management. Some varieties fall off more rapidly than others; in fact, they become soil-sick, and next to getting new varieties equally good in quality, the next best remedy is the introduction of fresh blood from distant parts of the country. One of the best for holding its own and fruiting well when over four years old is a variety sent out by the late Mr. C. Turner under the name of Oxonian. Varieties which have degenerated here are President and Héricart de Thury, the latter especially, not so

much in quality as in quantity. When introduced, now some years ago, from three dozen plants I gathered at the first picking as many quarts of fruit, and although my stock has been renewed from Scotland, plants equally young and vigorous are much less prolific, whilst for forcing it is almost a failure.

Those who have not made preparations for layering from plants which have been denuded of their maiden flowers cannot do so this year; but now is the time to prepare stocks for another. Their preparation at home or abroad is matter for their own decision, but strong plants which have been hand-laid in small pots or sods of turf, the first runner from the parent only, should be ready for turning out in August. We generally put out two rows of each variety, giving each plant a little fresh heavy loam, mulch and water at once, and keep them free from weeds and autumnal runners. Early in February they are remulched, and in due course stripped of every flower. When the runners start they are drawn in from the outsides, and the pots are introduced right down the centre. Small pots are plunged to the rims, but fruiting pots 5 inches to 7 inches in diameter, the size I use at once for forcing plants, are placed on the level. Having an abundance of water close at hand we never wait a single day, no matter how hot or dry the weather, but water copiously, not only the runners, but also the parent plants which produce them. Newly layered or potted Strawberry plants are not improved by incessant overhead watering—at least this is my experience. A nice cooling shower after a very hot day is quickly administered, but unless the water is proportionately warm and soft, the young foliage burns, and soon becomes hard and spotted. Good hand-watering answers best, as the moisture which rises from the ground keeps the under sides of the leaves fresh and free from spider, no matter how hot and dry the season. When the runners have made sufficient roots to prevent the tiny 3-inch balls from falling to pieces when turned out of the pots they should be detached and planted at once, as the delay of a single day after they begin to coil and bind is so much time wasted. It may not always be convenient to transfer them at once to their permanent quarters, but a strong effort should be made, for, independently of loss of time, no amount of care can place the pot-bound plant on a level with its neighbour whose roots are running out and ramifying in all directions. Plants intended for forcing, in like manner, should be separated as soon as they feel the sides of the pots, especially where the latter are closely blocked together, and a current of fresh air is excluded by the foliage of the parents. From the propagating ground the plants may be taken direct to the growing station, a hard flat space through which worms cannot penetrate. As each plant is moved, the bottom of the pot should be washed to clear the aperture of soil worked in by busy moisture-loving worms, and the latter having got through the drainage, expulsion must be secured by one or more soakings with clear lime water. Some pertinent remarks having recently appeared upon the use and abuse of liquid, I may say I think the pot plants should be moderately stimulated from the time the balls begin to mat until the foliage shows signs of maturity, when plunging, or the use of pure water will suffice through the dormant period. Clear, warm, diluted liquid again from the time the fruit is set and thinned until the first berry shows signs of changing is indispensable to size, and provided it is then discontinued the flavour in no way suffers. Clear, home-made liquid, used in moderation, is the pot cultivator's best friend,

but, like edge tools in inexperienced hands, it does harm when applied at the wrong time too strong or too abundantly.

POT STRAWBERRIES.

MR. DOUGLAS's method of cultivating these appears to be almost identical with that usually followed in private gardens, but it differs in one important detail from that practised by market growers generally. Layering the runners into small pots, and then shifting into larger ones, involve an amount of labour and care that have been found to be quite unnecessary. Quite as good plants can be grown by layering into the fruiting pots at once, and it is easy to see that by so doing the work is rendered more easy. I have tried both methods and the results were equal as regards quality of plants, but a fair trial convinced me that the labour of repotting was quite thrown away. An objection that I have seen made to layering into the fruiting pots is, that the top portion of the soil in them does not get so full of fibres as it should do, but when this occurs, it is the fault of the grower, and is generally due to the compost not being made firm enough. In filling the pots the compost ought not to be more than just moist, in which condition it can be rammed in tightly, and will not bind or become too close later on. The advantage of making the compost so firm is that the roots are continually being checked in their downward progress, and consequently are induced to ramify, and thus fill the soil with fibrous roots. When, on the contrary, the compost is rather loose, the roots strike at once down to the bottom of the pot and out of the drainage hole. Plants in this condition are more likely to suffer from over-watering, because the roots are mostly at the bottom of the pot. If they should happen to go wrong there are no others worth speaking of to keep the plant growing.

I do not know of one Strawberry grower for market who gives himself the double trouble of layering and then repotting, but the runners do not come from fruiting plants, but from young ones put out either in autumn or in spring in good ground and that are doing double work in furnishing good runners and growing along into bearing plants for the following year. So far as the application of liquid manure is concerned in the fruiting stage, all I can say is that Mr. Douglas's experience is just the reverse of mine. I grow for profit, and my object has always been to get as much weight as possible. My experiments always led to the same result—that the best nourished plants were the most profitable. I could never do much on the pure water principle, but a handful of guano in the tanks now and then had a striking effect on the swelling up of the berries. My belief is that the over-doing of the liquid manure is bringing on a reaction against it, and now, instead of the plants being gorged beyond the endurance of their active roots, they are likely to want for needful help. I have seen liquid manure applied to pot Strawberries that would have been almost too strong for the most vigorous-rooted plant in cultivation. Liquid manure to be effective should never be stronger than the plants can take up at once, and therefore whatever ingredient is used should no more than colour the water. "Hortus," usually clear and explicit in his writings, is not quite so at p. 596. He says, "pot-bound roots appeal for rest and more space, not more food." By space I suppose that he means a more extended root-run in fresh soil, and what is this but giving them more food? Then he says, "that to stuff roots with rich food during their semi-dormancy is like putting more into a vessel already full. Not more and stronger stimulants, but longer and deeper rest is what the plants most need at this stage." I have time after time found that the early-layered plants when they did well had their pots full of roots by the middle of September, and I have repeatedly noted the excellent effects of weak doses of soot water given at that time to such plants. "Hortus" may describe plants at that period as semi-dormant; all I can say is that mine have always been many degrees removed from that condition. September is the month in which a Strawberry makes

itself and forms its crowns, their plumping up not being accomplished until October is well in. Neither do they come into a dormant condition before November.

J. C. B.

BARREN FRUIT TREES.

How many complaints are again coming to hand of barren fruit trees, although the promises of spring were so fair, and the weather was all that could be desired, yet it is an undoubted fact that in many gardens it will be again a year of failure. I have no reason to complain myself, or indeed for my own immediate locality, as the crops are better than they have been for some years. In looking, however, through the gardens and orchards in neighbouring counties, and above all by reports I get from counties that have a much larger area under fruit than we have, I come to the conclusion that the failures will be more numerous than the good or even average crops. The old plan of laying all the blame of loss of crop on spring frosts is, I think, about worn out, for this season was remarkable for its absence of such visitations. I notice that with us the only Apple that failed to set a good crop was Court Pendu Plat, or the Wise Apple, that from its extreme lateness in blossoming was not open this year until the first week in June, when the weather was quite summer-like, yet the bloom dropped off without setting. This is the condition of the majority of trees in many gardens that I have seen. The general opinion seems to be that unripe wood, owing to the dull sunless season of 1888, is the cause of the bloom failing to set, and if this is correct, every owner of a garden ought to pay more attention than is generally done to getting the wood well ripened. Although we are greatly at the mercy of the elements in this matter, we can do a great deal, more especially with wall and trained garden trees that are more under the control of the cultivator than the naturally grown orchard standards, to which but little aid can be given in regard to ripening the wood. In this matter of perfecting the wood of the current year's growth, the most important thing to my mind is to get the summer pruning and stopping done in good time to keep useless leaf growth from carrying off the sap that ought to be diverted to perfecting the wood and buds that are to be retained. This can only be done by keeping the first crop of leaves in good condition until they drop off naturally in the autumn, for if they are destroyed by insects no amount of late lateral growth will compensate for their loss, and to this cause alone a great many of the failures this year may certainly be set down. Caterpillars stripped whole orchards last year, and in these I need hardly say there are very few fruits this year, and unless some vigorous steps are taken to stamp out this pest it seems certain that it will render our orchards worse than they now are. In this locality we escaped the plague of caterpillars, and the wet season just suiting our light soil, the trees carried a splendid crop of foliage and perfected their growth well. Those who have fruitless trees will find that no tree can perfect its fruit buds without the aid of the first crop of foliage, and to preserve this in good condition ought to be the first aim of the cultivator. If fruit does not follow, try root-lifting, which seldom fails to check over-luxuriance and bring the tree into a fruit-bearing condition.

J. G. H.

Lemon cultivation in Sicily.—The United States Consul in Messina, in a recent report, says that the well-known variety of Lemon called the "Lunare," or ever-bearing, produces blossoms and fruit every month in the year. When, however, during the Indian summer rainy days are succeeded by dry, clear weather, Lemon trees of different varieties immediately bloom, and if, owing to the mildness of the season, the fruit sets at the beginning of winter, it will come to maturity at midsummer. Lemons are divided into two classes—the true and bastard Lemon. The former is produced by the April and May blooms, the bastard by the irregular blooms of February, March, June, and July, which depend upon the rainfall or regular irrigation and the intensity of the heat

during the summer and winter seasons. The true Lemon requires nine months to reach maturity—from the bloom in May to the mature fruit in January. There are but three harvests of the true Lemon; the first in November, when the Lemon is green in appearance and not fully ripe. These Lemons are the most highly prized; they possess remarkable keeping qualities, and are admirably preserved in boxes in warehouses from November until March, and sometimes as late as May, and then shipped. The second harvest occurs in December and January. These Lemons must be shipped three weeks after gathering, by which time they have acquired a yellowish appearance. The third harvest occurs in March and April. This fruit is shipped as soon as gathered, spring prices being very high. The uniformity in size of Lemons is due to the monthly harvestings from October to March. Bastard Lemons present well characterised peculiarities in shape and appearance; their inner skin is fine, and adheres tenaciously to the meat; they are hard, rich in acid, and seedless. The bastard Lemon, produced from the bloom of June 1 is still green the following April, and ripens only towards the end of July. It remains on the tree over a year, and sells well in summer. Besides the March and June bastards there are yet others that remain on the trees from twelve to eighteen months. The true Lemon can be left on the tree until the end of May or the first week in June; but it interferes with the new crop, drops off from over-maturity, and is liable to be attacked by insects. The bastards, on the contrary, withstand bad weather and parasites, and they mature from June to October. It is estimated that four times more Oranges than Lemons are lost in the groves and warehouses. Good drainage is most essential in Orange and Lemon culture. In Sicily Lemon cultivation is 30 per cent. more profitable than that of Oranges, for the trees are more prolific and the prices higher.

Ripening the wood of fruit trees.—There appears to be a general concurrence of opinion that the failure of the fruit crop is owing to the unripe condition of the wood, caused by the wet, sunless summer of 1888, and as we appear likely to get different weather this year, I would like to caution growers against carrying the drying process too far, as my impression is that drying off is very frequently mistaken for ripening off, although it will be seen, after a moment's reflection, that a tree or plant cannot perfect its growth if it is dry at the root. Last season, although deficient in sunheat, did not give us any too much rain, for our soil is porous and naturally well drained, and our fruit trees need the full average rainfall to perfect their growth. Those who have been bewailing loss of crops through the supposed unripeness of the wood must beware lest they rush to the other extreme, and by not giving the trees enough water to make up for any deficient rainfall, aggravate the evil they seek to avoid. Ripening of the wood can only be performed through the agency of the leaves, and it is therefore of the utmost importance to keep the leaves healthy until they drop naturally from the tree, for if their fall is accelerated through drought, devoured by caterpillars, or rendered useless by blight, fruit in the following season, even though the spring be very propitious, may be looked for in vain. Owing to the long spell of harsh, dry wind and very little rain, red spider is very troublesome both out of doors and under glass, and American blight spreads rapidly in a fine dry season. Those who value their fruit trees will, I am sure, spare no pains to extirpate these pests, so that by the aid of fine healthy foliage the wood of the current year's growth may be thoroughly ripened, but not dried off.—J. G., Gosport.

The Victoria Plum.—In Middlesex, where the Victoria Plum is largely grown for market purposes, the crop is a very poor one indeed, and, as far as I can learn, this appears to be generally the case. But there are exceptions, for when recently at Kettering I saw some trees breaking down with the weight of fruit upon them. Are such exceptions numerous? In this district the trees bloomed profusely, and they appeared to set a good crop, but

instead of swelling into size, the fruit turned yellow and dropped from the trees. As no frost occurred at the blooming period to affect the blossoms, I should think the conditions necessary to a perfect fertilisation of the blossoms were wanting at the time the trees were in flower.—R. D.

WORK IN FRUIT HOUSES.

FIGS.

EARLY trees from which the second crop of fruit has been gathered must be thoroughly cleansed forthwith and well watered, as spider can hardly be kept in abeyance, much more destroyed, where the roots are kept in a semi-dry condition. If the trees are fairly clean, good syringing every evening for some time to come should thoroughly destroy ordinary pests, but otherwise, especially where bug prevails, insecticides must be introduced and then the enemy can only be scotched until the leaves fall. Hot water at a temperature of 120° soon settles brown scale and leaves the foliage uninjured. But bug, a more formidable enemy, cannot be destroyed without the aid of spirits of some kind. A wineglassful of paraffin or Fir-tree oil, well mixed in 4 gallons of soapsuds, used late at night and syringed off early the following morning will greatly reduce the stock, when a little attention with methylated spirit until the wood is ripe will prevent it from spreading to other compartments. It is yet rather early to commence pruning forced trees; not so to thin out all weak growths on barren pieces which have performed their office and may be shading promising shoots. In some gardens extension trained trees are allowed to mature the most forward fruits found hanging after the second crop is over, but they come in when finer Figs are plentiful and interfere with the ripening and resting of trees which should be ready for a fresh start in November.

Successional trees now in full bearing will require an abundance of air and good syringing about the stems and walls when the days are bright and fine, but fire-heat having been discontinued, a cold, damp atmosphere, which causes the fruit to spot, must be avoided through the night. Much, of course, can be accomplished by ground-line ventilation and turning the leaves aside to expose the fruit. But then even an excess of moisture must be guarded against, as no amount of care will preserve a ripe Fig when it is touched by spot. If the trees are planted out in good inside borders and the shoots are allowed to extend, they may be converted into perpetual bearers by judicious thinning and good feeding, but here, as in the early house, nothing will be gained by trying to burn the candle at both ends, especially after the fruit in the late house is fit for use.

Late houses.—Figs on walls, certainly inland, being rather scarce, and other hardy fruits by no means plentiful, the produce from these structures this year will be exceptionally valuable. These as a matter of course, can be forced to shake hands with the last gatherings from the second house, or they may be retarded to come in through August and September. In either case, the two must be copiously syringed and well fed, the period of ripening being regulated by throwing the ventilators constantly open, or early closing with sun-heat and moisture. The main crop of fruit gathered from late houses is produced by the wood of the preceding year, but the season being so fine and the demand great, a few of the most forward of the spring shows may be allowed to swell to maturity. The taste for good Figs having rapidly increased, more, I think, should be done with the cream of the old and new varieties under pot culture. A light span-roofed house, well ventilated and with a hot-water pipe running round it, would grow the choice Italian varieties to perfection, and all of these being prodigious bearers under restrictive treatment, they would prove most interesting and profitable companions to pot Pears through the autumn. As these pot trees are portable, and can be kept dry through the winter, fire-heat is not absolutely necessary; in bad seasons, however, it is a very important factor. Pot fruit trees of all kinds for a

good number of years have made their way under strong opposition, but they still hold their ground, and those who have devoted sections of roomy ranges to Peaches and Nectarines, choice Pears, late Plums and Figs, will find their produce invaluable in this year of scarcity.

CHERRIES.

All early houses containing permanently trained trees must now be stripped or most abundantly ventilated. Early to start and early to rest, the main point in the management of these trees is the retention of the foliage. Spider, the most troublesome pest, frequently makes rapid strides when ripe fruit precludes the syringe; but once it is gathered, soap-suds and pure water through the hose should be laid on most vigorously. Summer rains in seasons like the past may keep the roots wet enough, but this being an exceptional year the borders should be well mulched, if only to keep them cool, and, as a matter of course, watered very freely. All pot trees shifted some three weeks ago, as well as others which did not require potting, may now be removed and plunged in the open air for the remainder of the season. As these, like the permanent trees, must be induced to hold their leaves, good mulching, copious watering, and frequent syringing after hot days are imperative.

Late houses containing the cream of the late Bigarreaus will now be an interesting sight to men and birds, and as such must be carefully guarded. If well managed the fruit upon these trees will surpass the finest met with upon walls, but liable to suffer from damp. The pots should be completely buried in non-conducting material to save incessant watering. The roots nevertheless must be kept thoroughly moist, otherwise the fruit will soon shrivel. This, however, can easily be managed by drawing the dry covering away from the tops of the pots on fine mornings, watering well and replacing it to prevent the spread of moisture. These remarks apply to wet, unsettled seasons, and not to hot dry summers like the present, when damping the floors under full ventilation is advantageous. In such weather, shade too is beneficial, and as birds must be kept out, the whole roof and sides of the house may be encased in a double thickness of string netting.

PLUMS.

As many of the early varieties will now be clear of fruit they may be removed and plunged in the open air where they can be mulched, watered, and syringed with the pot Cherries. Black and green-fly being more troublesome than spider, the house if necessary should be well fumigated before any of the trees are removed, when at one stroke the early and late varieties will be relieved of a troublesome enemy. When fruitless trees have been removed those retained may be rearranged a greater distance apart, as Golden Drop and other choice late varieties must have plenty of light and air to colour and ripen them properly. These will require good rich top dressing, copious feeding with clear diluted liquid and careful syringing, if not over the fruit, certainly about the stems, floors, and walls, both early in the morning and late in the evening. The beauty of a Plum is its bloom, and this, like that of the Grape, is soon marred by spotting from sprinkling, but having plenty of pure soft water, an occasional bath for the present will do no harm, provided every part of the fruit is thoroughly wetted.

PEACHES.

As the trees in early and succession houses are cleared of fruit, prompt attention to pruning, cleansing, and the rearrangement of the shoots will be necessary. A master of the art of Peach culture will know to a shoot what he must retain for tying in next autumn, and as all superfluous wood which has borne fruit will interfere with the ingress of light and the circulation of fresh air, now is the best time to cut it away. When this has been removed, a complete overhauling of the trees, whilst giving a good deal more room, will enable the operator to cover all the bare stems and aged branches with young shoots and foliage, the best of all shields against sunstroke. If hay, straw, or litter have been introduced, the whole mass may be cleared away, as

they only harbour woodlice and other vermin, when, the better to ensure an even distribution of water to the roots, the borders may be lightly pricked up with steel forks, mulched or otherwise, according to the vigour or weakness of the trees. If the wood is fairly strong and the foliage good, it is best to err on the safe side by eschewing animal manure, and giving a thin top-dressing of fresh maiden loam and lime rubble. Trees, on the other hand, which from age or heavy cropping, show decided signs of weakness, may be stimulated into plumping up their buds; but in this case even a mixture of soot, bone-dust, and fresh soil, well washed into the surface with clear diluted liquid, will answer better than solid manure. The trees, at any price, must be kept clean by copious hosing on fine evenings or by smoking, and the situation being good, the ventilators from this time forward may be left constantly open.

Succession houses in which the fruit is now swelling very fast must have an abundance of tepid water and thorough syringing twice a day with soft water. The latter in many cases will now be scarce, but so important is this pure element amongst woolly-coated Peaches that I would rather reduce the syringing to once a day than use water charged with lime or other deleterious sediment. Soft water is equally acceptable to the roots of the trees, and were tank arrangements better looked after, tens of thousands of gallons of this invaluable liquid which now runs down the drains might be saved for use throughout the summer. It is more than probable that the long spell of drought may be followed by the opposite extreme, and that tanks in all the houses will be overflowing. If so, be the time Sunday or week day, all this rich fluid should be dashed over the inside borders, no matter how recently they may have been watered. An abundance of air, without exposing the Peaches to drops of rain, must be given from the time the colouring process becomes perceptible, and size may be increased by pinching the points of shoots, which in due course will be removed, also by closing for a couple of hours—say from 4 o'clock—on fine afternoons. Complete closing at this time of year is not, however, absolutely necessary, as I have found shutting the top-lights when the house is syringed and leaving all the front ventilators keep the structure full of moisture without excluding fresh air.

Late houses.—If the fruit from these structures is intended to precede the supply from open walls, the trees should now be well thinned and tied down, otherwise the young growths may be allowed free licence for some time longer, as Peaches not only make slower progress, but make the finest fruit under the natural shade of their own foliage. Not infrequently towards September we see late Peach houses pestered with canvas and other flavour-destroying materials for keeping back ripe or semi-ripe fruit, but this is altogether a mistake, as Peaches at this stage cannot have too much light and air. The most experienced may be thrown behind in cold sunless seasons, but the summer must be abnormal indeed if, by profuse ventilation, damping with cold water and shading for a few hours through the early stages, the fruit cannot be made bright in colour and piquant in flavour by ripening under the influence of sunlight and fresh air. All borders, be they inside or out, should be heavily mulched with good fresh stable manure; indeed so important is this material not only for keeping in moisture, but also for retaining and giving it off gradually on hot days, that we invariably cover every particle of the inside area and lay on the hose as often as it becomes dry. By adopting this plan and adding a little fresh material occasionally, the ammonia constantly rising keeps the foliage clean, dark, and healthy, and reduces the necessity for direct syringing to one operation on the hottest July days.

WORK AMONGST HARDY FRUITS.

Mulching.—The drought having gone thoroughly into the soil, the most important work in the fruit garden is the application of supplementary mulching. Free growing trees which have not set a crop of fruit so far have derived benefit in the form of

a wholesome check from the dry weather, and acceptable showers, now threatening, will most likely enable them to plump up their flower buds in a satisfactory manner. Trees, on the other hand, swelling light crops or which have been root-lifted must be liberally mulched, and as a matter of course watered. Half rotten manure or good fresh stable litter which feeds the roots as well as the foliage no doubt answers best, but a heavy covering of non-conducting material of any kind in exceptional seasons like the present is acceptable not only as a moisture-retaining substance, but also as a protector to the tender roots which should be kept close to the surface. Mulching in all cases should be preceded by a light pointing up of the hard baked surface soil, otherwise water in quantity to do more good than harm will run off, when the roots drawn up to the surface will fail or perish. Liquid manure in a mild form is always acceptable to starved or heavily cropped trees, and this good rotten manure well washed in with pure water supplies. But lacking a stimulating mulch, a mixture of bone dust, wood ashes, soot, and a dash of guano may be sown over the newly-broken surface prior to the application of poorer covering and pure water.

Washing and watering.—A late mulch when the borders are dry, without the aid of water, may give temporary relief in the retention of the little moisture left in the soil, but in order to make it fully and quickly felt the hose should be laid well into the heads and stems of the trees. Grub and aphid having left such an accumulation of dead leaves, filth, and imperfect fruit, a thorough washing out will add considerably to the health and vigour of the trees, whilst the element thus employed will do double duty in the conveyance of stimulants down to the roots. Watering to be of any use must be thorough, and it must be followed up until the clouds have charged the dry atmosphere with moisture, when it may be discontinued or persevered with, as an artificial soaking on the eve of a fall of rain acts like magic upon the roots near the surface of the soil.

Pruning.—All summer pruning should now be finished, and cleanliness being so essential to health, each tree should be thoroughly hosed as the superfluous shoots are removed. The Apple trees in the garden with us almost invariably come last to the knife, but instead of shortening the leading shoots of pyramids and bushes, we pinch the points of the strongest only, and convert each branch into an extension cord by shortening the lateral growths. There prevails an idea that Apples on the Paradise and Pears on the Quince must be incessantly pinched and re-pinched to three or four leaves on each shoot, and that each tree at the end of the year must represent an attenuated candle light extinguisher. When trees are planted at the rate of 2000 to 4000 to the acre, this shortening the life of dwarfing stock becomes absolutely necessary; but it is a practice which may be avoided by planting half the number at half the cost in trees and labour and allowing the young shoots to extend. Apple trees on the Paradise generally throw out one or two extra strong shoots, which left alone soon upset the balance; in fact, they absorb all the sap, and in the end are shortened back to match the whole of the weaklings they have robbed. But why allow them to grow when pinching at the fifth or sixth leaf will cause a general diffusion of the sap, and still in miniature the framework of most perfect extension trees will be formed? Their progress at first may be slow—latterly not more than a foot in a year—but still the roots and stems and leaves are increasing, and two points—the judicious pinching of runaway shoots and liberal thinning of the fruit—being attended to, there is nothing to prevent a tree on the Paradise from extending for twenty years; indeed, the care devoted to all infant life given to the Apple on the Paradise, worked low as a matter of course, will set it on its own roots, where it will remain healthy and fruitful at the end of a lifetime. Some trees on the Paradise planted here twenty-five years ago have been top-dressed from time to time

until the working is quite below the surface, and many of the main branches as well as the stems have made roots for themselves. Some of them are as many feet through the half globular heads, which are not more than 9 feet high, free from canker, and very prolific. W. C.

KITCHEN GARDEN.

TURNIPS AND THEIR CULTURE.

ENGLISH seed catalogues include a fairly long list of varieties, or about sixteen in all, of Turnips, but nearly double that number are to be found in Vilmorin's and other French seed lists, though in all probability a considerable number of these might be eliminated with advantage. None that I have yet tried are so well adapted for forcing and early sowing generally as the Extra Early Milan, this quite superseding the Early Purple-top Munich. Early White Stone is also of fairly quick growth, but both this and the American Red Stone are of more value for the autumn than for the early summer crops. As a rule, these strap-leaved varieties are of second-rate quality, the one noteworthy exception being found in the Chirk Castle Black Stone, which, I presume, belongs to that section. The last-named I hold to be



Turnip, Chirk Castle Black Stone (one-fifth natural size).

one of the most valuable Turnips in cultivation. If sown not later than the third week in July in cold districts and a week or so later in more favoured localities, the chances are a capital lot of medium exceptionally hardy roots will be obtained. It has a black skin, but the flesh is white and the most delicately flavoured of all Turnips.

In France they cultivate a class of early Turnips very rarely grown in this country, but immense quantities of roots are imported, and are to be seen not merely in all London markets and shops, but also in all the principal provincial towns before home-grown roots are generally available. These, which I believe are the same as are included in some English catalogues under the name of Extra Early Paris Market, and in France are known as Navet des Vertus Marteau, at first sight are frequently mistaken for gigantic oval-shaped Radishes, being very much longer and quite distinct in form from any varieties of Turnips generally seen in this country. In reality they are not so early by at least a fortnight as the Early Milan, but in point of quality they are altogether superior to it. Among the various

vegetables kindly sent me for trial by Messrs. Vilmorin-Andrieux and Co., Paris, were several distinct varieties of Turnips, and I find the new half-long forcing White Vertus well worthy of cultivation in British gardens. It forms rather more foliage than the early strap-leaved varieties, but not so much as the Snowball type, and in point of earliness is midway between the two sections. The roots are each from 4 inches to 5 inches in length, and rather more than 2 inches through at the thickest or lowest end. Roots pulled from a south-east border on which no rain has fallen for upwards of three weeks and tested this day (July 9) were found to be still very finely grained, tender and mild in flavour. They were an agreeable surprise in fact, and an experienced cook expressed the opinion that they were very superior to any other varieties tested this season. I am also growing the Long White Meaux or Cow-horn for the first time this year, but it is not yet fully grown, and I cannot say anything as to its quality. In shape this more nearly resembles a Carrot, and it is doubtful if it will ever become popular in this country. To succeed the extra early varieties we have the Snowball or a good selection of the same to rely upon, this also being the favourite for exhibition purposes. Very fine in every respect is Veitch's Red Globe, this distinct and handsome variety being alike good in the summer and autumn, being also one of the best for winter use. It attains a rather large size, the upper portion of the root being bright crimson in colour, and the remainder quite white, and no fault can be found with the quality. The Early White Stone is also suitable for late sowing, as it is of quick growth and keeps well. Those who like the yellow-fleshed varieties should grow Golden Ball or Orange Jelly (see illustration), this being hardy and good in quality. We are also giving a trial to the yellow flat purple-topped Montmagny (see figure) for late crops, but nothing will prevent a large breadth of the Chirk Castle Black Stone (see engraving) from being most extensively sown.

Turnips rarely succeed well on a hot south border, and we obtain our earliest supply, or those to succeed the frame-grown crops, from an east border, about three sowings being made, commencing late in March or early in April, and making the last sowing about the end of May. To be good, Turnips must be grown quickly, and it is useless, therefore, to sow the seed on very poor ground. Supposing, however, the ground has been well manured for any previous crop of a different character, there is seldom any necessity to manure afresh for Turnips, the exceptions being when the soil is shallow and "hungry." Soot or a mixture of soot and lime must of necessity be frequently dusted over Turnips when the foliage is damp, in order to keep off slugs and check the spread of a tiny destructive fly or beetle. This dressing also has a stimulating effect upon the growth of the crops. The strap-leaved varieties require very little room, as they form good bulbs, although pressing against each other, and supposing the rows are 12 inches apart, it is only necessary to thin out the young plants to about 6 inches apart. Those with more and coarser foliage, notably Snowball and Red Globe, must, however, be allowed much more room or they will fail to bulb satisfactorily. The rows ought to be not less than 15 inches apart, and on strong soils 18 inches is not too much, the plants being eventually thinned to about 9 inches apart.

Probably in some districts an east border would not be sufficiently cool for summer Tur-

nips, and these must, therefore, be grown in cooler quarters. We have a rather large north border, and this suits Turnips admirably. In 1887 we obtained a capital lot of Turnips in August from this cool border, and as both second early and late varieties were sown, the supply held out till the spring. In this instance the seed was sown late in June, but this year the same plot was not sown till a



Turnip, Orange Jelly (one-fifth natural size).

month later. In the more southern districts, at any rate, there is no necessity to reserve ground especially for main crop and late Turnips. This season, for instance, it ought to be possible to clear a great breadth of ground of early and second early Potatoes in time to sow Turnip seed. It should be done, however, not later than the first week in August, as there is no certainty about any sown later arriving at a useful size, though the tops from them might be of some value. In any case it is unwise to long defer the sowing, the wiser plan being to sow a few rows according as the ground is cleared, and thereby be certain of a portion of the plants forming bulbs before wintry weather sets in. All that is necessary is to clear the ground of all rubbish, the surface being then levelled and



Turnip, Yellow Flat Purple-top Montmagny (one-fifth natural size).

broken down fine, firmness also being desirable. If the soil is at all dry, water the drills prior to sowing the seed thinly and evenly, covering with fine dry soil. Every sound seed will quickly germinate, and the plants ought to be protected with the aid of soot, lime, or wood ashes from birds, slugs, and fly, and be early thinned out. An occasional surface hoeing is all the

further trouble necessary, and a good crop, the value of which can hardly be over-estimated, will result.

It is advisable, in order to be prepared for any emergency, to lift and store a portion of the crop before severe frosts intervene. If the tops only are lightly trimmed off and the roots stored in a heap in a cool dry position, well covered with straw and then soiled over, an outlet being provided for vapour, or much as Potatoes are clamped, Turnips will keep plump and fresh till the spring. They will also keep for a long time in a cool shed. Our favourite, Chirk Castle Black Stone, is rarely injured when left in the open ground, and we only pull and store it when it is necessary to prevent top growth or greens being formed, this spoiling the roots for cooking.

W. IGGULDEN.

KITCHEN GARDEN NOTES.

EFFECT OF RAIN ON POTATOES.

A RATHER long spell of very hot and dry weather brought on Potatoes rapidly, and on shallow gravelly or sandy soils especially, the Ashleafs and other early varieties had commenced to ripen by the second week in this month. A heavy downfall of rain, unless timely precautionary measures are taken, has a most disastrous effect on these well-advanced crops, and causes many of the tubers to start into fresh growth. When this happens the first formed tubers are spoilt, while the second crop rarely matures properly, and in any case the unavoidable mixture of the two renders it almost impossible to cook and serve them properly. Where either the haulm was partially ripened, or was green, erect, and had not ceased to grow, there is less danger of growth commencing, and most is to be feared in the case of those with foliage still quite fresh and tubers in a semi-ripe state, this check being brought about by drought. In this district the tubers of all early and second early varieties are of good size and very plentiful, and rather than that a second growth of the tubers should spoil them, all ought to be lifted on the first signs of its taking place. This early lifting, even if it should injure the still delicate skins of the tubers, does not impair either their keeping or table qualities, and no one need therefore hesitate to proceed with it in the usual manner. I do not, however, counsel excessive haste in the matter, as this might be fraught with greater danger to the crops than leaving them in the ground. The rows ought to be frequently examined, and not till the tubers are seen to be sprouting afresh should the crops be lifted, unless indeed the skins are fairly well set, in which case early lifting, or even the drawing of the haulm, is a good preventive of this and disease. The stronger growing late varieties if checked in growth by drought will not befit to lift, and must be left to take their chance. It may be the tubers will not form a second growth, but will continue to increase in size, a heavy crop being the result, but if they do push out a number of fresh tubers these ought to attain a useful size and be easily distinguished and separated when lifted from the older ones. Where ground is needed for Strawberries or a variety of winter crops it is in any case, or whether a second growth or disease sets in or not, advisable to lift and store the crops of early and second early Potatoes before the haulm is dead or the skins of the tubers set, and owing to the extra strong growth of the haulm this season the sooner this is cleared away from the rows of Brussels Sprouts and Broccoli planted between the better. Those who also plant between the main crop or coarser topped varieties will have to trim the haulm of these, or otherwise it will smother, or at any rate badly weaken the plants. This may be done in moderation and without much prejudice to the crop of Potatoes.

CELERY.

Celery has grown well where put out early and only too well in the beds where pricked out, this necessitating transplanting when much other work

needed attention, or otherwise the plants would have quickly been spoiled. Most of the later raised plants are now large enough to transplant to the trenches, and advantage should be taken of showery weather to proceed with this important work. Not that showery or even dull weather is absolutely necessary for the purpose, as sturdy well-prepared plants may be moved in the hottest weather. If the plants in roomy seed beds were duly thinned out and well exposed to all weathers, they may safely be transferred direct to the trenches; in fact this plan is preferable to pricking them out into shallow beds. When the plants are dibbled out where they are to grow, the roots are not subsequently shortened in any way, and they therefore spread clear of the trenches into the surrounding ground. Extra stout growth is the result of this unchecked root-run, the quality being also superior. Plants thus grown are more independent of the watering-pot than their root-pruned brethren, and were it not so, market growers would not be so uniformly successful with their Celery crops. In low-lying positions or in any garden where Celery keeps badly, the plants ought not to be put out in deep trenches, but should rather be planted on the level. This entails a little extra trouble in moulding up, but the water drains away more surely, and the Celery is less liable to be much injured by frost and rot off in consequence. Although a moisture-loving plant it will not thrive in a saturated soil, stagnation being most prejudicial to it. Very fine Celery can be had by planting on the surface of ordinarily manured and dug land, especially if the plants are kept well supplied with water and liquid manure, and the blanching can be effected by bandaging the stems with several folds of brown paper.

CELERY LEAF MINER.

A great variety of plants were much infested last season by leaf miners or grubs that subsist between the upper and lower skins of the leaves, and the probability is they will be equally as troublesome this summer. In some gardens the Celery last autumn presented a miserable appearance, the greater portion of the leaves having been eaten up by the grubs. Already, doubtless, innumerable flies will have emerged from their cases in the earth, and be now depositing their eggs in the Celery leaves. The flies are very small and not readily recognised among numerous other winged insects, and, as far as my experience goes, are not easily kept from the Celery plants. Frequently dusting the damp foliage with soot has a deterrent effect, and is about the safest and best remedy, as far as the flies are concerned, that can be suggested. A close watch should be kept for the maggots, and if these are destroyed, fewer will descend to the earth to re-emerge as flies, and it follows much less damage will be done by the later-hatched maggots. Amateurs who are not acquainted with the habits of this troublesome pest require to be told that the first symptoms of the presence of the maggots in the leaves are a few colourless and apparently blistered patches, and if these are examined it will be found that the substance of the leaf has been eaten by a small maggot well enclosed in the skins. These are the leaf miners, and the simplest way of settling them is to crush them between the finger and thumb. Taken in time not much harm will be done, but if neglected the leaves may soon be in rags and the plant's progress be much checked thereby. A look-out ought to be kept for them from the day the plants are put out, and all leaves infested by maggots when the plants are dug up for use should be burnt.

ENDIVE.

Lettuces can with very little trouble be had till near midwinter, but after October they fail to blanch properly, and a green salad is, to say the least, most unattractive. Endive, however, blanches beautifully during the autumn and winter months, and a perfect salad cannot well be made without it. Very early sowings are apt to run to seed prematurely, but this rarely happens when the first important sowing is made about the present time, and if successional sowings be made, sufficient plants ought to be available to carry on the supply well

through the winter. The Moss Curled is the quickest to blanch, but it is very tender, and should not, therefore, be grown in quantity. Green-curbed, or any good selection of it, is by far the best for autumn and early winter use, while the improved Broad-leaved Batavian, if later, keeps much longer, and is particularly to be recommended for use when there are no Lettuces and for cooking as a vegetable. There is no possibility of growing Endive too large, and a good pinch of seed of each type may well, therefore, be sown simultaneously. Whether the seed should be sown in beds and the plants eventually put out on good open ground, or in rows where the bulk of the plants are to grow, depends entirely upon circumstances. The former plan answers well, but we rarely adopt it, unless suitable garden space is unavailable at the time of sowing. Endive thrives best on light and fairly rich ground, the drills for either the seed or plants of the Green-curbed or Batavian varieties being drawn fully 12 inches apart, the same distance apart in the row being allowed the plants. The Moss-curbed may be grown 6 inches apart each way. It is of the greatest importance that a fairly early start be made, and should the first sowing fail, sow more seed at once, or much valuable time will be lost. Last season slugs were so troublesome as to necessitate our raising the bulk of the plants in frames.

RAISING TOMATO PLANTS.

If a bountiful supply of Tomatoes is needed during the winter, the plants to produce them ought to be raised and in their fruiting quarters not later than the middle of August. Late-raised plants are apt to grow rather weakly, and, in any case, the crops fail to set freely during the dull late autumn and winter months. In September and the early part of October, much less difficulty is experienced in effecting a good set, and a long succession of ripe fruit will follow. I have tried several varieties for fruiting in the winter, but none of them approaches a good selection of the Large Red, which is moderately vigorous, flowers freely, and sets very much better than the smooth round sorts. Laxton's Open Air also succeeds well under glass, and this free setter will be given a trial for winter bearing. If moderately firm and quite clean cuttings of the selected variety or varieties are available, these strike quickly in gentle heat, and are soon strong enough for their winter quarters. Where, however, disease or insect pests are prevalent it is advisable to raise the plants from seed. This, if sown thinly in a 6-inch pot, set on a shelf near the glass, and properly attended to, will quickly produce sturdy seedlings. These may be first potted off singly into 4-inch, or rather larger pots, and rapidly grown on, so as to get them into the fruiting pots or planted out as quickly as possible. The small forcing houses, usually devoted during the summer to Cucumber and Melon culture, are very suitable for producing Tomatoes in the winter, and we find the plants are most fruitful when only a few are grown, these being kept in 12-inch, or rather larger pots, the haulm being allowed to ramble thinly over the roof, and the roots to spread out into old hot-bed material. W. I.

Early white Turnip Nimrod.—This is a fine variety of early white Turnip of beautiful shape and colour, and very suitable for exhibition or for use at midsummer when it is sometimes difficult to get a good dish of this useful vegetable. It has been very trying weather here of late for early Turnips, but this kind has stood the test well, and produced an even crop without any disposition to start prematurely to seed. —J. G., *Hants.*

Early Potato Sharpe's Victor.—This is undoubtedly one of the earliest Potatoes in cultivation, and I feel confident that it will become very popular for early crops both in private and market gardens. I have tried it this year side by side with the Ashleaf Kidneys, and it holds its own with any of them that I have grown. The tops being very dwarf it takes but little space, and is equally as satisfactory in pots, pits, or frames as in the open ground. Here it is quite ripe enough to lift for seed now. For those who want early crops on warm borders I can strongly recommend this. —J. G., *Gosport.*

Early v. late planted Potatoes.—That good crops of Potatoes may be grown, even when the

sets are planted very much after the ordinary date, will not be disputed by any large growers. I never yet, however, met with one who did not prefer early to late planting. In this locality Potatoes are grown in enormous quantities, for what with the large population, the soldiers, and above all the Fleet coming in for provisions, the quantity of Potatoes disposed of is enormous. The time of planting is invariably early, March and April being the favourite months for carrying this out. Although a good many Potatoes through various causes are not planted until May is more or less advanced, they never equal the early planted ones. We are now digging splendid crops of white and pink Beauty of Hebron, the Ashleaf Kidneys, and Sharpe's Victor. Early planting as well as early lifting is the rule, for if the crop is sent to market, the sooner this is done the better the returns, whilst there is the advantage of being able to obtain another crop from the same ground. All sorts of winter Broccoli, Kales, Sprouts, Turnips, Celery, &c., can be got in after early Potatoes, but with those left in the soil until September or October the case is very different, and only a limited number of crops are available for following late Potatoes. Looking at the case as it affects either market or private gardeners, I do not see anything to gain, but quite the reverse, from deferring Potato planting until June or July. In any special case, such as taking possession of a garden very late in spring, it is well to know that late planted Potatoes have a reasonable chance of maturing a crop. I do not think it at all likely that any large section of Potato growers will alter their dates of planting, as they will continue to plant as early in spring as the condition of the soil will allow them. —J. GROOM, *Gosport.*

IMPROVING LIGHT SOILS.

Not long since an amateur, lamenting the over-porosity of his soil, remarked that many things failed with him, although he manured liberally every year. I suggested that he would use his money more profitably by purchasing loam, clay, or marl, the effect of which would be of a permanent nature. Light soils generally require more manure than those of a heavy nature—at least, they seem to do so, because hot, dry weather so quickly affects everything planted in them. The effect of generously manuring such soils is to increase the amount of surface roots, and thus the evil is augmented, for a few days of parching weather deprive them of moisture, and the foliage has no means of resisting the hot sun. At the best the effect of manure is transitory; whereas the addition of a couple of inches of stiff loam is permanent, not to be effaced in a lifetime. In many places the cost of loam is not more than from 5s. to 7s. 6d. per load, cartage costing about half that sum; and when it can be got at that price I should earnestly counsel that a dressing of it, if only an inch or so thick, be given when the ground is naturally too light. Even clay will do much good, but it ought to be put on the surface rather thinly in lumps, and allowed to lie all through the summer or winter, the exposure to the elements bringing it into the right condition for mixing with the soil. In my garden I can dig clay, and once I brought nearly a spit of it up, and allowed it to lie through August and September in large lumps, so that it got baked by the sun. Then after rain, and just as it was beginning to dry, I had it broken to pieces with the fork, and at once worked into the ground to a depth of 18 inches. It will not do to let it lie and be rained upon after being broken to bits, as it then again comes into a sticky mass.

As is well known, in kitchen gardens it is difficult to get Strawberries to do well. They may grow and fruit tolerably well the first year after planting, but in the second season so many plants die off in the fruiting time as to render the plantations unprofitable. I know a garden of this description where it seemed impossible to grow Strawberries, although there was an unlimited command of manure. At length a good dressing of marl was given, and the result was, that excellent crops were obtained; indeed, I never saw Strawberries do

better. I do not know what it is that continual cropping with vegetables takes out of the ground, but it is an element of fertility indispensable to the Strawberry, and that no amount of manure can put back. It is, however, evidently found in loam and marl, and this fact should be noted by those who have gardens of the above-mentioned description to deal with. I doubt if the advantage of adding chalk to light soils has been hitherto fully recognised by gardeners. I find that there is a growing tendency among farmers to use it on light land. As is well known, chalk is of a cooling nature, and doubtless helps materially in retaining moisture in the ground. I have often been surprised to see the crops on rather light, but very stony land, and I feel sure that if the stones were removed the fertility of the land would be impaired, as it would not hold moisture so well in a dry time. I have indeed heard of an instance where the yielding power of several fields was so seriously diminished when the stones had been picked off them that it was found necessary to discontinue doing so. This may not have been an exaggerated statement, for it is well known how many plants thrive in situations where the soil is scanty and where the roots have to find their way among stony or rocky material.

Returning to the question of adding chalk, an instance has come under my notice in this neighbourhood of the good that may thus be effected. A farmer having a field so poor and sandy gave up the attempt to cultivate it. Eventually another man took it and gave it a liberal dressing with chalk. Since then some very good crops have been taken from it, and I do not think that the difference is due to superior cultivation generally, as the former holder of the farm was a good cultivator. The only fault I can see is, that the chalk was put on in too large lumps. I think it would be better to break it up into pieces the size of a Walnut, so that it is more equally distributed through the soil. In a garden it would be imperative to do so, as large lumps of chalk coming up to the surface would render the working of the soil difficult; whereas in farming operations, where all is done with the plough and harrow, it is different, and a heavy roller put on after Corn crops are hoed makes a fairly level surface, which will admit of reaping them. Deepening light soils is an operation often practised, and alone will frequently suffice to diminish the grower's difficulties. Many soils have a hard pan a foot or so under the surface, which acts detrimentally in two ways, hindering the roots from going down, and preventing the moisture from coming up. The power of the sun is continually drawing up moisture from the lower stratum, and when an almost impermeable barrier is interposed between it and the reservoirs below plants must suffer terribly in a time of drought. Perhaps deep cultivation never had a more forcible illustration than when Mr. Mongredien formed his nursery on the Bagshot sands, that seemed to defy all efforts to render fertile. A hard pan was broken through, and from that time trees, shrubs, and other things flourished exceedingly, their excellent growth often being commented on in gardening papers. Some of the finest ornamental trees in the country were grown on this land.

Much of our land here in Surrey is light, some of it next door to sand. It has been ploughed in just the same way for generations, and men and horses trampling on it have made a hard pan, which, when the soil settles down, leaves not more than 4 inches of ground that the roots can work in. Further down, then, than this they cannot go, so that a ploughed field is like a barn floor with a few inches of soil on it. Naturally crops under the influence of a hot July sun suffer terribly, and yet farmers close their eyes to a fact that ought to be patent. Barley whitens and shrivels instead of swelling, and six bushels of wheat are grown instead of a load to the acre, and root crops suffer in a dry season. It is strange that men should go on all their lifetime wedded to the ways of their forefathers. There are, of course, exceptions, and where the steam plough has been put to work the reward has promptly come. Not that I approve of heroic remedies, such as turning down the top spit

and bringing up at one blow a mass of crude material that has not seen the light since man began to cultivate the soil. Rash trenching has had much to answer for in the way of discouraging deep culture, and the man who thinks that he is going to increase the producing power of his land in one season by trenching or any other form of deep culture will probably find that he had better have left things as they were. Looking over some Strawberry grounds, the owner directed my attention to a portion of them that had been trenched the year before, and it was evident that the plants were not doing nearly so well as where the soil had only been dug over. It could also easily be seen that the newly turned-up soil was not in a fit condition for the roots of anything to work in. This was the result of ill-directed labour which, spread over a series of years, would have certainly improved the ground without lessening its fertility for a single season. It does many soils an incalculable amount of good to bring up 2 inches or 3 inches of the bottom soil and mix it with the top spit. But turning up 1 foot of raw soil at once to the top necessitates the loss of a season or two to fallow it, so as to allow of its being well stirred and sweetened by exposure to the elements. It should also be borne in mind that often the character of the subsoil differs radically from the top spit, so that trenching in the ordinary way would thus completely change the character of the garden.—J. C. B., in *Field*.

FLOWER GARDEN.

HARDY FLOWERS IN MIDSUMMER.

We often think that too little heed is given in our gardens to midsummer-flowering plants. An immense number of European and northern plants flower in spring and in very early summer. These are very welcome, and grow abundantly; whereas there is sometimes a scarcity of hardy flowers in the summer, when people most enjoy their gardens. Amongst the really handsome flowers of summer, besides the Roses, we have the bulbous Irises, the Lilies, Larkspurs (Delphinium), which are perhaps the most beautiful flowers of midsummer. These are somewhat popular, and are fine things in all good gardens, but the same thing cannot be said of the fine Peruvian Lilies (Alstroemeria). These are really very showy, and many of them flower in ordinary soils with the greatest freedom, but there are a few that require warm and well-drained ground. They should not be absent from any good garden. The *Triteleias* (Star Flowers) are very distinct and beautiful. Water Lilies (*Nymphaea*) begin to adorn the waters, and some of the American kinds deserve to be grown. The Cape Lilies (*Crinum*) are useful summer flowers; they like warm situations, but are not difficult to grow. Perhaps the handsomest summer flower of all is the common Foxglove, particularly the white, and the light-coloured varieties, which are fine additions to the garden. A colony of the white we have amongst a group of Irish Juniper, the effect being very pretty. We purpose sowing the seed of the white and light kinds to a large extent in the woods this autumn. Of late years the finest things that have been brought to our gardens are the Mulleins; some from Greece. Very fine are *Verbascum phlomoides* and *olympicum*, two superb and distinct plants. Evening Primroses are essential and very fine and vigorous. The later-flowering Gladioli have not yet come in, but the earlier ones are pretty. Another handsome summer flower is the American Lady's Slipper, which does well in the shade. The hardy Peas are now also amongst our best border flowers. A flower which should never be absent from warm soils is the Burning Bush (*Fraxinella*); it is a slow growing, but pretty

plant. Amongst the flowers we most enjoy is the common Thyme. The white form is beautiful with us. Nearly every one of the family is welcome. The Monkey Flowers (*Mimulus*) help well; and there are few things better than the Sea Hollies (*Eryngium*), which are very fine in form of leaf and habit. Among flowering shrubs the most delightful perhaps are the Honeysuckles, which grow so well in the woods, and which are valuable in gardens. Hydrangeas also now begin to flower.

The following is a list of trees and shrubs and hardy plants seen in bloom around London at the end of June:—

Aconitum (Aconite)	Hieracium (Hawkweed)
Actaea (Baneberry)	Inula (Fleabane)
Ajuga (Bugle)	Iris (English and Spanish especially)
Allium	IXIA
Alstroemeria (Peruvian Lily)	Lathyrus (Pea)
Anchusa (Alkanet)	Libertia
Anemone	Lilium (Lily)
Anthemis (Camomile)	Linaria (Toad-flax)
Antirrhinum (Snapdragon)	Linum (Flax)
Aquilegia (Columbine)	Lithospermum (Gromwell)
Arabis (Rock Cress)	Lupinus (Lupine)
Arenaria (Sandwort)	Lychnis (Campion)
Armeria (Thrift)	Medeola
Asperula (Woodruff)	Milla
Aubrietia	Mimulus (Monkey Flower)
Brodiaea	Myosotis (Forget-me-not)
Butomus (Flowering Rush)	Nymphaea (Water Lily)
Calceolaria	Oenothera (Evening Primrose)
Calochortus (Mariposa Lily)	Ornithogalum (Star of Bethlehem)
Campanula (Bellflower)	Orchis
Centaura (Knapweed)	Ostrowskya
Centranthus (Valerian)	Paeony
Chrysogonum	Pansy
Clematis	Papaver (Poppy) in variety
Coreopsis (Tickseed)	Pentstemon
Crinum (Cape Lily)	Periploca graeca
Cypripedium (Lady's Slipper)	Phlox
Cyrtanthus	Polemonium (Jacob's Ladder)
Delphinium (Larkspur)	Polygonum (Knotweed)
Dianthus (Sweet William) especially	Pyrethrums in variety
Dictamnus (Fraxinella)	Roses in many species and hundreds of varieties
Dieldytra (Lyre Flower)	Salvia (Sage)
Doronicum (Leopard's-bane)	Scabiosa (Scabious)
Eccremocarpus	Senecio
Epilobium (Willow Herb)	Sidalcea
Erigeron	Silene (Catchfly)
Eryngium (Sea Holly)	Sisyrinchium (Satin Flower)
Foxglove	Sparaxis
Funkia (Plantain Lily)	Spiraea (Meadow Sweet)
Gaillardia	Stachys (Woundwort)
Geranium (Crane's-bill)	Thalictrum (Meadow-rue)
Gladioli (early flowering)	Triteleia (Star Flower)
Gypsophila	Tritoma (Flame Flower)
Hemerocallis (Day Lily)	Tropeolum (Nasturtium)
Heuchera (Alum Root)	Verbascum (Mullein), V. olympicum especially

TREES AND SHRUBS.

Carpenteria californica	Magnolia
Ceanothus in variety	Olearia (Daisy Bush)
Cistus (Rock Rose)	Ozothamnus rosmarinifolius in warm spots
Deutzia	Philadelphus (Mock Orange)
Hydrangea	Styrax japonica
Kerria	Field.
Ligustrum	
Lime	

The Japan Iris.—This most beautiful Flag, to which has been given the name of *Iris laevigata*, was formerly known as *Iris Kämpferi*, a name retained by many. Being seen under the most favourable conditions when planted on the margin of a pond or stream, it is necessary to supply this Iris with copious supplies of water when growing in drier spots. By means of a sunken bed, which can be flooded with water when required, this Iris may be grown in a satisfactory manner in ordinary garden soil, but of course the plants do not attain the same vigour as in a moister and consequently more congenial spot. While I have grown them well in this way the last three seasons, they have not

succeeded as they did formerly, for the foliage has been much disfigured by thrips, which establish themselves among the tender leaves before they unfold. Last summer, though so wet, did not seem to reduce their numbers, as the foliage of many plants died off prematurely, and this year but few of them will flower, still none of the plants show as yet any signs of the pest. Roots of Kämpfer's Iris are largely disposed of at the various auction sales in company with those of many other Japanese plants. The Irises are usually imported in the shape of small clumps consisting of three to six crowns, the whole being enclosed within the soil in which they have grown. In this way they reach here in perfect condition.—H. P.

Ramondia pyrenaica alba.—If "F. W. B." will kindly read the note to the engraving in *THE GARDEN* (Vol. XXVI, p. 195), he will see that the plant is described as nearly white when opening, and faintly tinged with rose later on. This is, however, no drawback, but on the contrary gives a peculiar charm to this most beautiful flower. There is, however, some difference in the shade of seedlings, as "F. W. B." surmises. One of the seedlings of my original plant (received from Messrs. Froebel, of Zurich), which flowered for the first time last May, had pure white flowers without the least tint of rose. Concerning the size of the flower, I can only say that when stating that it measured $1\frac{1}{2}$ inches in diameter I had not done it justice, fearing to exaggerate. I have before me a carefully executed coloured plate of it drawn and measured under my supervision, and find that the largest flower measured $1\frac{7}{8}$ inches. But I confess that liquid manure may have been the reason of the extra size of these flowers.—O. F., *Lehenhof*.

Dwarf Nasturtiums.—Amongst numerous hardy and tender annuals now blooming at Chiswick may be seen rows of several of the Tom Thumb type of dwarf Nasturtiums. For some time these seem to make too much leafage, as the flowers have the demerit of being buried in the foliage. Later this foliage seems to fall abroad somewhat and the flowers are exposed, but the character of the foliage seems to be determined somewhat by the nature of the soil, and at Chiswick it may be this year rather too good for these Nasturtiums. In the case of those of the dwarf compactum strain the soil seems to make little difference, because these invariably throw their flowers well above the foliage. All the same, it is never wise to sow seed of these in rich soil, as the plants always bloom most luxuriantly when the ground is of moderate quality. The compactum varieties are also very enduring, as whilst those of the Tom Thumb section are often quite past soon after the end of July or the middle of August, the former bloom persistently until cut down by frost, the shoots lying close to the soil and the flowers standing well above the leafage. The best forms, such as *Lustrous*, *crimson*; *Bedfont Rival*, *scarlet*; and *aureum*, yellow, give plenty of shoots for making cuttings, and if desired to form masses in that way, it is readily and cheaply done by keeping a few stock pots of cuttings through the winter. *Lustrous* and *Bedfont Rival* give masses of colour during the summer and autumn not to be equalled by any other bedding plants, and at a very trifling cost.—A. D.

Hoteia japonica.—I quite agree with all that "A. D." (*GARDEN*, July 6, p. 6) says as to the value of this beautiful plant for outdoor gardening, as we grow a large quantity, and have only just finished cutting the last blooms. From under glass and in the open air we have had a good supply of the feathery plumes for six months. I may remark that this spring having been unusually fine and free from spring frosts, *Spiraeas* and all plants of doubtful hardiness had a fine time of it, and bloomed with surprising vigour. From a dozen to twenty good spikes could be cut from each plant, and this rather benefits than injures the plants. We take up quantities of the clumps for potting and placing in boxes to supply cut bloom, and I see no reason why, in the south of England, the culture of so useful a plant might not be made a speciality. That we allow the Dutch to monopolise our markets is no

proof that we could not produce just as good clumps as they do, and that it would be remunerative needs no argument. Anyone, however, going into the culture on a large scale should select a spot where water is more plentiful than in this district, as the *Hoteia* is almost an aquatic plant, and if planted where water could be let on at will, like the water meadows near Romsey, there would be no difficulty as to its culture. As it is such a vigorous rooting plant, it will grow in any kind of soil. I may remark that when planted out of doors late spring frosts sometimes cut the blooms; for this reason we plant where the overhanging boughs of fruit trees give a little shelter, and in this way we very rarely fail to get a good crop of outdoor flowers of one of the most useful plants in cultivation.—J. G., *Gosport*.

Peruvian Lilies at Gunnersbury Park.—Some years ago, when a clump of these was planted on each side of the main entrance to the large vinery in the rear of the gardener's house at Gunnersbury Park, the planter could have had no idea that in a few years the clumps would extend to their present proportions. The clumps have broadened out until they represent quite huge masses, and the plants bloom with surprising freedom. The best method of culture appears to be the let-alone one. All that Mr. Roberts does is to mulch the clumps each time that he covers the outside Vine border with manure, and this appears to suit the *Alstroemerias* exactly. It has been said that shade is necessary to the well-being of *Alstroemerias*. At Gunnersbury Park they occupy one of the hottest portions of the garden, on which the sun plays fiercely all through the day. The handsome markings on the flowers make them very attractive. I think the generous mulching applied during the autumn, winter, and early spring has much to do with the successful culture illustrated at Gunnersbury Park.—R. D.

Narcissus bulbs dying.—I shall be glad to have your opinion as to the condition of the *Narcissus* bulb enclosed (*N. maximus*). It appears to be suffering from what I and other growers of *Narcissi* have long been familiar with as the "rootless disease," but without being able to obtain any explanation of its origin. On lifting a batch of *N. maximus*, however, I have found some of the bulbs swarming with a small mite. You will find it abundantly present between the tunics. I desire to have your opinion as to whether this insect has caused or only followed on the disease; whether it is likely to have been imported into my ground in farmyard manure; and whether the insect can be killed without injury to the bulb.—G. H. E.

* * The *Narcissus* bulb you sent appeared to be quite healthy. I examined it very carefully and could not find any trace of mites or insects in it. As to the "rootless disease," if the mites you find between the scales are milky white in colour, with brownish heads and legs, and are sluggish in their movements, they are no doubt the bulb mite (*Rhizoglyphus echinopus*), and cause the disease. If the mites are brown and move with great rapidity they probably follow the disease. If you are in any doubt, please send another bulb and I will report on it. Your packing was excellent, and had there been any mites present I must have found them. If the mites have eaten their way at all into the bulbs, I fear there is no remedy, but if they are near the surface, washing and soaking them for a few minutes in 3 ozs. of sulphide of potassium will destroy them.—G. S. S.

Venidium fugax.—A note respecting this beautiful hardy annual appeared at page 17. I have it here growing in almost wonderful luxuriance, although in soil of very moderate quality. I sowed a portion of the seed sent me in a cool house and dibbled the seedlings out in two long rows 15 inches apart in the month of May. The plants soon became established and have made wonderful growth, so that they form a perfect mass of foliage and flowers nearly 4 feet in width. The flowers are produced in enormous quantities, so that the entire surface of the plants forms one sheet of rich orange-yellow. The habit of growth is very short, but spreading,

very much like that of the *Gazania splendens*, but the flowers, if not so large, are far more freely produced. It is, without exception, the grandest yellow-flowered annual for massing I have ever seen, and so far it bids fair to endure for a long season. The blooms when cut close a little during the night, but open freely in the day. It is very interesting to note how beautifully the hairs with which the stems and leafage are covered emit globules of air in the water in which the flowers are placed. The breathing capacity of these hairs or spines is thus practically illustrated, as the tiny globules are formed almost by thousands. With respect to the other portion of my seed, I sowed that outdoors at the end of April, but with very poor success, as but two or three plants grew. Still, it was a bad season generally for seeds outdoors. None the less, after seeing the remarkable success which has attended the raising of seed in the greenhouse and planting out, I think in the case of such a beautiful plant as this *Venidium* it is wisest to follow that course.—A. D.

LILIUM CANDIDUM DYING OFF.

In reply to the query in *THE GARDEN*, July 6 (p. 17), as to how this beautiful Lily is behaving this season, I have never seen the plants in finer condition than they are at present, not only in my own nursery grounds, but in nearly all the gardens, large or small, in the locality. Now that the weather is dry and fine they form a magnificent sight, as many of the strongest spikes have twenty expanded blooms of the purest ivory white, besides buds, and I may remark that the drought, which is getting severe now, seems rather beneficial than otherwise to this Lily. I do not know whether the sea has any beneficial influence. I should rather say it is the light shingly nature of the soil that provides efficient drainage at all times, and no matter how the bulbs are treated they continue healthy and increase rapidly. There is, however, a wide difference in the size of the flower-spikes and number of blooms carried on plants treated liberally and others that are left for years in one position in poor borders, where they have to struggle for existence with stronger rooting plants. I grow a large breadth of this Lily for supplying cut flowers, and the way I do is to take up a portion of the bulbs (generally about one quarter) soon after the plants finish blooming and the leaves on the stalk have quite dried up. They are lifted carefully and sorted into different sizes, some of the largest being potted and the rest replanted in rows 2 feet apart, and the bulbs $1\frac{1}{2}$ feet in the rows. I plant on fresh soil that has been previously cropped with Potatoes, and is therefore clean, in good condition, and vacant at the right time. I plant the bulbs shallow, and after they are planted I shake some litter or any rough manure over them, thus protecting them in winter, and checking evaporation in periods of drought.—J. GROOM, *Gosport*.

— In answer to your inquiry about *Lilium candidum*, I beg to give you my experience, not because I am vain enough to suppose I can teach anyone anything, but because you ask for information. Last year my large stock of common white *Lilium* (perhaps, after all, the most beautiful of all) was completely ruined by the disease, brought about, I believe, by the unusually wet summer. All the leaves disappeared and the flowers rotted on their stalks unopened. I removed every one of them (several hundreds) and replaced them in new soil, and all, with one solitary exception, are doing well. But, strange to say, this year all my *auratum*s are attacked in exactly the same way as the *candidum*s last year. The leaves have gradually become black and fallen off, and the buds have dropped off, and, except under glass, I shall not have an *auratum* in bloom.—JOHN B. M. CAMM, *Monkton Wyld Vicarage, Charmouth, Dorset*.

— You ask about white Lilies. Three large clumps established here for several years, and which used to be the glory of my July hardy garden, failed for the first time last summer. This spring they came up vigorously, but early in May the leaves again became diseased, the flower-stems

followed suit, and all those clumps, besides smaller ones planted two years ago, have withered away. I am uncertain if I should dig up the roots and destroy them, or chance their recovering next season. Is there no cure? Last year, in reply to queries in *THE GARDEN*, someone advised burning the roots. It may interest some of your readers to know that I succeeded in making a *Fraxinella* flare-up, as described, by applying a lighted match to the flower-stalks. Unusually dry weather was in favour of the experiment.—J. H. W. THOMAS, *Carlton*.

— Our white Lilies present a most miserable appearance. They promised well early in the season, but the realisation falls far short of the promise; in fact, there is not a good flower. Some of the flower-spikes only attained about half their usual height, when they turned black and died; others have grown and produced buds, but the buds are distorted with canker and cannot open. Last year, owing to the excessive wet, there were great complaints of disease among the white Lilies, but wet has not been the cause this year; moreover, whilst ours are mere blighted sticks, in cottage gardens less than a mile away there are flowering clumps of this Lily entirely free from disease of any kind. The soil in both cases is a warm sandy loam.—A. H., *Suffolk*.

Decided colours in Sweet Williams.—I fear it is not an easy matter to secure a race of Sweet Williams which shall give in the flowers decided colours, without any tendency to run into each other, or to produce parti-coloured flowers. I have worked hard to secure selections of the kind suggested, but with no good results. Perhaps over a large area of ground it may be possible to plant white, pink, red, purple, and crimson selfs so remote from each other, and to rogue hard so as to have the colours fixed, but I am not certain that such results will follow. It is not difficult to keep any one strain pure where no others are grown in the immediate locality, as, for instance, dark selfs, such as the bronze-leaved variety the root growers for market produce in large quantities, or the *Auricula*-eyed strain, or Hunt's ringed strain with smooth edges, but generally the ordinary grower of Sweet Williams does not mass them, but grows plants singly about the garden borders, and as each plant, of course, produces identical flowers, whatever they may be in colour, there is in such case no confusion. I have endeavoured rather to produce a strain which will contain in the flowers as much variety as possible, since I have found that selection of special forms seems to be so hopeless. None of the flowers seem to my taste to be showier than are the pretty and exceedingly varied mottled forms; indeed, of self, *Auricula*-eyed, ringed, and mottled flowers it is possible now to produce infinite variety associated with excellent pips and large heads or trusses. To secure a good show from Sweet Williams the plants should be dibbled out from the seed-bed as early as possible, so that before the winter comes they may form good clumps and carry each some ten or twelve heads of flowers.—A. D.

Tuberous Begonias for bedding.—These are steadily increasing in favour, and as their cultivation is getting to be more thoroughly understood, we may look for far better results in the future. The error into which novices fall with these beautiful flowers is that of starting them too soon in the season, and thereby getting them into good-sized plants by the end of May, when they are planted out, and when they are certain to get very severe checks to their growth by reason of cold nights and cutting easterly winds, which prevail at intervals even in the most favourable season. All this can be avoided, and far less trouble incurred by simply starting the tubers in boxes of light soil, so that they are sprouted like seed Potatoes, and by planting them about the middle of May in well-prepared ground and covering the sprouts quite over, they will come up strongly and grow away without any check. If planted about 1 foot apart each way, they will soon cover the soil and make a splendid display the whole season, for whether the season prove tropical or cool and moist, the *Begonias* will continue to flower without

intermission. To keep up a stock of healthy tubers, a good batch of seedlings should be grown every year. Sow the seed in light sandy soil in March, and as soon as the seedlings are large enough prick them off into single pots or boxes and grow on in gentle heat. Although they will not make large plants the first season, they will make good bulbs for another season's work either for pot culture or bedding. The largest-flowered varieties may be selected for pot culture, as in bedding out, brilliant colours and an abundance of medium-sized blooms are of far more importance than very large blooms. —J. G. Gosport.

Verbascum vernale.—This Mullein is mentioned in THE GARDEN, July 6 (p. 22), as growing in Mr. W. Thompson's garden at Ipswich. I was very glad to see the notice, as it is the finest of the perennial Mulleins, and the most worthy of a place in the herbaceous border, except, perhaps, the pure white variety of *V. nigrum*. *V. vernale* has been confused with two other plants, *V. Chaixi* of Villars and *V. orientale* of Bieberstein. The one is a French plant, and is accurately described in Grenier and Godron's "Flora de France," and the other a Caucasian plant, equally well defined in E. Boissier's "Flora Orientalis." Neither of these descriptions could possibly include the plant mentioned above as *V. vernale*. I can nowhere find any description of *V. vernale* (Wierzb.), said to be a native of Hungary, and to have the synonym *V. Wierzbicki*. *V. vernale* was, I believe, introduced by Mr. Robinson about twenty years ago from the Paris Gardens, and soon assumed in nurseries the name *V. Chaixi*, under which name I bought it about ten years ago, and for several years distributed it amongst my friends still as *V. Chaixi*. Though I have eliminated the names *V. Chaixi* and *V. orientale*, I have not yet established that of *V. vernale*, and as I never knew the plant bear seed, it may be one of the many nondescript hybrids which abound in the genus *Verbascum*. I have now lost the plant, and am glad to know where to find it again, for it is well worth keeping. It may be described briefly as a branching form of *V. nigrum*, 6 feet high, with flowers twice as large or more. —C. WOLLEY DOD, *Edge Hall*.

SHORT NOTES.—FLOWER.

Myosotis Imperatrice Elizabeth is a pretty dwarf deep blue-flowered Forget-me-not. It makes a bushy tuft on the rockery, which is its proper place. Although by no means new it is scarce in cultivation.

The common white Lily is flowering well both in St. James's and Regent's Park, the stems strong, and the flowers of average size. In many places they have failed entirely, owing to some dire disease.

Romulea speciosa belongs to the Iris family, and is like a dainty little carmine bloom when seen in bright sunlight. The flowers nestle amongst the grassy leaves in a charming way. It requires a light warm soil, as none of the *Romuleas* are very hardy.

Tritoma caulescens, a variety of *T. Uvaria*, as flowering recently in Messrs. Barr and Son's Tooting Nursery. It is less brilliant than the type, but the colouring is distinct. This is of a kind of salmon, which changes to white as the flowers become older. A clump on turf is imposing.

Two good Evening Primroses are *C. Fraseri* and *C. Youngi*, both with yellow flowers. In *C. Youngi* they are smaller and of a deeper yellow than in *C. Fraseri*. Two beds of them in the Tooting Nursery of Messrs. Barr and Son were recently one mass of bloom. There are few better pot plants than these. They make a bushy growth, and produce an almost endless supply of bloom.

Turban Bellflower (*C. turbinata*) is one of the most beautiful of its family. It is known to all interested in hardy flowers, and is grown far more than such distinct and handsome varieties as *pallida* and *pelviformis*. In *pallida* the flowers are of a pale blue colour, not weak nor washy, and the growth is taller than that of the type; it also makes a more bushy plant. There is an excellent clump of it on the Chiswick rockery; *pelviformis* has saucer-shaped flowers. All are easy to grow.

Cyananthus lobatus is a charming plant of the Campanula tribe from the Himalayas. It is quite

hardy, thriving well in a shady peat bed and producing such a profusion of flowers as to be an object of great admiration to all who see it. The flowers, which are deep blue, saucer-shaped, and about the size of a florin, are produced at the ends of the somewhat straggling prostrate stems. It may be easily raised from seed, which ripens freely.

FEAST OF ROSES.

A FEAST of Roses and floral parade were the attractions that brought together about 10,000 visitors at the Royal Botanic Society on Monday last, the occasion of its fiftieth anniversary. It was a strange way to celebrate an epoch in the history of such a society; but the rich harvest reaped will set things upon a firmer basis than they have been for years past. We understand that the whole of the tickets were sold, so that, apart from the propriety of such displays, it was a financial success, a success that was most opportune to a society in the unsatisfactory condition of the Royal Botanic. A large programme had been drawn up; the first part devoted to the floral parade, in which there were about forty classes, for varied exhibits, from a Jubilee crown to village cart and pony. The parade was down the centre walk, at the upper end of which a dais had been erected for the Prince and Princess of Wales, who distributed the prizes.

England is no place for such exhibitions, as might be seen at a glance on Monday. Rain fell heavily at intervals, the Roses were already spoilt by the wet at the end of the previous week, and the parade, therefore, lost much of its picturesqueness and colour. It wanted the brilliant cloudless sky of Nice, its surroundings, and flowers. Then the spirit of the entertainment could be entered into with zest, as everything about it would give colour, fragrance and beauty. It was a mere march past on Monday of a few tastefully-arranged vehicles, and several in which Roses and taste were absent. The prize carriage was dressed in gorgeous colours, the whip a mass of yellow *Coreopsis*, the wheels outlined with red and white flowers. It was smothered in bloom, and the most dressy exhibit of any. Another skilfully-ornamented carriage was embellished with thousands of Jacqueminot Roses, with asparagus and lettuce-green ribands as a foil. A charming turn-out was Mr. Sherwood's village cart, coated with white, pink, and yellow Roses, tastefully harmonised; it was as pretty as any of the exhibits. One Shetland pony was saddled with yellow and white Roses, and a barbarous affair was a mixture of red and yellow; while in one case *Gaillardias* only were used. One carriage was coated with white Roses on one panel and red ones on the other, to represent "York and Lancaster." Another vehicle was a mass of La France Roses, and this was exceedingly graceful and unfeigned. Another arrangement had no help from the Roses; it consisted of a crown made of Dog Daisies, Poppies, and Grass, a pretty mixture, but destroyed by the stronger colours of the Roses. These were a few of the best. There were others, one entirely, as far as we could judge, made up of wreaths of *Tropeolum speciosum*, and in another there were blooms of *Cattleya gigas*. On the lake floated two flower-decked boats, one with pot Fuchsias hung round the side sufficient almost to sink the whole concern; and here and there in the grounds were such things as a triumphal arch, Maypole, or crown—paltry devices, as bad in conception as in the show of flowers. The Maypole was a wretched stick. Inside the large tent a good exhibition of Roses was on view. The whole of the five central beds were occupied by Messrs. Wm. Paul and Son, of Waltham Cross, who had thousands of blooms disposed in baskets of one colour only, in the middle of each group being an Ivy, with a background to the whole of the same climber. Around the baskets were lines of flowers of the best finish and colour. Mme. de Watteville amongst the Teas was charming, and there were excellent flowers of such varieties as La France, the deeper-coloured Duchess of Albany, Captain Christy, Duchess of Bedford, Pride of Waltham, splendid for colour, size, and finish; The Bride, a Tea Rose—the more we see of it the more we like it; Polyantha Anna Marie de Montravel, Gloire de Dijon, Lord Macaulay, Countess of Rose-

bery, Mme. Falcot, Ma Capucin, and Anna de Diesbach. Mr. Wm. Rumsey, Waltham Cross, had also many boxes of bloom, Marie Finger having beautiful colour, and there were good blooms of Boule de Neige, W. A. Richardson, La France, Ulrich Brunner, Dupuy Jamain, Mme. Hoste, Viscountess Folkestone, Louis Van Houtte and Pride of Waltham. Mr. Frank Cant, Colchester, showed excellent flowers of such Tea-scented varieties as Mme. de Watteville and Comtesse de Nadaillac, also Alfred Colomb, Star of Waltham, Camille Bernardin, Duke of Teck, A. K. Williams, Baroness Rothschild, Merveille de Lyon and Catherine Mermet. Messrs. Keynes, Williams and Co., Salisbury, had what seemed like a huge crown of dark and light Roses. Mr. Rupert Miller, Shoreham, showed baskets of Roses, Mr. Offer Crotons, and Messrs. Hooper and Co., Maida Vale, Caladiums. A large bank of tuberous Begonias came from Messrs. J. Laing and Sons, Forest Hill. Mr. W. Grundy showed Gloxinias, and a large and beautiful arrangement of Ferns was exhibited by Mr. H. B. May, of Edmonton. A choice group comprising Orchids and miscellaneous plants was put up by Mr. B. S. Williams, Upper Holloway. A collection of Orchids came from Messrs. H. Low and Co., Clapton, containing good forms of *Cattleya Mendelii*, Gaskelliana, *Dendrobium suavisissimum*, and *Cypripedium Rothschildianum*.

NOTES OF THE WEEK.

Dianthus plumarius hybridus.—This, a fine large form of *D. plumarius*, comes to us from Mr. Moore, Glasnevin.

French Poppies are now delightful, so varied in colour and so useful for cutting if they had not that abominable odour of their tribe. —W. H. BLAIR, *Cork*.

A double Pansy.—The ugliest thing ever sent to us is a double Pansy by Mr. Peter Barr—a monstrous, distorted, lumpy thing, hideous in form and colour.

Viburnum macrocephalum.—Two trusses of flowers of this handsome *Viburnum* come to us from Glasnevin. It is known in many gardens under the name of *V. Fortunei*. A very "slow" and rare shrub, not so precious as the hardy and robust species.

Verbascum gnaphaloides is worth a note for the beauty of its down-covered leaves which are like a piece of white felt. There is a plant of it in the alpine house at Kew.

Spiraea digitata makes a beautiful plant for the rougher parts of the rockery. It has abundant foliage and feathery clusters of bright rose-coloured flowers, which appear at this season.

Lilies from Twickenham.—A gathering of flowers of *Lilium auratum*, *speciosum rubrum*, and *S. Kratzeri* comes from Mr. W. Gordon, the Nurseries, Twickenham. The pure white variety *Kratzeri* is exceptionally beautiful.

A good seedling Lilium auratum.—A flower of a finely spotted variety of *L. auratum* is sent by Mr. Anthony Waterer. It is like the variety *macranthum*, or Witte, the flowers white, freely spotted with a decided lake-crimson. A rich and beautiful variety.

A beautiful group in the greenhouse may be made up of plants of the Chimney Bellflower, through which peer up the white bell flowers of *Galtonia candicans*, outside these being *Trachelium cœruleum album*, with the glorious *Funkia grandiflora* as an edging.

Cattleya gigas Sanderiana.—A good form of this beautiful Colombian variety of *C. gigas* comes from Mr. J. F. Wilkinson, The Gardens, Highlands, Minchinhampton. The flower was about 7 inches across, not unduly large therefore, the sepals and petals bright rose-lilac, the lip large and of a rich amethyst colour, veined with old gold in the throat. It is very free.

Raspberry Superlative.—Mr. Bunyard, of Maidstone, sends us some handsome fruit of this Raspberry. The fruit is large, very sweet and juicy, and will be found valuable for preserving. We saw it in Mr. Bunyard's nursery last year, and found it to be a very free-bearing variety, the smallest canes even bearing a crop.

Francoas at Holloway.—These are very beautiful just now with Mr. Williams. *F. ramosa* and *F. appendiculata* are in the finest bloom. The flowers of the first-named are white, in the other touched with rose. Such easily grown, hardy plants should be more

cultivated, especially by those who have much decoration to do.

Plumieria bicolor is in bloom now in the Cactus house at Kew. The plant has a straight stem the thickness of an ordinary walking-stick, and terminated by a head of soft yellow flowers, the centre deep orange colour. These are surrounded by large Poinsettia-like leaves.

Flowers from Glasnevin.—Mr. Moore sends us a fine gathering of flowers of the Peruvian Lilies (*Alstroemerias*). Amongst them *Alstroemeria haemantia*, a bright scarlet form, and *A. pelegina alba* (Lily of the Incas), the most beautiful of all the Peruvian Lilies, though somewhat tender, are noteworthy.

Veronica virginiana.—I have been much struck this year with this stately Veronica. It grows from 4 feet to 6 feet high, the numerous whorls of narrow, toothed leaves and the upright plumes of pretty pale rose or white flowers being exceedingly attractive and neat. As a border plant it leaves nothing to be desired, and it will stand even our severest winters.

Dianthus Seguieri.—Amongst the alpine Pinks at present in flower none certainly attracts so much attention as this. This is said to be a form of the Chinese Pink, but of this I am doubtful. It has a close, neat, tufty, habit, the flowers being large, deep rose with a zone of deep purple near the throat. It is a most delightful plant for the rock garden, fragrant, and continues in blossom much longer than most of the others.—D.

A seedling Carnation.—I beg to enclose you a bloom of a Carnation, one of my seedlings, and shall be glad to know if you think it worth naming. Of course, the season being so dry here (we have not had rain for nearly two months) the flower is not as well coloured as it otherwise would be.—W. H. BLAIR, *Cork*.

*** It seems to be a very promising variety, but it is only by growing it side by side with other purple Carnations that an opinion can be formed as to its real merit.—ED.

The Oxford Carnation and Picotee Union.—The exhibition will take place as usual in Mr. E. [S. Dodwell's garden, Stanley Road, Oxford, on Thursday, August 1. The date originally fixed was Tuesday, August 6, but finding the Carnation bloom will be earlier than was generally anticipated, Mr. Dodwell took a vote of the cultivators most interested, and by a practically unanimous expression of opinion the date has been changed. A large gathering of lovers of the Carnation from different parts of the country is expected.

The alpine house at Kew contains many choice plants, though it is not so gay as earlier in the season. A pretty, but ungainly Wood Sorrel in bloom is called *Oxalis lasiandra*, the leaflets deep green and the flower-stems straggling, bearing at the end of each a cluster of bright rose flowers, each about the size of a halfpenny. The delicate little *Campanula pusilla* is a mass of white bells, and the rich red flowers of *Heuchera sanguinea* still continue to appear. *Primula obconica* is in full bloom, also *P. floribunda*, and the fairy Heron's-bill (*Erodium Richardi*) is studded with the small white flowers. A stately plant is *Symphandra Hofmanni*, like a strong growing Bell-flower, the flowers ivory white. The showiest plant is *Tradescantia iridescens*, the leaves pointed, each over 1 inch broad, downy beneath, and the flowers deep self purple-rose.

Stylidium.—These plants seem to have lost favour and are rarely seen now-a-days. Though some are more than usually handsome, the extremely sensitive styles make them certainly as great wonders as the most complicated structure of Orchid flowers. In *S. fasciculatum*, which is, perhaps, the most commonly cultivated, in *S. graminifolium*, and also in *S. ciliatum* the style is so sensitive as to spring from one side of the flower to the other at the merest touch—a wonderful provision of Nature for the proper fertilisation of the flowers. *S. fasciculatum* or *adnatum*, under both of which names the plant is known, produces numerous stems on which the leaves are thickly scattered, giving them somewhat the appearance of a Bottle-brush. On the ends of these branches the pretty pink

flowers are produced in clusters. It requires a greenhouse. The best of the three, however, is *S. graminifolium*, which produces long, purple-red, Grass-like leaves in a loose rosette, from the centre of which springs the flower-stem, about 6 inches to 12 inches high. The Stylidiums are natives of Australia, and most of them may be grown in cold frames.

Crocusmas.—The rich orange and red-flowered *C. aurea* is blooming well at Kew, planted out on the side stage in the Cactus house, in company with *Lissochilus Krebsi*, also in flower now. There is a variety of *C. aurea* called *imperialis*, in which the growth is dwarfer, the flowers larger, and of a self orange colour of a brilliant shade.

Lilies at Kew are well planted in distinct beds of one kind, and amongst shrubs through which peer up the tall stately flower-spikes. The spotted, Canadian, and golden rayed Lilies were in full bloom this week. There will be a great display of *L. auratum* in about a week if the weather does not spoil the noble flowers.

Lady's Slippers at Holloway.—One great merit of the *Cypripediums* is that there is always sure to be some kinds in flower, no matter what the season may be. This week *C. Morgania*, *Stenei lineatum*, so called from the linear stripes on the white dorsal sepal; *superbiens*, *Curtisi*, *superciliare*, *conchiferum*, *selligerum majus*, and *s. rubrum*, a highly coloured form, were in full flower with Mr. Williams in his Holloway nurseries.

Mesembryanthemums.—It is strange a greater liking is not shown the *Mesembryanthemums*. Those interested in them will find a collection in pots, plunged in cocoa-nut fibre, in two beds between the Cactus and greenhouse at Kew. *M. polyanthum* was one mass of bright carmine flowers; and a little gem is *crassulinum*, in which the flowers are white and nestle close to the leaves; it is scarcely more than 2 inches high.

Self-coloured Snapdragons.—These are far more decided than mixtures of striped and bizarre-coloured flowers, which, however well sorted, never look so rich and effective as beds of one separate colour. A bed of a pure white variety with a rich crimson-coloured kind in the centre was very showy at Kew the other day, and though made up of a simple, easily-grown hardy flower, was one of the best things of its kind we have seen this season. Still better would it have been had the colours been quite distinct. It is necessary to raise those varieties it is desired to keep true from cuttings, as they vary when raised from seed. Cuttings, however, strike readily in the summer months.

Platycodon Mariessi, a very dwarf form, and known in nurseries as *P. pumilum*, is becoming every year a far greater favourite. The fine dwarf, compact habit and the freedom with which it produces its large, deep blue bells single it out as a very suitable plant for the rockery, where it does extremely well in light, rich soil exposed to the full sun. It is one of those plants that gives little or no trouble, and will go on year after year flowering without requiring any attention whatever. It is a native of Japan, from whence it was sent home by the collector whose name it bears. *P. grandiflorum*, blue and white, and one called *chinese* or *autumnale*, a taller and altogether more robust plant, are more in request for mixed borders, shrubberies, &c. Where space can be spared none of these ought to be left out, as they never fail to flower, while their neat habit of growth is also a great recommendation.

Hedychiums at Kew.—There are some very handsome stove-flowering plants amongst the *Hedychiums*. Everyone knows *H. Gardnerianum*, which is almost hardy, and which produces large clusters of yellow flowers in autumn, followed sometimes by beautifully coloured and highly remarkable fruits. But how many know or grow such species as *H. flavescens*, *H. longifolium*, *H. elatum*, *H. carneum*, and *H. Gomezanum*. These are all represented at Kew in the Water Lily house by enormous specimens, some with stout Reed-like growths 8 feet high, and all bearing large, beautiful and fragrant flowers. Even *H. coronarium*, one of

the most deliciously scented of all plants, must be classed amongst the rare garden plants of to-day. Grown as at Kew over the Lily tank with their pots partly submerged in the water, these *Hedychiums* make a fine display. Plenty of water, plenty of root-room, and a strong, loamy, well-manured soil, with ordinary care are all that these plants require.

Getting into the Botanic Gardens.—Americans and others complain to us very much of the difficulty of getting into the Botanic Gardens in Regent's Park, even if they are willing to pay. Perhaps it would be wise of the society to make some modification in their rules, as they surely want all the good people they can get. The case reminds us of the American showman's story about the ladies who wanted to get in without paying. "No," he said, "but you can pay without getting in." No doubt the society would not mind a donation from some of the excluded ones.

Victoria Regia at Kew is finer than we remember to have seen it there before. The leaves are very large, with a turned up rim 4 inches high, the exposed underside being tinted with purplish rose. The flower, too, is large, at first white, becoming rosy crimson on the second day. This is the fine variety known as Dixon's *Victoria*, and owes its introduction to Mr. Abraham Dixon, of Cherkley Court, Leatherhead. We are told that Mr. Dixon secured the services of a friend, who went up the Amazon and selected seeds of the best varieties from amongst thousands. Whatever its history, it is certainly an exceptionally fine variety of a grand Water Lily.

The Chimney Campanula (*Campanula pyramidalis*).—This old-fashioned *Campanula* is a charming plant for the greenhouse at this season. Some large well-flowered plants with several strong shoots on each of the blue and white varieties are now flowering in the greenhouse at Kew. Anyone who has not yet grown this *Campanula* in pots would do well to give it a trial, as it does much better in pots than when planted out of doors, lasting much longer in bloom. To obtain large plants they should be grown on for two years in pots, and protected in a cold frame during winter.—F.

*** It is not necessary to grow these plants in pots for two years, as if planted out in good soil during the summer months, lifted with good balls early in the autumn, carefully potted and protected from severe frosts during the winter, they will flower quite as freely the following spring as if they had been grown entirely in pots. If grown in this way, it saves a great deal of labour in the way of watering during the summer.—ED.

Fuchsias in Regent's Park.—A pleasant feature in Regent's Park is a large bed of Fuchsias of such old-fashioned varieties as Mrs. Marshall, War Eagle (dark crimson), Daniel Lambert (reddish pink), Venus de Medici, Corallina, Banks' Glory, and Lord Beaconsfield, all good kinds very seldom seen now, except the first and last of the list. The plants are old specimens, each smothered with flowers and making excellent growth. The Fuchsias certainly give a welcome change to the usual run of bedding plants. Close by is a fine border of hardy flowers, made up of tufted Pansies, *Lilium auratum*, Bell-flowers, Sweet Williams, and other well-known things. There has been much improvement in the use of hardy plants the last two or three years in our London parks, and the good work should be continued and largely extended. There is plenty of scope for groups and masses of our best perennials.

The Swamp Magnolia (*M. glauca*).—The fragrance of the blossoms of this small North American tree, which is in flower now at Kew and other old gardens about London, exceeds that of any other hardy species, and is only equalled by the perfume of the greenhouse *M. fuscata*. Its perfume is like that of a Tea Rose, but much stronger, and is retained from the bursting of the bud till the fall of the last petal. The flowers are of ivory whiteness and exquisite in form, and the broad, concave, incurving petals look as if chiselled out of ivory. It can scarcely be called a tree; a large spreading shrub would be a more appropriate description of it, as it rarely is more than 15 feet high, and is a long time in reaching that

height. The evergreen foliage is pale green and whitish beneath, but is never dense, and the habit is thin and spreading. Loudon says that the flowers retain their fragrance in a dry state, and may be used for *pot pourri*. It is said to be in such demand in America that the flower gatherers go in numbers to the swamps in search of the blooms and send them to the flower markets. It is certainly one of the most desirable shrubs for a lawn, and it should always be planted so that the fragrance may be enjoyed. To thrive well it must have a moist spot, and sandy or peaty soil seems to suit it best. It also seems partial to slight shade.

Carnations.—Of the following four Carnations growing in the sharp sandy loam of Dorking, Comtesse de Paris is very strong and handsome, two plants giving twenty good layers and the bloom excellent. Murillo, fairly good and quite healthy but not above average strength, nice lot of layers. Norma, bloom, but no layers; weak decidedly. Apricot Self, one dead, other weak, no layers.—A.

* * They differ in different seasons, and disease is rife among them betimes. This spring has been most severe for them in heavy soils.—ED.

Symphianandra Hofmanni, a new species from Bosnia, is now in flower in the herbaceous grounds at Kew. It seems to be a very robust grower, extremely free blooming, and in spite of its being a biennial, likely to become a very popular border plant. There is not so much difficulty in keeping a succession of these plants as many people suppose, as they ripen seeds freely, and a sowing made beside the parent plant when the seeds are gathered is all that is wanted, pricking out to the required distance in spring after all danger is past. The bells are handsomely shaped, white, and produced in the greatest abundance. A fine dwarf pyramidal habitated plant flowering all through the summer months.

The Shining Cinquefoil (*Potentilla nitida*) is a genuine alpine of more than ordinary merit when it becomes fairly established in our gardens. We have tried for years to establish imported plants in the open, but have always failed until advised to grow them in pots for a year and then plant them on an old brick wall or piece of brickwork in the rockery. This we have done, and in addition to retaining the natural silvery sheen we get an abundance of flowers every year of the most delicate rose tint and very effective. There are now several selected varieties, and all are equally at home in such positions as described above. They like plenty of sun and also water.

The variegated Negundo.—I do not remember having enjoyed the beauty of this now very common tree so much as I did the other evening, when I saw the fine row of it on the outskirts of Sir Richard Owen's garden at East Sheen. The dense tree growth overshadows the main walk in the garden, and at the end of it you come suddenly upon this stately row of Negundos, which in the approaching twilight had a peculiar cloud-like effect. The trees (nearly a dozen) are all about 15 feet or 20 feet high and spread out widely, so that they are exceptionally fine specimens, and the contrast of their almost white leafage with the surrounding greenery is striking, the more so because none of its kind is within sight. There is scarcely any tree that requires to be dealt with so carefully as this in planting a garden. It is so pronounced and so effective when properly placed that the temptation to overdo it is often too strong, hence the spotty aspect it creates in small places, and especially in London suburban gardens. It was a bold act to plant a long row of it within a few yards of the house, as in this case, but, as it happens, it has turned out admirably. It is commonly planted as a foreground to dark Evergreens, such as Yew, but this is a mistake, the contrast being too harsh. It harmonises better with pale green, and especially with the green form of its own species (*Negundo aceroides*), which, however, one has a difficulty in getting, because nurserymen do not think it worth growing compared with the variegated form of it. In the hands of an artistic planter, the Silver Negundo is valuable in producing pleasing garden landscapes. On the other

hand, it is responsible for much of the ugliness of gardens planted by those ignorant of the art of ornamental planting.—W. G.

Campanula planiflora, an American species found in the neighbourhood of the Rocky Mountains, is very useful for rockeries, though, perhaps, lacking the freeness and beauty of some of the better known South European kinds. The kinds we usually see in gardens, both purple and white, have mostly double or semi-double flowers, and are not by any means so pretty as the old single-flowered forms, which seem to be rare now. The flowers of the original plant are said to be each four times as wide as deep, which makes us wish we had them here. The flowers on our plant, however, are not so far short of this, barely semi-double, and produced annually with the greatest freedom. This *Campanula* requires light rich soil, and is easily increased by division.—D.

Lobelia cardinalis, now in full flower, is one of the most charming of the early American flowering plants. We often see this name do duty in gardens for a very inferior variety of *L. fulgens*. The true *Lobelia cardinalis*, however, rarely exceeds 3 feet in height with broad oblong leaves, slightly toothed, and not long and narrow, as in the species above mentioned. The flower-stem is more lax, the flowers rich deep scarlet, extremely beautiful and effective, especially amongst Heaths or Ferns. This is, perhaps, the least hardy of all the perennial Lobelias, but it may be kept in good health by lifting and storing it during winter in a dry cold frame, and when growth commences in spring it may be easily increased by division of the clumps. It seems to prefer a somewhat shady position and peaty soil.

Syringa japonica.—I saw in THE GARDEN, July 13 (p. 28), some lines about *Syringa japonica*, which is said to be the old *Ligustrina amurensis*. As I read the same statement in the *Gardeners' Chronicle* two or three years ago when Messrs. Veitch exhibited at the Royal Horticultural Society a cluster of a shrub named *Syringa japonica*, I hope it may interest you to see a branch of each of both as grown here. As *Syringa japonica* has not yet flowered on the Continent, I was unable to compare the blooms, but as far as the foliage goes there is no likeness between them. The two branches which I send you are true to name, for I was the first to introduce *Ligustrina amurensis* into Europe about thirty years ago, and *Syringa japonica* was offered for the first time in Europe in my catalogue of spring, 1888.—V. LEMOINE, Nancy.

* * The plant sent as *Syringa japonica* is not true. That sent as *Ligustrina amurensis* is quite correct. The leaf of the true *S. japonica* is totally different from that sent.—ED.

Needless names.—A contemporary journal, in noticing the "English Flower Garden," says that the Shirley Poppies find no place in it. These are Poppies grown for ages in English and French gardens under various names, and because some one chooses to call a strain of them after a place, we are blamed for not mentioning them as distinct things! People may go on for ever raising races that vary as much as these Poppies do, and it would be confusing if we had to give a new general name to every batch of varieties that came out, even assuming they are distinct from the old ones. A name may be given to a variety, or to many, but the invention of general names like the Shirley Poppies, if confusing to men familiar with garden plants, what must it be to the general reader? We do not doubt the beauty of these flowers, and if really distinct, any or many of them may be named, if it so pleases the raiser or others. But it should be acknowledged that these are forms of the very common Field Poppy, grown for many years in British and Continental gardens, and which have varied infinitely in them both in the single and double state. If the plants were new to our gardens, there would be some reason for giving them a new general name, but they have been grown for many years under their popular name of French Poppies, there being also several other English names—Field, Picotee Poppies, &c.

National Carnation and Picotee Society (Southern Section).—The thirteenth annual exhibition of the above society will be held on Tuesday, July 23, under the auspices of the Royal Horticultural Society in the Drill Hall of the London Scottish Volunteers, James Street, Westminster. Upwards of a hundred prizes are offered in varying amounts from 40s. downwards. The southern flowers would be at their best a week previous to the show, but better blooms will be brought from the midland districts this year. The prospects are good for one of the largest exhibitions ever held by the society. Mr. Shirley Hibberd, one of the vice-presidents of the society, will lecture on the "Carnation and Picotee" in the Drill Hall at 3 p.m. By the courtesy of the members of the Horticultural Club, a luncheon will be provided at the Hotel Windsor, Victoria Street, at 1.30 p.m., for the judges, members of the society, and their friends; tickets are 2s. 6d. each, and may be obtained through the members of the society. Mr. Robert Hogg, LL.D., vice-president of the society, has kindly consented to preside. The hon. sec. will be glad to take the names of ladies or gentlemen to be proposed as members. Subscriptions were due in January. Mr. Henwood, Earley, Reading, the treasurer, will gladly receive all unpaid subscriptions, or they may be paid to the secretary, Mr. Jas. Douglas, Ilford, Essex.

Bracken as manure.—A writer in the *Mark Lane Express* has been strongly recommending Bracken as a valuable manure, but in my opinion he has entirely over-estimated its value, as of all the materials I have ever used as a manure Bracken is the least productive. When used as bedding it keeps stock dry and clean, and the droppings convert it into manure, but taken by itself as a fertiliser it is not worth 1s. a ton. There are large tracts of mountain land hereabouts covered with it, and late in the autumn the farmers stock quantities of it for bedding the cattle yards in winter, but I have not yet met a man amongst them who considered Bracken a manure in itself. Having so much of it at hand and seeing the advantage it would be to us if valuable as a fertiliser, I have tried it with dozens of crops, and the results were always *nil*. All kinds of Grass seeds would readily germinate and grow on a partially decayed manure heap, but even weeds cannot exist on a decayed heap of pure Bracken.—J. MUIR, Margam.

Death of Mr. John Lane.—We regret to hear of the death, on Wednesday evening last, at the age of 82 years, of one of the most respected men among the nurserymen of England—John Lane, of Berkhamsted, whose portrait appeared in THE GARDEN, January 3, 1885. For over fifty years the name of Mr. Lane has been associated with horticulture, and the great business he has from his youth been building up is a memorial of his energy and skill. In 1828 Mr. Lane commenced exhibiting, and in those days, when Chiswick was in full prosperity, the Berkhamsted exhibits were famous. He showed his first pot Roses in 1831, and these came as a surprise, as they were the first seen. Lane's Prince Albert Apple is a variety originated by him, and now become one of the most popular of its class. The funeral will take place on Saturday (to-day) at 3 p.m.

BOOKS RECEIVED.

"Names and Synonyms of British Plants." By G. Egerton Warburton, B.A. London: Bell and Sons, York Street, Covent Garden, W.C.

"Orchids: their Culture and Management, with descriptions of all the kinds in general cultivation." By W. Watson, Assistant Curator, Royal Gardens, Kew, and W. Bean, Foreman, Royal Gardens, Kew. London: L. Upcott Gill, 170, Strand, W.C.

Names of plants.—A. Bailey Macbean.—*Gillenia trifoliata*.—M. S. B.—*Thalictrum angustifolium*, var.—J. B.—1, send in fruit, impossible to name; 2, *Carlina corymbosa*; 3, *Geranium phaeum*; 4, *Sium lancifolium*.—H. D.—*Stanhopea Wardi aurea*.—Chambers.—*Eucalyptus coriacea*.—G. D.—3, *Campanula nobilis* (latiloba); 4, *C. persicifolia* fl.-pl.; 5, *Eriogonum Fraseri*; 6, *Eriogonum speciosum*. The other Bellflower is *C. latifolia*; the plant with yellow flowers *Lysimachia punctata*. The numbers got disarranged.

WOODS & FORESTS.

VALUING TIMBER TREES.

TIMBER trees of any considerable size are generally valued according to quality and the cubic contents or weight which each tree contains, and at prices per foot or ton as arranged between seller and buyer. Although this appears to be quite a simple affair, yet it is astonishing how often we hear of disputes as to the correctness of the valuation of timber. When timber is sold by weight there can be no dispute between vendor and buyer, and in all cases where the wood has been cut, this is by far the best way of disposing of it. As I have practised the system for many years with satisfactory results, I have no hesitation in recommending it to others. Standing timber, on the other hand, cannot be sold by weight; consequently we must have recourse to finding its cubic contents in order to ascertain its true value, and in doing so, some wood valuers actually measure the trees, while others tell us that they can do the work in less time and in a more efficient manner by sight. I have no doubt that practice will enable some people in many cases to form a pretty accurate estimate of the contents of any tree; but then, on the other hand, should their valuation be disputed they have nothing further than their own private judgment to substantiate the correctness of their finding, and this in a case of dispute goes for very little. Such being the case, I always prefer the man who can back up his assertions by figures, and if he has taken the measurements of the trunk of the tree properly, such an one can verify his measurements. In measuring standing trees the operator generally uses a long pole, ladder, and cord for taking the girth to enable him to find the side of the square, and when the dimensions are accurately taken and the contents found in the usual way in cubic feet and inches, it would be hard to tell how a mistake could occur, but that such does happen is a fact, and one way in which I have known it to occur is this: Suppose a tree 60 feet high has to be valued, 50 feet of the stem being clean and free of knots, while the remaining 10 feet of the top are full of knots and branches. This last, according to one valuer's view, is not measurable timber; consequently he measures the clean stem and records the contents as follows: To Ash tree No. 1=50 cubic feet at 2s.=£5, top to be sold for faggot wood. The next valuer measures the trunk in the same way as the former, and in addition also measures some of the larger sizes of branches and limbs of the top, by which means he is enabled to add 5 cubic feet to the former contents, so that the entry in his book stands thus: To Ash tree No. 1=55 cubic feet at 2s.=£5 10s., top inferior branches to be sold as faggot wood. Now this shows a difference of no less than 5 cubic feet and 10s. in the value of one single tree. This at first sight is rather startling, yet I have known something similar to occur where both parties were apparently acting in good faith between seller and buyer. In order to obviate this state of things as much as possible the valuer should always show the length and quarter girth in his book thus: To No. 1 Ash tree, 50' X 12" X 12" = 50 cubic feet at 2s.=£5. This shows at a glance that no top branches were measured—merely 50 feet in length of the stem, whose quarter girth is 12 inches. In this way the valuer shows the whole of his calculation, and any error or difference that may occur can be seen through and rectified at once, and thus much trouble and anxiety be saved. Trees with short trunks and large heads require to be

measured in different places according to their size and shape, and the dimensions and contents of each piece recorded in cubic feet as well as the price per foot of each particular piece. All these added together will give the value of any particular tree. The basal swelling of the stems of this class of tree often extends for some considerable distance up the trunk, and if the measurer is not very careful in taking his girths and dimensions at the proper places, he is almost certain to make mistakes in valuing the very best part of the whole tree. On the other hand, the stems of such trees often exhibit the largest size right below the part where the large limbs and branches are produced, so that the valuer requires to be on the alert and take his dimensions accordingly. I have no hesitation in saying that for want of proper precaution in this respect many of the errors occasionally heard of have arisen, and it therefore behoves the valuer to try and avoid them. These remarks apply principally to deciduous trees, clean-grown, conical-shaped coniferous trees being more easily dealt with.

J. B. WEBSTER.

Timber trade.—Prices of home and foreign timber are still, on the whole, fairly maintained. Blown timber here and there throughout the country has been in many cases disposed of, so that there is likely to be no great glut in the market for some time to come. Writing on the present aspect of the timber trade, Messrs. William Cannal and Co. say:—

In the timber trade there is a general disposition to avoid speculative buying. The prevailing feeling is that prices have reached a maximum, and orders are, consequently, confined in great measure to current requirements. These continue plentiful enough to maintain delivery and saw-mill work in a tolerably fair condition. The stocks have had large additions this week by arrivals of Swedish deals and battens, chiefly to the east coast, and shipping ports are busy with discharging and storing work. Several cargoes of Quebec Pine, Pitch Pine, and Teak have come to hand on the Clyde. The public sales of the week have not been highly satisfactory in their results; buyers seem to shirk from acquiescence in the demands for increased prices for new goods offered. The business done was, therefore, considerably restricted. The stocks of pit-wood are excessively heavy, and importations continue to come forward. The demand, however, is good. Notwithstanding the heavy stocks, the prices are fully maintained, the consumption being large.

It will be seen from this statement that the prospects are still good, and as long as building and trade generally continue to flourish, in all probability the prices that have now been realised for some considerable time will still be maintained.—J. B. W.

Red Cedar pencil-wood.—The manufacture of this has for years been almost exclusively confined to Florida, where this tree grows to a large size and in great perfection. The business has been in the hands of a large foreign house, which supplies a good part of the world with lead pencils, and has been profitable. Large Cedar timber, straight grained and of a suitable quality for pencil stuff, has become scarce in Florida along the streams on the west coast, where the best was found, and factories are springing up in different parts of the south, especially in Alabama, where, at Gurley, sawing pencil stuff is already a considerable industry. The best Red Cedar, however, now left will be found near the Red River, in Texas, and in the Indian Territory, where this tree attains a greater size than it reaches in Florida, while the quality of the lumber is not, probably, in any way inferior. The world has become so accustomed to using pencils made of Red Cedar, that it will not readily adapt itself to any others. The supply of this lumber of suitable quality, however, is not large in proportion to the demand, and cannot hold out many years longer. The Red Cedar is the most widely distributed of North American coni-

fers, and in some parts of the country it is one of the most common trees; but it is in a few favoured localities only that it grows in a way to produce the straight-grained material essential for pencil-making. The distillation of oil of Cedar, for which there is now a large commercial demand, from the sawdust and other refuse, has been profitable in the pencil mills at Cedar Keys, Florida, and might be carried on to advantage in other parts of the country. It can be made, of course, from wood of the poorest quality.—*Garden and Forest.*

The Huon Pine (*Dacrydium Franklii*).—Many persons are deterred from planting a specimen of this Tasmanian tree from the erroneous and widely spread idea that it is not perfectly hardy unless in the milder portions of the British Isles. Such an opinion is certainly without foundation, as any person who pays a visit to the Edinburgh Botanic Garden can see for himself; while from there southwards to Kew, where is also a goodly specimen, not a few healthy trees may be pointed out. Generally, the Huon Pine has a semi-fastigiate habit, but the branchlets are cypress-like, finely divided, and thus impart a weeping and rather graceful appearance to the tree. A bright green describes well the colour of foliage which is amply produced and of fine texture. The soil in which this uncommon Conifer would seem to do best is that of a rich loamy nature, but not plastic, or at any time unduly overcharged with moisture. The Huon Pine grows freely after becoming established, and soon forms a notable object when placed in close proximity to any of our deciduous forest trees. Altogether the Huon Pine is a distinct and very desirable adjunct to any lawn or pleasure ground, and that it may before long meet with that favour at the hands of planters that its merits justly entitle it to is the wish of everyone who has seen even a half-developed specimen in this country. The timber, judging from the large slab at the Kew museum, would seem to be valuable in many ways, it being nicely marked, hard, and firm-grained.—A. D. WEBSTER.

Nailing fence rails to trees.—I have not seen the barbarous practice of driving nails into growing trees commented upon and condemned in your paper. I therefore would record my protest against this thoughtless way of spoiling good timber. I know there are many gentlemen who will not tolerate it for a moment, but others seem to treat the matter with indifference. This should not be, as I have often seen pounds lost in waste of wood and damage to saws, and loss of time in extracting the nails before sawing could again be proceeded with. A day or two since my attention was directed to a case of this kind where a considerable portion of an otherwise sound and good tree was rendered useless by a quantity of large nails that had evidently been driven into it many years ago. In the course of my business on estates I have often remonstrated with men when mending gaps in fences in this way. Their reply often is that it will not fall to their lot to use the timber. This is very likely true; but if the workmen are unconcerned, it is necessary that someone should see to it. What has been already done, unfortunately, cannot be undone; but if my directing attention to the subject should have the effect of arousing those who are possessed of timbered lands to the necessity of being watchful over men who are employed in mending fences, my object will be gained. It only takes a few moments longer to drive in a stake; whereas if the nail is driven into the tree, it may cause the loss of several feet of good timber, besides damage to tools.—J.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

THE WHITE LILY AND OTHER LILIES.

It may be presumed that all gardeners know the ruinous consequences of thrips to Lilies. Not having had a gardener's training, I overlooked this till two or three years ago, and used to attribute the effects produced by thrips to late frosts. Both in my large unheated Lily frame and out of doors, the upper leaves and half-developed heads often turn brown in May, much as if frost-bitten, and in bad cases the heads entirely rot away. I have tried the usual remedies for thrips with very little benefit, and the plague seems to be on the increase. I do not, however, attribute the failure of *L. candidum* in this soil to thrips, but to the cold and wet nature of the subsoil which is beyond the reach of draining. It is curious that the bulbs increase rapidly both in size and number; they never fail to make a small growth of autumnal radical leaves, but very few, perhaps 10 per cent., attempt to throw up a flower-stalk, and though the flowers open well, they are few in number. The percentage of flower-stalks this year is less than usual. I have tried for ten years every variety of soil, situation, and treatment that can be suggested, but cannot persuade this beautiful Lily to do well. Many Lilies, however, seem to like this condition of cold and wet subsoil, and such is the diversity of taste in the genus, that I believe there is hardly a garden in the kingdom in which some species would not thrive. The *L. pardalinum* section seem to do well here either in peat soil, which they like best, or in the ordinary mixture of my herbaceous beds. This consists chiefly of loam (turf from old pasture), leaf mould, and abundance of fine riddlings from any stone quarry, such as is sold as gravel. The beautiful dark variety of *L. pardalinum*, known as *californicum*, is as strong here as any of them, growing 6 feet high, with seven or eight flowers on a head. Next to these, for strong, wet soils, I should recommend *L. colchicum* (syn., *monadelphum*). Such is the love of catalogue-makers for long names, that this is generally called *L. Szovitzianum*; and though I shall be told that this name belongs to a particular variety of *L. colchicum*, and that *L. monadelphum* belongs to another variety, those who grow this Lily from seed find that the seedlings include all the varieties. The seed may be sown anywhere; in fact, seedlings come up plentifully near the parents. They flower when four or five years old, the bulb continues to increase in size without making any offsets for three or four years more, and then seems to die of surfeit when fully as large as a cricket ball. In this soil large bulbs seldom survive transplanting. Occasionally I find that a large bulb has broken up, and that the scales are producing bulbs, but seedlings can be trusted to grow better than these proliferous scales. Heads of twelve to fifteen flowers are common in my garden, and I have occasionally as many as twenty-five, but the flowers are then too crowded to do well. The flowering season lasts the whole of June. Next to these in merit come the varieties or hybrids of *L. croceum*, generally known as *L. umbellatum*. These do well here in any soil and situation, but take a year or two to establish themselves. The taller kinds, which are nearer the type, flower

here in July; the more dwarf, which have the largest heads and the best colours, are earlier. These Lilies seem adapted to all varieties of circumstances, and are far better for our climate, and more ornamental than many of the high-priced kinds. The Nankeen Lily (*L. testaceum*) does well here if planted in rather open soil, and also if not left more than two or three years in the same spot. If it is left, it dwindles away and dies out. In this respect it is exceptional, as most Lilies dislike frequent removal, but the Nankeen Lily will be at its best next summer if removed this autumn. *L. chalcedonicum*, the scarlet Martagon, the colour of which is rivalled only by the scarlet *Lychnis*, likes a north easterly aspect, and a cool, but open soil. It varies exceedingly in different parts of my garden, and in a most capricious way. A large variety, producing ten or twelve flowers on a stalk, the flowers spotted with black, seems to be most robust; but I fancy that each clump flowers well in alternate years. The yellow Turk's-cap (*L. pyrenaicum*) is often thought too common and too strongly scented for choice borders, but it has the merit of doing well anywhere, and of being the earliest Lily to flower. The red variety is less common and not quite so robust, but is far surpassed in colour by its near relation, *L. pomponium*. This is nearly as bright as *L. chalcedonicum* and flowers six weeks earlier. It has a way of shedding its buds just before they open. This habit is due to some weakness of constitution in an ungenial climate, as it has prevailed here amongst bulbs obtained from several sources, but by adding a large proportion of stone riddlings, perhaps two-thirds to the soil in which I plant them, I have nearly cured the fault.

The purple Martagon likes shade and a stiff soil, and I get enough of it from chance seedlings in the shrubberies. The dark variety known as *dalmaticum* also does well enough, but the white variety has a tendency after two or three years' cultivation to break up into small bulbs, which I cannot coax up to flowering size again. Friends in Ireland, where it does well everywhere, supply me with grand bulbs, which enable me to keep up a good show of spikes 5 feet high with forty or fifty flowers, but if left to my own resources I should soon fail, and I have never yet seen a seedling Martagon here with white flowers, from which I conclude that the seedlings do not follow the colour of the parent. *L. Hansonii* is an easy Lily to grow, but hardly worth the price asked for it, and *L. giganteum* I tolerate for its grand leaves and stalk. It does very well in deep light soil where sheltered from burning sun and high winds, but a flowering season of a fortnight after five years' hospitality in a choice corner is hardly a fair recompense. I have had about six flower-stalks this year, the largest with fifteen flowers, the plants having been raised from seed ripened eight years ago in this garden. *Tigrinum* I grow on raised beds of very light soil, but it is not a great success. *L. canadense* I described last year, and this ends the list of Lilies which do well outside. Others do very well in a large covered frame, which I close at the top in winter to keep out wet, and in flowering time to keep out sun. These are *L. Washingtonianum*, *Humboldtii*, *Parryi*, all of which ripen seed which comes up freely; also *L. Brownii*, which sometimes disappears for a whole season and the next repays me by a cumulative flowering. Some kinds fail utterly inside and out, such as *L. elegans* (all varieties), *L. Kramerii*, *L. speciosum*, *L. Leichtlinii*, *L. auratum*, and *L. longiflorum*. *L. tenuifolium* does well as a greenhouse plant in pots. *L. neilgherrense* takes eighteen months here, even

in a greenhouse, to complete its annual cycle, and would require a stove. I have not mentioned *L. superbum*, the American Swamp Lily. Though so nearly allied to *L. canadense*, I cannot satisfy its requirements here, and it dies after struggling through two or three seasons. I believe one cause of failure is its late flowering. All late-flowering Lilies are subject in this garden to be ruined by the form of mildew known as Lily spot. Most of the early Lilies have their foliage attacked by it after flowering, but this does not affect their welfare much. But when St. Swithin turns July into a wet, wintry month, which happens in Cheshire four years out of five, Lilies which are caught still in bud have not much chance of flowering well, so I advise those who garden under such conditions to give preference to early-flowering kinds.

C. WOLLEY DOD,

Edge Hall.

THE VITALITY OF SEEDS.

THAT some seeds will retain their vitality for a considerable number of years has been before proved, whilst other statements made concerning this interesting topic have been doubted. The following remarks sent me by a friend may prove interesting to some readers of THE GARDEN:—

"In the summer of 1873 a well was sunk near Ewhurst, in Surrey, upon a hill about half a mile from the village, for the purpose of obtaining a good supply of water for the house and farm. The elevation was from 750 feet to 800 feet above the sea-level. The well was 305 feet in depth, and the whole way down was through a deep yellow sand with a thin crust of about 2 inches of ironstone every few yards. There were not more than 3 or 4 tons of stone in the whole depth, and it was of a soft nature. Ultimately a very hard blue stone was reached which was nearly level across the bottom and about 6 inches thick. When that was broken the water gushed through and increased the water in a stream running about a mile away in a south-west direction. This stream becomes much smaller when the well, which never has more than 5 feet of water, is pumped hard. I saved about 2 gallons of the sand and some wet flakes off the stone. Some I made a bed of in the garden, some I put in a garden frame, some in a flower-pot, and another small quantity under a bell-glass. Under every condition the common field Thistle came up as thickly as possible. Those in the open ground I left to grow and they flowered and produced seed. I may add that some of the soil from nearer the surface put under a bell-glass produced the common Bracken Fern." Any further information is promised so far as my informant can give it, but he has already disclosed the result of what I think was a most interesting experiment. One is lost in conjecturing how long these Thistle seeds may have lain buried.

Coincident with the receipt of this information, other of a similar nature comes to me from Stowmarket, in Suffolk, viz., that some heavy soil which had been dug from several feet down was spread upon the surface and shortly became full of the Sow Thistle. I have also observed that Dock seeds retain their vitality, although deposited in the mud at the bottom of a pond. I recollect a pond being cleaned after many years' neglect, and the mud was carted to a meadow and laid in a large square heap about a yard high. This was in the spring of the year, and before autumn there was such a growth of Docks as to effectually conceal every inch of bare earth. This instance, however, is not so strong in its bearing upon the question of longevity, as there is the possibility of the earlier deposited seeds having perished, whilst those which grew might have only been in the mud one, two, perhaps at the most three years. Docks grew so plentifully in the ditches through which the water passed, that even one season's crop of seeds was almost sufficient to produce all that grew upon the mud heap. It would seem, however, with these two very rank

weeds, Thistles and Docks, that there is even greater tenacity of life in the seed than in the root, for it appears to have a great amount of vital energy.

A. H.

ORCHIDS.

W. H. GOWER.

THE FLYING DOVE.

(PALUMBINA CANDIDA.)

THIS beautiful plant, although introduced nearly fifty years ago, has never become well known, and recent collectors of plants do not appear to have found it, so that in all probability the plant is scarce in its native habitats. The first time I ever saw this Palumbina was in 1862, in the collection of the late Consul Schiller at Hamburg, and a very handsome specimen was given me by him for the Kew collection, and at that time it was, I believe, the only plant in England. It was named *Oncidium candidum* by Lindley, doubtfully, but its differences were pointed out by Reichenbach, and the present genus established for it. I am aware that Bentham has returned it to the genus of Lindley, but as Bentham would never look at living plants, he would not be likely to see the differences. The plant is now flowering in Mr. Williams' collection at Holloway, and its extreme beauty has induced me to bring it to the notice of the readers of THE GARDEN. It is not a showy plant, neither is it a large-flowered species. The flowers are somewhat small, and last long in beauty.

It should be grown in a hanging basket, or if in a pot it should be placed near to the glass. The pot, or basket, should be well drained, and the potting material should be good peat fibre, mixed with some chopped Sphagnum Moss. During the summer months it will succeed in the Odontoglossum house, but in winter it should be removed to the cool end of the Cattleya house. At no time, however, should it be allowed to get dry; although, of course, water must be given in less quantity, and with more care during the dull days of winter than in the growing season, but the plant should never be too freely supplied with water to its roots. It is an elegant plant, well deserving the attention of all growers of Odontoglossums.

PALUMBINA CANDIDA is a distinct small-growing plant, and at present the only species known. The pseudo-bulbs are long and narrow, and bear on the apex a dark green leaf upwards of 6 inches in length. The scape, which rises from near the base of the pseudo-bulb, is erect, of a deep purplish brown hue, and bears four or five flowers, which are each about an inch across, flat, thick, and waxy-white, and have a striking resemblance to little doves on the wing. The sepals and petals are all pure white; lip pure white, bearing near the base a fleshy crest, on which is a pale stain of yellow and a few dots of crimson. It blooms freely during the summer and autumn, and the flowers last many weeks when the plants have become established and of fair size. Its native country is sometimes given as Guatemala, and by other authorities as Mexico.

Grammatophyllum Measuresianum.—This is a new species introduced by Mr. Sander, of St. Albans. It has not yet flowered in this country, but flowers received from the collector are now before me, and the plants have been distributed amongst our best growers, so that we may soon hope to see the veritable plant in bloom. The introduction, however, of a living species of this genus is well deserving record. I am told the collector reports having seen this species with fifteen spikes upon one plant, producing a gorgeous appearance, the spike reaching several feet in height, and bear-

ing upwards of sixty flowers. The sepals and petals are about equal, spreading, yellow-tipped, and profusely spotted with chocolate or purple; lip three-lobed, side lobes large, erect, with purple lines, front lobe small, also lined with purple and bearing a crest of downy white hairs on the disc. In growth the plant does not appear to be so strong as *G. Ellisi*, and it bids fair to be a great acquisition to our Orchid collections.—W. H. G.

HARDY ORCHIDS.

THE LIZARD ORCHID (*Orchis hircina*) is now in full bloom in the open border, and quaint and curious it looks. One of the specimens measures 28 inches in height, the flower-spike alone being about a third of the total length, and the individual flowers with their curious labellum 3 inches. It is a stout growing plant, the stem being thick, strong, and jointed, in the latter respect differing considerably from any other native species of my acquaintance. Ornamental the flowers can hardly be called, for they are usually of a chocolate hue suffused with green. The petals and sepals are outside of a bright green, inside of a dull brown, while the lip is of the same hue or lighter, and distinctly marked with reddish-purple spots except the tail-like appendage, which is of a uniform chocolate brown. I fear that this bold-growing native Orchid is extinct as a British plant. It is not at all difficult to grow if well-rooted specimens are at first obtained, but to coddle on for five or six years the poor specimens offered for sale by British nurserymen is, I can speak from experience, very disappointing.

THE FRAGRANT ORCHID (*Orchis conopsea*) is as sweet smelling and pretty a plant as is to be found in the whole British flora. To see the chalky fields at Dover a week ago with this Orchid was a grand sight, many of the plants being 11 inches high, and with bright heads of thickly produced flowers. The colouring in the flowers does not differ much, the usual mauve being noticeable in the majority of specimens. It may seem strange, however, that when the plant is growing in dampish peaty soil the flowers are of a richer hue than that just described, some of them passing into almost a rich pinky-purple. A friend of mine grows this Orchid most successfully as a pot plant, half-a-dozen specimens forming a group in a 6-inch pot.

THE PYRAMIDAL ORCHID (*O. pyramidalis*) grew plentifully with the latter all along the cliffs from St. Margaret's Bay to Dover Castle. It is a more showy species, the thickly arranged heads of flowers being of a bright crimson, and beautifully poised on 12-inch stalks. How attractive a field studded with this pretty Orchid looks in mid-July none but those who have seen it can imagine. For years I have successfully grown both of the above Orchids, and they are as easily managed as a Daffodil or a Crocus.

THE LARGE-FLOWERED HELLEBORINE (*Cephalanthera grandiflora*) is about as showy a garden plant as one could desire. Twenty-seven plants I counted beneath a little Spruce Fir of 9 feet branch spread in one of Sir John Lubbock's woodlands at High Elms. That it is a pretty and desirable garden plant few who have seen it at home in some of the Kentish chalky woods will deny.

A. D. WEBSTER.

Odontoglossum Harryanum at Rosefield, Sevenoaks.—This appears to be flowering freely in many collections, and in the gardens of Mr. De B. Crawshaw it is exceptionally good, numerous plants being just now in full beauty. One plant has a branching spike, and this from the first growth from an imported plant, some of the spikes bearing a dozen flowers. Mr. Cooke, who has charge of these plants, says that he looks forward to its producing a fine branching spike another season. He says it thrives well with him in the cool house during the summer, but that it requires warmer treatment in the winter, and that the plants are removed into the Cattleya house at this season. The pots are well drained and a very liberal supply of water is given during the period of growth, and

but a small quantity of peat fibre is used about their roots. If by strength in the established plants the objectionable habit of its petals closing together could be overcome this will certainly prove to be one of the grandest species in this beautiful genus.

Cattleya Schilleriana.—I have seen this beautiful species flowering in several collections round London during the past week or two, and it is a very happy sign of the times, for although the plant first flowered in the Schillerian collection upwards of thirty years ago, it has always been rare and difficult to manage. The flower varies much, but all forms are beautiful; it is dwarf in growth, and resembles *C. Aclandiae* both in habit and flower. By some it is said to be a natural hybrid between the last-named species and *C. guttata*; this, however, I have never been able to recognise. It is a matter of indifference to the cultivator whether it is species or hybrid. It usually grows some 6 inches or 8 inches in height; the stem-like pseudo-bulbs are club-shaped and furrowed, bearing two or three leathery leaves, which are deep green above, paler beneath, sometimes tinged with a reddish hue. The scape is usually about two-flowered; sometimes only one is produced, but I have seen it with five flowers, each nearly 4 inches across. The sepals and petals are about equal, waved at the edges, and olive-green or bronzy, more or less spotted with purplish-brown; lip three-lobed, the middle lobe large, rich magenta-purple, flushed with rosy-purple, streaked with radiating white lines, and flushed with yellow on the disc; the side lobes are small, white on the outside, but within streaked with rosy-purple on a pale yellow ground. It is a very showy and beautiful plant, and one that deserves the attention of every grower of Orchids. The plant requires plenty of heat and moisture, with good exposure to the sun. It thrives best on a block of wood with a small quantity of Sphagnum about its roots. Treated in this manner it frequently produces two growths in a year, and its flowers are produced upon the newly-formed bulbs; thus two crops of bloom may be obtained in a season.—W. H. G.

SHORT NOTES.—ORCHIDS.

Cattleya Morganiae.—This very chaste flowered kind, which is a form of Mendeli, we recently noted in Mr. Measures' collection at Camberwell. The whole flower is of the purest white, saving the orange throat, with just a tinge of magenta on the point of the middle lobe of the lip. It is a rare and beautiful variety.

Cattleya Gaskelliana alba.—This, one of the rarest of the white Cattleyas, is now flowering with Mr. Crawshaw, and is a most desirable variety, the whole flower being pure white, the lip prettily frilled round the edge, and stained in the throat with lemon-yellow. This variety is a free-rooting plant, and flowers as soon as the growth reaches maturity.

Odontoglossum Pescatorei at Rosefield.—Amongst the numerous Odontoglossums in Mr. Crawshaw's garden, *O. Alexandræ* in fine variety has been grand. A magnificent example of *Pescatorei*, however, deserves notice. It has a spike bearing thirty-five large and broad flowers, which give it a massive and bold appearance. All the Odontoglossums in this establishment are in the best of health, and are treated very cool.

Phajus Humbloti.—This is a Madagascar plant at present rare in cultivation. It requires strong heat and moisture to develop its charms. The plant is now flowering in Mr. Tautz's collection at Shepherd's Bush, and its beauty should lead to its more extensive cultivation. The sepals and petals are pale rose, the lip reddish-crimson, paler on the disc, where there is a large, raised, fleshy crest of two lobes of a soft yellow, the edge of the lip all round being deeply lobed and fringed.

Disa grandiflora.—This beautiful species is usually very good at Rosefield, Sevenoaks, and although the plants are scarcely so fine as last season, there are about twenty spikes of beautiful flowers. The plants are grown quite cool, and during the winter they are kept in quite a low tempera-

ture. This plant should be largely grown by all plant lovers, and it should be propagated largely in England, as it is not now so easily obtained at the Cape.

PROPAGATING.

BORDER CARNATIONS.—So much has been written in favour of Carnations as bedding plants that it is unnecessary for me to say much more. Some of the recommendations may be a little misleading to those not well acquainted with the subject. It is very well to recommend seedlings and to discuss the merits of foreign *versus* English saved seed, but my experience is that only a certain, or rather uncertain percentage of good varieties can be obtained from either, and it is equally uncertain what the colours may be. It is therefore necessary to propagate from layers or pipings. A batch of seedlings should, however, be raised every year, and by selecting the best varieties to take the place of older sorts which have become weakly (for undoubtedly many sorts do lose vigour after a few years), a much healthier stock may be kept up. It is now fully time that layering should be commenced. This, if carefully done, will not disfigure the beds. First of all, the flower-stems should be tied up, placing the sticks so that they will not interfere with the layering. All the dead leaves should be removed from the base of the plants, and some light sandy soil should then be put round the plants, using sufficient to come well up to the base of any side shoots which may be a little above the ground level. The next thing is to make the incision. Where the shoots are long I like to make the cut some distance from the old stem, so that the young plants when taken off will be short and stocky. The cut must be made from the under side of the shoots, the stems should be cut about half way through, and split through at least one joint. In pegging the layers down care must be taken not to bend the shoots too short, or they will split off, either from the old stem or where the cut is made. In covering them up with the soil care should be taken not to cover up any leaves, and the ground should be left so that water can be given without running off. In some soils it may not be necessary to water much, except in a very dry season, but in most cases, except in showery weather, a little watering is beneficial, as it encourages surface rooting.

It is quite a matter of opinion whether the layers should be taken off and planted out in the autumn, or whether they should be potted and kept in cold frames during the winter. I prefer the latter method, but it is essential that they should be planted out early in the year, say before the end of February, if the weather permits. I believe that the reason why Carnations are not so popular as they deserve to be is because the necessity of propagating annually, and the proper time of doing it are not thoroughly understood.

The old crimson Clove and the pretty blush-pink variety, also the beautiful white Gloire de Nancy, must all be propagated annually if a clean healthy stock is to be kept up. Another great point with all Carnations is to give them fresh soil every year. Where beds are planted expressly for stock, fresh ground should be selected every year, or, if necessary to replant in the same position, the ground should be thoroughly cleansed and some fresh soil and manure added. Wireworms are most destructive to Carnations; therefore the greatest care must be taken to avoid planting in ground where this troublesome pest abounds.

IMPATIENS JERDONIÆ.—This distinct and pretty Balsam deserves a place in every collection of stove flowering plants, yet it is rarely met with. It is not quite so easy to manage as many of the Balsams, but it will well repay the extra attention which it requires to bring plants to perfection. This species may be propagated from cuttings. Short pieces of the thick fleshy stems will root well if taken off while the plants are growing freely; they should be put singly into small pots, using light sandy compost. They may be placed in the close propagating

pit where there is a little bottom heat. No water should be given until the cuttings are well callused. Like cuttings of most plants with fleshy stems, they are liable to rot off if moisture is given too freely. As soon as sufficiently rooted the plants should be potted on, and loam, leaf mould and peat in equal parts, with a little manure and sand added, is a good compost for them. The plants should be grown in a light open position, and after the pots are well filled with roots liquid manure may be used. During the winter the plants should be dried off, and when started in the spring they soon come into flower and continue to keep up a bright display for a considerable time. A.

NOTES OF THE WEEK.

The white Baneberry (*Actæa spicata alba*) is now in full bloom, and a very showy plant it is when in full vigour and flower. The spikes are straggling, but graceful and handsome.

Oncidium pubes is a small and very free-flowered Oncid now in bloom at Kew. There is a small plant in a basket carrying three crowded spikes of small yellow flowers, which are barred with chestnut-brown.

Flame-flowered Nasturtium (*Tropæolum speciosum*).—I have sent you a spray of this *Tropæolum* to show how brilliant is the colouring of the scarlet flowers. The plant is making a great show on a north aspect.—J. C. F., *Forde Abbey Gardens, Chard*.

Carnation Apricot (syn., Mrs. Reynolds Hole).—This is in great beauty now in Mr. Laing's nursery at Forest Hill. It appears to be a profuse bloomer, and the colour is rich deep apricot suffused with a tinge of salmon. It is a great beauty and worthy of attention.—G.

Cattleya superba is a beautiful species of slow growth, growing about 10 inches high, and bearing its flowers during this month. These are very sweet, rich rose in the sepals and petals, and with a very handsome magenta-crimson lip. It is one of the choicest introductions from British Guiana. A specimen is in bloom at Kew.

Meeting at Chiswick.—A meeting of the floral committee was held at the Society's Gardens, Chiswick, on July 18. The committee inspected the collections of Ivies, Stocks, and hardy flowering annuals growing in the gardens, giving marks of merit to the most approved varieties. A full report of these trials will be published in the Society's Journal.

Self Carnations in London.—These are flowering splendidly in the Embankment Gardens near Charing Cross. There are large clumps of the old Clove and a blush-flowered variety, both of strong growth and carrying a mass of bloom. It would be well if such a hardy and beautiful flower as the Clove Carnation were as finely grown in all gardens as on the Embankment. There are few finer town plants.

Opening of Clissold Park.—North London can now boast of a park about 53 acres in extent. This valuable tract of ground was formally opened to the public on Wednesday last by Lord Rosebery. Towards its purchase the Charity Commissioners contributed £47,500, the Metropolitan Board £25,000, while the remainder of the required £96,000 was raised from the adjoining districts.

White Musk Mallow (*Malva moschata alba*).—We have rarely seen this plant in such beauty as it is at the present time. It forms a branching pyramidal bush about 2 feet high, and bears abundance of pure white flowers, each from 1 inch to 1½ inches in diameter. It is a perennial, but requires a warm situation if left out all the winter; we have frequently lost plants in the open, though our soil is a very sandy one.

The Looeæstrifis (*Lysimachia*) are now in perfection, and the best we have yet seen is one called rosea; the flowers, of a handsome deep rose colour, are rather closer on the spike, and the habit more compact and far neater than that of any of the other forms we know. *Lysimachia Græfferi*, an American species with a trailing habit, is essentially a rock plant. Its trailing or procumbent stems, thickly studded with purple flowers, give it quite a unique appearance. *Lysimachia alata* is almost its counterpart, but the stems are upright, about 18 inches in height.

Tree Lupine (*Lupinus arboreus*).—A fine bush of the yellow Tree Lupine in the mixed border at Drinkstone shows that this beautiful plant is still in cultivation. It is a shrubby plant of the highest

value and greatest beauty, and too seldom seen. It flowers long and profusely, and nothing could be more beautiful than a large bush of this Lupine when covered with its spikes of soft yellow flowers which are sweetly scented. Like all the Lupines, it is easily raised from seed.—A. H.

Crocoshia aurea imperialis.—Whoever described this fine novelty on page 64 of your last issue cannot, I think, have seen or been personally acquainted with it, as instead of being of dwarfer stature than the ordinary or typical form, as stated in the paragraph, it is of much more robust and taller growth. My plant (received direct from the German nurseryman to whom its distribution has been entrusted by its introducer) is already 4 feet high and has not yet ceased to grow.—W. E. GUMBLETON.

Spiræa venusta.—I send you a flowering spike from a strong plant of this growing on the edge of a pond. The plant is now in full flower, and serves to show what a fine thing it is and how beautiful a large group would be in such a position. Almost, if not quite, equal to *S. palmata* in colour, it is far superior to that kind in habit, for its strong, erect flower-stems each grow nearly 6 feet high. One I measured to-day was 5 feet 9 inches high. The flowers also last much longer than those of *S. palmata*, which is another great advantage. The height of the flower-stems and the large cymes of bloom show that, in common with most of the Meadow Sweets, the waterside is the place to grow it, for when planted in the ordinary flower border it does not reach more than half its proper proportions.—J. C. T., *Livermere*.

Seedling Carnations.—I have sent you a collection of Carnations all of my own raising. I do not know that in respect of colour they are very distinct from others in cultivation, but I am by degrees obtaining varieties with a very robust constitution, and which appear able to withstand any amount of wet such as we had last season. Nearly all my (best?) named sorts came to an untimely end then, and made a miserable show, producing poor stunted "grass," and very little of it. The "spot," too, was very destructive, so that if survival is any test of merit, these may certainly claim to be the "fittest" to adorn the garden and drawing-room, if not the show-board. But I fancy that even then they would not be altogether despised. Some I have tested for two or three seasons and honoured with names, though that does not make them any the better, or any the worse.—R. W. BEACHEY, *Fluder, Kingskersnell, South Devon*.

* * * Bold and excellent flowers.—ED.

—Herewith I send a few seedling Carnations, and I think you will say they are very pretty. You will see a very rich maroon amongst them, also a bright scarlet. Of course, I cannot form an opinion of their habits of growth or constitution this season, but shall be able to do so next if I am able to save layers from them. I prefer the self-coloured flowers; there is nothing to equal them in my opinion. I have a capital yellow one, but, unfortunately, there was not a flower out at the time I cut the others. Taking into consideration the hardships these beautiful plants will endure, the quantity and wonderful variety of their flowers, I think there are very few hardy plants that can equal them. I might say that most of these flowers have been obtained from seed which I saved in 1887.—T. ARNOLD, *The Gardens, Cirencester House*.

* * * A varied and bright lot. Save the buff one, if you can.—ED.

The Climbing Fumitory (*Adlumia cirrhosa*).—Anyone in quest of a really handsome, neat climber should not fail to give the above plant a trial. For arbours and such places it is perhaps best suited, and when thoroughly established produces a wonderful effect. The stems are deciduous, but even when they have died off the litter left behind is so insignificant as to hardly require removing. The plant is found in Canada and North Carolina, in shady places and along streams, and serves admirably as a screen under trees or in other shady places. Seed is produced in the greatest abundance, and will germinate freely in a cold frame.

The flowers, not unlike those of the *Dielytra*, but smaller, are of a pale violet colour, often nearly white.

Bulbs in Holland.—From Haarlem it is reported that the crop of *Hyacinths* and some other bulbs is only a medium one, which is attributed to the very warm weather during the growing period. The bulbs of *Hyacinths* especially are smaller than usual, but it is expected that they will give fine flowers and be more suitable for early forcing than was the case with those of last year.

Phalænopsis Marie is in good bloom at Kew. This is one of Mr. Burbidge's lucky finds in the Sanda Isles, and is a choice and pretty species. As regards growth, it may be compared to *P. sumatrana*, and the flowers are somewhat like those of that plant in form. The flowers, each a little over an inch across, and blotched with chestnut-brown on a white ground, are borne in a drooping raceme; the extreme base of the sepals and petals is lilac-mauve, and the lip is of the same colour.

Ivy-leaved Geraniums on wall.—I recently noted these plants covering a wall in the neighbourhood of Forest Hill, and they certainly produced one of the finest effects I have seen for many a day. The *Geraniums* were apparently old plants reserved for the position. All the best kinds appeared to have been selected, and the wall, which was a long one, was covered with bloom. I certainly would recommend these plants to the attention of those having bare division walls in their gardens, as the effect they produce is truly beautiful.—W. H. G.

Cassia lævigata.—Trained up the roof of the greenhouse at Kew this handsome *Cassia* is flowering profusely, and, judging by the quantity of bloom and its fine healthy foliage, the position suits it. One thing most essential for flowering this *Cassia* is to get the shoots well ripened, and if it cannot be placed in such a position, it should be grown in some sunny spot. It may be grown in a warm border out of doors during summer, where it will be laden with its handsome bright yellow flowers, but the plant should be taken up and potted in early autumn before frosts begin.

Lathyrus Drummondii.—The writer of a paragraph in THE GARDEN, July 13 (p. 22), speaks of this as being synonymous with *L. Sibthorpi*. The plants I grow under these names are quite different. The former is flowering at present, and has clustered flowers of a brick red colour, the plant being of a rambling nature. *L. Sibthorpi* has elongated rosy-purple flower-spikes, and its season of flowering is long past, as it is probably the earliest of the Everlasting Peas. Its habit is less rambling than the other. *L. rotundifolius* and *L. Drummondii* I consider synonyms. In the "English Flower Garden" all three are said to be different. It is desirable that the synonymy of these and allied sorts should be cleared up authoritatively by some one having access to authentic specimens.—P. NEILL FRASER, Murrayfield, Edinburgh.

—A note in THE GARDEN, July 13 (p. 22), speaks of an Everlasting Pea under the above name, and goes on to say it is the *Lathyrus rotundifolius* of the Kew authorities. This self-same plant is by some called *Lathyrus rotundifolius Drummondii*. The note goes on to say that "there is a similar, if not identical, plant grown in nurseries under the name of *L. Sibthorpi*." I find that there exists great confusion as to the right names of these beautiful Peas, for whilst *L. Sibthorpi* is often sold as *L. rotundifolius*, this last named kind is hardly ever obtained. *L. rotundifolius* and *L. Sibthorpi* are two distinct species. *L. Sibthorpi* is the earlier to bloom, has larger flowers, which are of a totally different colour to those of *L. rotundifolius*. Mr. Thompson, of Ipswich, writes me to the effect that the name *Drummondii* should be dropped altogether, for he says he originally obtained his specimen from Mr. Green, formerly Mr. Wilson Saunders' gardener at Reigate, and that Mr. Green gave it the name *Drummondii* in ignorance of the older name of the plant.—A.

Rhodochiton volubile.—This elegant Mexican plant is one of the best summer climbers for

the rafters of a cool greenhouse, and where the long slender shoots can be allowed to trail at random or hang down without being tied too close, it is an abundant bloomer. The flowers, which are of a reddish colour with a large dark-coloured corolla, are very distinct and handsome. It is easily propagated by seed or cuttings and being a free grower it likes plenty of root room. In a warm situation out of doors it will be found to flourish, but requires some protection in winter.

The large white Convolvulus.—Some large beds of *Laurel*, which have been kept cut low and formal, now present a beautiful appearance, for they are entirely overgrown with this, on which thousands of flowers are expanded. I have often wondered whether our gardens would not have been more beautiful if the *Laurel* had never been introduced, for it strikes and grows so freely that it seems to be overdone almost everywhere. Under the above circumstances, however, I am inclined to forgive it much, as it serves as a peg on which to twine wreaths of beauty without having to dread the result of the almost too fond embraces, as we might have done if the beds had been filled with something better.—J. C. T.

The very severe hailstorm which visited the London district last Wednesday seems to have been of a local nature, as in some districts no inconvenience whatever was felt, while in the south-west, including Kew, the damage seems to have been very great. The collection of *Gourds* which is grown up poles in the herbaceous grounds at Kew Gardens has suffered to a large extent; the leaves are simply riddled, and in many cases are mere shreds. The Tobacco collection also, which is now a very fine one, has been damaged beyond recovery; the leaves on many of the kinds have not a whole piece the size of a shilling; in some cases the plants were entirely broken down, and as a striking proof of the great force of the storm we were shown *Laurel*, *Aucuba*, and even *Ivy* leaves that had been pierced with the hail.

Malope trifida.—The above species and the varieties *alba* and *grandiflora* are certainly very showy hardy annuals, and should find a place in every garden where bold effects of crimson or white are desired. They never exceed 2 feet in height, and they are much branching and withal compact in habit. On a light soil they never require stakes nor support of any kind, and just now, notwithstanding the late severe rains, they are making a magnificent show. They are natives of Southern Europe and may be classed with the hardy annuals, and seeds may be sown in the open ground as early as the end of March. Another sowing a month later will give a succession of bloom until the frosts come. Although these plants look well in small tufts in the flower border, they require to be grown in a mass to be fully appreciated.

The Eryngiums, or Sea Hollies.—These beautiful plants are at their best, and bold groups in the garden, on the border, higher parts of the rockery, or associated with the finest hardy plants give a peculiar shade of blue and distinctness no other flowers can supply. There is a selection of them at Kew on a sunny border, and here in the dry soil and warm position *E. giganteum* has made a splendid head, the large even bracts forming a kind of silvery saucer to the blue flower-head. It is a strong-growing kind and makes a rich group by itself. A contrast is the dwarf native *E. maritimum*, a cheerful plant for a dry soil. *E. dichromum* has small flower-heads, and in this respect is like the free and showy *E. planum*, one of the best of the Sea Hollies. We have never seen this better than in a Surrey garden last season, the plant one mass of flowers. *E. Bourgati* is a good kind, so is the dwarf *pumilum*, which has very much divided leaves and richly coloured bracts of a deep pellucid blue. *E. Kotschyianum* is very free, the flower-stem and flowers deep blue, the bracts narrow. Another beautiful kind is *E. amethystinum*, in which the peculiar metallic-blue colouring is seen in its fulness. There is a splendid clump of *E. Oliverianum* on the rockery, and this

is as fine in its way as either *giganteum* or *amethystinum*. Bees are remarkably fond of *Eryngium* flowers, and it is curious to see their marked appreciation of those of *E. planum*. Apiarians should plant the Sea Hollies near the hives as food for the bees.

Venus's Fly-trap (*Dionaea muscipula*).—Considering the great amount of interest evinced in this remarkable plant, it seems strange that one does not see it oftener in cultivation. We have grown it for many years in the open air, and it is just now producing several of its large, white *Parnassia*-like flowers. It may be remarked that the leaves, though not so active as when the plant is grown in a cool place under glass, go through exactly the same kind of movement, opening and closing on contact with anything. The plants are evidently in perfect health, though they have not been disturbed for the last three or four years. We believe that many curious plants, such as the *Dionaea*, the *Pinguicula*, *Drosera*, *Sarracenia*, &c., could be grown with ease in a sitting-room if placed in a pan filled with Moss and covered with a bell-glass.

Campanula grandis alba.—This fine *Campanula* has been one of the best things in the hardy border this year. To grow it well it should be taken up and divided in the autumn, retaining only the very strongest crowns for replanting in the border, and throwing away the small crowns, or planting them in the reserve garden. If this is done, each strong crown will throw up a fine spike from 3 feet to 4 feet high, which will be covered for the greater part of its length with large pure white flowers for two months or more. In common with *C. pyramidalis alba*, it continues pushing buds from the stem, and if the earliest flowers are picked off as they fade the spikes remain fresh and beautiful for a long time. This annual division and selection are necessary to secure the best results, for if left alone many weak growths will be made and the group will be patchy, while the few spikes thrown up will be comparatively small. About forty crowns planted 8 inches apart will make a fine group, and from this number we have this year had thirty-seven good spikes. *C. persicifolia* and its white variety succeed well with the same treatment. The flowers will be much finer, and the spikes will run to twice the height of those plants left undisturbed; in fact, I believe this to be the proper treatment for all the tall-growing varieties. Another *Campanula* which has been very fine is *C. latifolia macrantha alba*; this and *C. latifolia macrantha* are capital plants for rough places.—J. C. TALLACK.

Notes from Almondsbury.—No one has sung the praises of *Delphinium cardinale*, scarlet. It is very tall—quite 10 feet—and straggling, but covered with large scarlet blooms and very enduring. Mine came from Max Leichtlin. *Campanula Michauxii* is astonishing. The flowers are pure white, lasting, and abundantly produced. *Milla biflora* has at last condescended to bloom. How lovely! quite the purest white flower I know. *Ipomæa pandurata* in the open, *I. rubro-cærulea* in the house are delightful just now, the latter as easy to raise and bloom as any annual. *Montbretia Gerbe d'Or* and a large deep red one, as also *M. crocosmiflora*, are very satisfactory. These increase so rapidly in pots that division every year is absolutely necessary. That fine hybrid of *Rosa rugosa alba* called *Madame Georges Brunt* bloomed well and early in a pot in the house. It is certainly not a novelty. Canon Ellacombe has precisely the same plant long established in his garden. By way of encouragement to lovers of herbaceous plants, I may mention that I have a bed of these 150 yards long. On March 1, 1889, I had finished digging the bed; it was a piece of Grass—old pasture land—on February 15. By March 15 it was planted, in heavy snow, with plants from Shirehampton, 7 miles away. These plants were all dug up and kept covered with long manure for four weeks, then removed here. Result now—lost about six *Roses* and a few other plants. The whole bed has been gay with flowers from May. The soil, a deep loam, now in most perfect condition. The bed is 8 feet wide.—C. O. MILES.

BEYTON GRANGE.

FROM Bury St. Edmunds to Beyton is about six miles, and all who pass that way will see Beyton Grange, for the charming house and pretty garden, so faithfully shown in the engraving, stand by the roadside. It is the residence of Mr. E. Le Heup Cocksedge, and though it is little more than a roadside villa, yet it possesses a beautiful garden, which far exceeds what is generally seen in such places. The house nestles down in front of some tall silvery Willows. Its walls are entirely hidden with Ivy, whilst Roses and Clematises scramble over the porch, and our native large white *Convolvulus* becomes a beautiful thing as it climbs up the face of the Ivy and its flowers peer out

tainable from this system. The old *Gazania splendens* creeping about the ground and blended with blue *Lobelia*, the purple *Verbena venosa* associated with Flower of Spring *Pelargonium*, the curious *Salvia Horminum* with coloured bracts standing out from and above dense tufts of the dwarf *Tagetes*, scented-leaved *Pelargoniums*, and the cool grey-leaved *Cineraria* toned down the bright masses of other *Pelargoniums*; these were some of the better and less common charms of this bedding system. They were simple harmonious combinations whose beauty was not lost in the complexity of pattern arrangement. But with all this array of flowers, gorgeous in their summer dress, I missed the fine hardy plants which would look well in some of these beds, plants which by scent and fine form appeal to other senses besides that of sight

good, will not content, but lead to the creation of something better and of a more permanent character. A. H.

KITCHEN GARDEN.

PRIZE-WINNING VEGETABLES.

A CONSIDERABLE number of flower shows are held in the home counties, more especially during July, but in other parts of the country nearly every town and important village contrive to have an exhibition during August. Vegetables, though not the most attractive feature at all of these, yet play a very important part in the display, gardeners, including many enthusiastic amateurs as well as



Beyton Grange, Bury St. Edmunds. Engraved for THE GARDEN from a photograph sent by Mr. Edward Le Heup Cocksedge.

from the dark green leaves. Window boxes filled with flowers also varied the Ivy mantle upon the wall. A border round the house was filled chiefly with *Marguerites*, and well they looked in broad masses, with a foreground of Ivy-leaved *Pelargoniums* and the grey-leaved *Cineraria maritima*, whilst a few little masses of a deep blue *Lobelia* gave variety of colour. The arches, which look so beautiful in the picture, lose none of their charm by an inspection. *Gloire de Dijon* Roses and *Clematises* are intermingled in wild, free masses, forming huge wreaths of foliage and flower. The flower beds are all filled with bedding plants of the usual type, but well grown and abundantly flowered. These beds, however, were not a repetition of the usual scarlet, yellow, and blue. They exhibited as much variety as is ob-

alone, plants which when brought to our gardens and planted remain there and increase in interest, size, and beauty as each season rolls round. There may be visionary delights in gazing upon these masses of colour on a warm summer's day, but even in the midst of the feast there will crop up memories of the past. How often does an early frost come and make the garden bare; one frost, perhaps, will be succeeded by a month or six weeks of fine weather, in which such a garden has no enjoyment to offer. This should not be so, because selected hardy plants, cultivated as are the bedders, will flower as freely and continuously. It is only when the severer frosts come that they cease to bloom. There is abundant evidence at Beyton Grange of the owner's desire, but it is to be hoped that present realisations, though

cottagers, taking great interest in this department. Undoubtedly, flower shows have done much to bring into prominence a class of vegetables more remarkable for their great size than for any other good quality they may possess, but, on the other hand, it must be conceded they have had a most stimulating effect upon the exertions of all classes of gardeners, and have been the means of improving the methods of culture adopted. As a consequence of this friendly rivalry, large quantities of most superior garden produce are brought together, and the judges find it no easy matter to award the prizes.

Every season a marked improvement is to be observed in the way these vegetables are selected and set up, but there always appears to be a certain number of exhibitors who have but a

poor conception of what is most pleasing to the judges. Not a few of these have left better examples in their gardens than they have taken to the show, and they find this out when too late to remedy their mistake. For instance, if they imagine extra large Potatoes will be given the preference, they, as a rule, err greatly. By all means select fully grown tubers, or those rather larger than are thought the best for the table, but let them be all of as near one size and as even in form as possible, avoiding those with deep eyes, bruises, disease spots, or flaws of any kind. Vegetables, and especially Potatoes, are rarely shown now-a-days just as they are lifted, nor should they be. Cleaning certainly exposes their defects, but a well-selected dish of tubers is much improved in appearance by being carefully sponged clean and kept wrapped in paper to prevent greening till the morning of the show. What has just been advanced concerning Potatoes also applies to roots generally. Especially is it necessary that Carrots be all of one size and clear-skinned, but the colour also must be considered, the preference being given to those nearer a rich red than yellow in hue. Turnips must not be too large. I prefer to see them somewhat smaller than a cricket-ball, and if a good dish of Snowball, without any unsightly scars or coarse tap-roots can be shown, it will usually beat all the rest. The most perfect Turnips would have mouse-tail-like tap-roots, these being left untrimmed, all other fibres being carefully cut away and the skins sponged clean. It should also be remembered that if the judges have any difficulty in awarding prizes to Turnips the knife is applied to them, and those found old and woolly have but a poor chance to win a prize. Turnip-rooted Beet should be shown in exactly the same way as Turnips, and is the best for the early shows, but later on that with long roots should be shown as free from side roots, scars and dirt as possible. The knife test is also applied to Beet, but in this case the preference is given to that of the deepest red colour, and such should be shown accordingly. Parsnips ought not to be exhibited in August unless prizes are specially provided for them, and these should be shown at their full length, the tapering roots being preferred. At the early shows white Tripoli Onions are mostly shown, but late in August fine samples of the white Spanish type have most weight. The former should be lightly skinned, and the base of each being well rounded, this ought to be placed uppermost. The spring-sown, or those of the Spanish type, would be partially ripened, and ought therefore to only have loose skin removed and the tops shortened. As a rule, the latter are most imposing shown with their tops uppermost.

Pods of Peas cannot well be too long, always provided they are deep green in colour and closely packed with tender Peas. Judges not only open some of the pods, but also taste the contents, and it is useless, therefore, to stage any that are old and flavourless. The same remarks apply to Broad Beans, and runner and kidney Beans must also be long, straight, and tender, the latter quality being most essential, as unless they snap readily between the fingers and thumb they will take no prize. The pods of both Peas and Beans should be all of nearly one length and laid as straight as possible, no little ones being tucked underneath, as the judges have a weakness for turning over heaps of vegetables generally, and finding the imperfect examples the exhibitor imagines are so cleverly hid. The best Cauliflowers are those that have been examined almost daily for caterpillars, and have further had their leaves closely tied over them.

If shown in a clean, nicely-blanced state and before the "curds" are opened in the least, they are sure to please, medium-sized examples easily surpassing extra large, much greened, and, it may be, partially opened heads. The leaves ought not to be trimmed from the hearts till they are staged, and even then it is advisable to cover these and all other well-blanced vegetables with sheets of paper till the time has arrived for clearing the tents. Cabbages are not much valued in August, but if shown in a separate class the preference ought to be given to those only moderately large with conical and not very hard hearts. Those extra large and as close as well-grown pickling Cabbage are usually considered too old and tough by the judges. Nor are early Savoy Cabbages of any weight, these being more in season in November. Lettuces when cut are apt to become flabby in an hour or two, but if pulled up and the roots surrounded by damp Moss, they keep much better. Good examples of White Paris Cos and Perfect Gem Cabbage varieties are the best, the last-named keeping well.

Tomatoes are of great value in collections, and are often wanted for single dishes. The Perfection type takes best, and, failing this, a well-selected dish of Large Red answers nearly as well. In any case all the fruit should be of as near one size as possible, though the larger they are the better, always supposing they have no ugly centres and are of good form and colour. Half the Cucumbers seen at shows are too coarse and old. What are needed are neat, quickly-grown fruit which match each other perfectly and are of a deep green colour, the bloom also being intact. Long handles and swollen ends ought to be avoided, as samples of this description never win unless there are only very inferior samples shown. Vegetable Marrows must also be similarly carefully selected. Long White is the best for exhibition purposes, and the samples of this variety should not be each more than 10 inches long or more than 9 inches in circumference at the thickest part, the skins being clear and fresh looking. Globe Artichokes are valuable in a collection of vegetables if quite fresh and succulent, but had better be left out if old and dried up. The Green Globe is the best. Leeks are rarely shown as early as August, but plenty of good Celery is to be seen at southern shows. Unless the latter is good, that is to say, large, clean, and thoroughly well blanced, it is of little assistance in a collection of vegetables, and will rarely take a prize in single classes. Mushrooms if shown in hot weather must be quite young, the stalks being sound, any containing maggots, or that may be dried up, doing more harm than good, unless in an unlimited collection of vegetables.

A model collection of eight dishes of vegetables shown rather early in the season would consist of Potatoes, Peas, Cauliflowers, Tomatoes, Cucumbers, Carrots, Onions, and Globe Artichokes. Turnips, Celery, Vegetable Marrows, and Runner or Kidney Beans are of about equal value, and may therefore be substituted for either of the eight named, Potatoes excepted, in case they are not first-rate. No collection of vegetables, however limited in extent, would be complete without a dish of Potatoes. I hold it to be unwise to much mix up collections of vegetables, whether these be shown on boards or in baskets. Better by far keep each kind in a single heap, where it can be easily found and properly estimated by the judges, the only exception being in favour of Celery, an equal number of "sticks" of this being placed at each end of a collection. All should be well laid up on beds of

green Moss if procurable, and neatly and closely surrounded by well-matured Parsley, as there is nothing like creating a favourable impression at the outset. W. IGGULDEN.

TOMATOES OUT OF DOORS.

THE present season has so far been very favourable for this crop, as plenty of sunshine and a fairly high temperature at night have prevailed for several weeks past, with the result that where the plants were strong and put out early the crops are well advanced, and if we only get a fine autumn the crop will certainly be a very good one. This locality is favourably situated for the out-door culture of this much-prized vegetable, for the soil is naturally light and warm, and favours early maturation of the fruit. During the past few years many devices have been tried for hastening the growth of this crop, that has of late been one of the few that are really profitable to grow. Walls with a south aspect are the best when they exist in sufficient quantity, but very few growers have anything like the space they would like, and, consequently, broad fences and any low walls or fences with an east or west aspect are pressed into the service, as if not of sufficient height to be of any use for fruit trees, they do extremely well for Tomatoes. After these are filled up, the most sunny borders at command are stocked with Tomatoes. Vinery borders being favourably situated as regards sunlight, but not liking any crop to rob the roots of the Vines, we adopt the following plan, viz., strong plants are grown on under glass until May, when they are just coming into flower, and each about 1½ feet high. Boxes filled with good soil are then set along the front of the vineries, so that they get the reflected heat and the plants turned out into them as early as possible. If Tomatoes are hardened off gradually, they are as easily managed as bedding plants. As growth progresses, the plants are trained up thinly to stakes or wires stretched along from stakes or posts, and if carefully tended they ripen fine crops. Then on sharp sloping banks, such as the sides of old gravel pits or by railway embankments, I have seen fine crops where the plants have been put out early and thinned with regularity.

OPEN FIELD CULTIVATION.—After all the sunny spots have been filled up, an excellent plan is to get straw-thatched hurdles and set them up running east and west and with a full south aspect. As the plants grow they are tied to the bars of the hurdles, and on fresh soil it is surprising how well they grow and the crops they mature. This is a decided gain to planting quite in the open and training to stakes like Raspberries, but even by this means, if we get good seasons, plenty of fruit may be gathered. The main points needing attention are early sowing and potting off into single pots, so as to get sturdy plants in bloom by the middle of May. They should be in frames or pits, when the lights can be drawn off all day, and they will not then feel the check of planting out. It is not advisable to put much manure into the soil at planting time, but in July, when the fruit is set, mulching and watering to swell the fruit are absolutely necessary, and whether the plant be grown with one, two, or three shoots, care must be taken to keep all superfluous shoots cut out directly they appear, for if the plants get choked with useless growth there will be no ripe fruit even in the most favoured situations out of doors. J. GROOM.

Grosport.

SHORT NOTES.—KITCHEN.

Chirk Castle Turnip.—Of all the Turnips recommended by Mr. Iggulden (p. 38) for winter use I prefer the above. It is extremely hardy, will attain a good size under the most unfavourable conditions, and the quality under all circumstances is excellent.—J. MITCH.

Cutting Lettuces.—Whilst I thank Mr. Ward for his reference to cutting or seedling Lettuces, I would wish further to point out that the proposal to have a class for them at the forthcoming vegetable conference is based chiefly upon admiration ex-

pressed by some connoisseurs in salads for the French method of preparing salads, in which cutting or seedling Lettuces form an important element. We are not great salad-eaters in England, relatively, perhaps, because our climate is cool; perhaps, also, because the art and mystery of preparing salads are too indifferently understood in this country. As a rule, our mixed salads are crude and coarse, often containing materials which need as much chewing as green Cabbage leaves ere they can be masticated. Good, tender, mixed salads are very delicious, and with cold meats may be enjoyed at any time of the year. But all the same, it is obvious that cutting Lettuces are more easily provided in winter where there is ample glass area with heat than are full-grown Lettuces; indeed, with a stock of boxes and seed, sowing every week or so, a good supply may be kept up all the winter through, as the seed would germinate quickly if stood in an early vinery, or in any house where heat was kept up and there was plenty of floor room. An exhibition of seedling Lettuces for cutting, in pans at Chiswick next September, may be helpful in drawing attention to one excellent method of securing tender salad material through the winter months.—A. D.

KITCHEN GARDEN NOTES.

MUSHROOMS FROM OLD HOTBEDS.

In all large gardens or those well furnished with forcing houses, Cucumbers and Melons are generally grown in heated structures, but there are yet numerous places where the much older plan of growing them in frames on hotbeds is still practised. Under good culture surprisingly heavy crops of fruit can be had with the aid of these primitive contrivances, and in addition there is no reason why a very profitable and most acceptable supply of Mushrooms should not be had in succession to either Cucumbers or Melons. After Cucumber plants have become badly infested with red spider they are of but little further service; in fact, it does not pay to take any further trouble with them, but unless the heating materials are very rotten and saturated with moisture they would yet contain a considerable amount of warmth, or sufficient to grow Mushrooms. It is useless, however, to spawn the surface of a bed while the Cucumbers are still in full bearing, as the amount of water that must of necessity be given them is apt to prove fatal to the Mushroom spawn. With Melons the case is somewhat different, as with these it is not always necessary to wait till the plants are cleared off. Melon roots are almost certain to run down into the manure or decaying material of some kind underneath, and to continue watering freely after the fruits are commencing to ripen would, as a rule, do very much more harm than good. In order, therefore, to get the full benefit of the heat in the bed, the spawn should be inserted soon after the crop of Melons has commenced to ripen. Nor is it necessary to withhold all further supplies of water after the bed is spawned, as if only sufficient is given to keep the Melon foliage from being burnt or dying off prematurely, no harm will accrue to the spawn. One bushel of fresh spawn would go a long way towards stocking a three-light frame with Mushrooms. The "bricks" should be broken up into rather large pieces—or say not less than 2 inches square—these being less liable to be injured by too much moisture than much smaller pieces. I have found that the mycelium will run freely in the surface soil, but better Mushrooms are obtained when the roots are principally located in decaying manure. Supposing there are not more than 3 inches of surface soil in the frame, the spawn should be inserted in the manure just below it, but where a greater depth is found, bury the lumps in this 2 inches below the surface, in each case about 6 inches apart each way, taking care to bed it in the manure or loam firmly, the soil being returned to its original position. While the Cucumber or Melon foliage lasts there will be no necessity to shade the bed, but after the plants have been cut out the surface of the bed ought to be covered with a good thickness of soft strawy

litter. In about a month from the date of spawning the bed should be examined, and if the surface is dry give enough tepid water to moisten it without saturating the manure under it. If all has gone on well, abundance of good Mushrooms should be had from the middle of September to November. I ought perhaps to add that the lights should be kept on principally to prevent the rains from saturating the beds, this being almost certain to spoil the prospect of a good crop of Mushrooms.

ANOTHER METHOD OF SPAWNING HOTBEDS.

Early in August is the best time to spawn partially exhausted hotbeds, but in many instances it is to be hoped the contents of the frame will remain in a healthy productive state till the middle of September at least. As before pointed out, it is unwise to interfere with a frame of Cucumbers or Melons when these are in full growth, but the owner may yet utilise the frame for Mushroom culture. In this case, however, it is the sides of the beds that must be spawned, much on the same lines as ridge-shaped beds are treated. The same plan is also applicable to those beds spawned on the surface, and with very little trouble a long succession of Mushrooms can thus be obtained. Neither the body of the hotbed nor the linings need necessarily consist wholly of horse stable manure, that obtained from a mixed farmyard, and also a mixture of leaves and manure answering equally as well (sometimes better), the principal essential being a moderately forward state of decay accompanied by gentle heat. It is useless, however, to spawn a bed standing in water, as this is sure to be cold and saturated to a considerable height. Supposing it is located on a well-drained position, the first row of spawn may be inserted 12 inches from the ground, about three rows being sufficient for most beds. The spawn must be firmly bedded in just below the surface, and a beating with a fork will further consolidate the mass. These sloping sides need to be cased over with 2 inches of good fresh loamy soil, and this should be done directly after spawning. It is also advisable to cover the soil with a good thickness or not less than 6 inches of strawy litter disposed so as to ward off heavy rains, in addition to keeping the soil from drying up and cracking badly, and as a rule very little else need be done. Mushrooms obtained in this way are always of the best quality, and are usually produced in extra large clusters.

MUSHROOMS IN FORCING HOUSES.

Gardeners in some instances, and employers in others, are frequently too stingy with their Mushroom spawn. Mushrooms can really be easily grown in a variety of positions, but it only occurs to some to grow them elsewhere than in the orthodox houses and beds. One of the most serviceable, because opportune, supplies of Mushrooms was obtained last spring from a slight hotbed formed of leaves and manure in a vinery set apart for forwarding Vines in pots. When this hotbed had about half done its work and was well decayed, the surface was spawned and soiled, and in due course abundance of moderately good Mushrooms appeared. This summer all the Cucumbers and Melons in low forcing houses are being grown on slight hotbeds, and every one of these are, or will, be spawned. Such beds never really become too cold for the spawn to run, and when the Cucumbers and Melons are no longer worth retaining, the spawning is carried out. In some instances pot plants, including Tomatoes, will be set direct on the spawned beds, and in others they will be placed on a movable staging. These houses will be principally occupied by Tomatoes, Bouvardias, double Primulas, and double zonal Pelargoniums, none of which require either a high temperature or much water. In some places no doubt there will be too much moisture to suit the Mushrooms, but, as a rule, the clusters will push through the soil in all directions, and, as on former occasions, upheave any pot plants or ordinary weight that may be in the way of free development.

VARIOUS.

It is not often we have a good soaking rain just when wanted, but this summer the weather has

been singularly propitious. Asparagus is growing strongly, and where planted thinly the strongest growths must be roughly supported by stakes, or otherwise the first storm of wind and rain will break them down. Crowded clumps ought to be freely thinned out. We find Asparagus of good service for mixing with cut flowers, and thin out the clumps whenever a fresh supply is needed. Seedlings have also come up well, and unless freely thinned out they will make but poor progress this season. A summer mulching of good manure will not be wasted on isolated plants among fruit trees, or in other positions where they get but little manure, and where the rows are wide apart these also may be similarly treated with advantage. On light soils a sprinkling of common or manure salt will benefit well-established beds. The drought has in many instances much weakened the Globe Artichokes, and especially those long established in the same position. Soaking rains have re-invigorated the younger plants, and the supply will hold out much longer. All flowering stems should be cut down as soon as the heads are either used or are become too old to be of any service. Jerusalem Artichokes are not unfrequently grown on the same ground several seasons in succession, and in this case, unless freely thinned out, yield but poor crops. It is not yet too late to thin out the stems. The plants ought to be not less than 12 inches apart in rows 3 feet asunder. The sooner all the Broccoli, Borecole, Savoys, and other somewhat similar winter crops are got out the better. They spoil quickly in the seed beds, and in any case ought to have a rather long season's growth. A close look-out must be kept for caterpillars, as these quickly spoil the appearance of Cauliflower hearts. Tie the leaves over those well advanced, and plenty of water and liquid manure should be given to any that it is desirous to grow to exhibition size. In southern districts the breadths of early Cauliflowers ought to be cleared off in time for Celery to be planted in close succession, and unless the ground is very poor or hard there is no necessity to either manure or dig preparatory to putting out the plants. Young Carrots are always appreciated; therefore sow more seed of some of the Horn varieties on warm borders, according as Lettuces, Beans, or other early crops are cleared off. The Turnip-rooted Beet has come on rapidly, and should be fit for use in most moderately early gardens by the middle of July. This variety when left long on the ground is apt to attain a great size, and is almost certain to do so this season. For this reason it ought to be used early. Plant Coleworts 12 inches apart each way wherever room can be found for them. They are certain to be useful during the early part of the winter. If the Cabbage for spring use has not been sown or the first sowing has failed in any way, sow more seed at once, and in handlights, boxes, or frames if the seedlings cannot be preserved in the open. Garlic, Shallots, and underground Onions that have ripened their foliage ought at once to be pulled up and spread on mats in a position to harvest properly prior to being stored. Strong Parsley plants may be dibbled out in succession to these. Peas growing strongly can be kept from breaking down with the aid of a few spreading stakes, supported if need be by other stout stakes, and the later rows generally will in most instances be benefited by mulchings of manure and copious waterings, liquid manure being of great service. Unstaked runner Beans must be kept closely stopped, and those with comparatively short stakes should also be stopped when the tops of the stakes are reached. The more closely all are kept gathered from, the more productive they remain. Weeds are springing up thickly everywhere, but a few hours' use of the Dutch hoe will clean a large breadth of ground, especially if done while they are yet small.

W. I.

Some new Peas.—I was in the winter favoured with seed in small quantities for trial of some of Mr. Eckford's new Peas. Mr. Eckford has made a great reputation in relation to Peas, equalling that of Mr. Laxton, and no doubt many of his productions are fine varieties. But the raiser of new Peas has to encounter the dis-

advantage that the field is already wonderfully well occupied, and even if his novelties have higher excellence than have some old standard sorts, it is very difficult work to displace them. We have seen such second early kinds as Telegraph, Telephone, and the Duke of Albany become remarkably popular and widely grown. They are robust, free croppers, producing very fine pods, but none have that excellence of flavour which marks Ne Plus Ultra and other superior marrows. But then, these particular Peas are hardy, and they do wonderfully well under ordinary field culture, so well in fact that some, and Telephone especially, are being widely grown as market Peas. The chief fault of these Peas for field work is that the haulm is rather too long, but field culture does not encourage rank growth. Now of Mr. Eckford's new Peas, four in number, two are dwarf and two tall. The dwarf kinds are Heroine and Shropshire Hero, each being about 2½ feet in height. Heroine is a fair cropper, has long scimitar-curved pods, each containing about ten peas of fair flavour. Shropshire Hero is like so many new Peas, a mixed variety, having both straight and curved pods. Probably the straight-podded form is the one aimed at. These have eight peas in each. Comparing these two varieties with the older Triumph, I find that this latter has the advantage as a cropper. The pods are slightly curved, fill well, and contain ten peas each, but not so large as are those in Eckford's Peas. Very large Peas I think are a mistake; indeed if raisers would aim to secure larger and thinner pods rather than such thick pods, they would be wise. The two tall Peas, Fame and Essential, are of the long-jointed character peculiar to nearly all tall varieties. Because of the long intervals between leaf joints tall Peas exhibit much waste in growth, and are not so profitable as they appear to be. For that reason a fine prolific Pea of the Triumph type is, on the whole, the most profitable, especially for field or open-ground culture. Fame is 6 feet in height and a very robust grower. The pods, which are freely produced, are snub ended, and resemble those of Ne Plus Ultra, and each has about seven large Peas in it. Essential is 5 feet in height, and is the earliest of the batch; indeed it seems to be a very good second early variety. The pods are thick and very obtuse, each containing seven Peas. Last year I had growing a 3-foot Pea named Emperor William. I found that to be much mixed, and therefore selected one plant only of the best type, a large straight pod, not unlike Veitch's Perfection, but finer. That shows good character again this year, and looks like a first-rate late Pea. A variety named Gladiator, having round blue seed, should make a capital second early market Pea, and displace the popular, but poor Harrison's Glory. So far as my experience of dwarf Peas has gone, for field or market purposes, I have seen none yet which excels Triumph, a fine hardy Marrow, and one which will doubtless be in great request.

A. D.

CHRYSANTHEMUMS.

E. MOLYNEUX.

FEEDING THE PLANTS.

THAT Chrysanthemums cannot be grown without the aid of feeding no one, I think, will deny, if the best results are to be obtained. The Chrysanthemum is such a gross feeder that some stimulant other than can be contained in the soil during the time the plants are growing in their flowering pots, a period of nearly seven months, is necessary. Were it not that this plant requires so much water during its growth, so much support would not be required, but the continual waterings Chrysanthemums require rob the soil, so to speak. The term "feeding" means the application of stimulants at a time when the plants are supposed to have exhausted the greater part of the manurial matter in the soil. It is almost impossible to obtain well developed plants and flowers without the aid of stimulants. Much harm may be done to

the plants by commencing to feed too soon, and equally as much valuable time may be lost by deferring the feeding till too late. It is knowing when to commence to assist the plants that is the important point. At present beginners in the growth of Chrysanthemums understand but imperfectly this phase of the culture. It is in the hope of assisting this rising body of cultivators (beginners) that I venture to make these remarks, so that the necessary preparations may be made to obtain what is required.

There is a difference of opinion as to the proper time to commence the use of stimulants. Some growers say that feeding should not be commenced until the plants have set their buds; this method I consider to be wrong for two reasons. The first is, that as the Chrysanthemum is such a gross feeder and makes roots so freely, all the nourishing matter in the soil will have been absorbed by the roots long before the buds will have been formed. Some check therefore to the plants must necessarily ensue if manure in some form or other is not given. The plants ought to be fed long before the time arrives for the buds to form, so that they may be strong at a critical period. If a check takes place to the free growth of the plants through a loss of sustaining matter in the soil, how can they be expected to form strong and healthy flower-buds? Weakly grown plants never produce flower-buds of the same quality as stronger plants of the same variety, and if the buds are not produced in proportion to the necessary qualities of each variety, how can the flowers be properly developed? When the plants are growing well, do not let them deteriorate through lack of attention, but keep them advancing. The second reason why feeding should not be deferred until the buds are set is, that as some sorts do not set their buds until the middle of September, and some even later than that, the time from then until they are in bloom, say the middle of November, is much too short to allow them a chance of deriving much benefit from the application of artificial support. When the pots are sufficiently filled with roots is the proper period to commence feeding the plants. The strongest growing kinds, as, for instance, Prince Alfred and the Queen family amongst the incurved, Fair Maid of Guernsey, Belle Paule, and Avalanche of the Japanese section quickly make roots; while the more delicate growing varieties, such as Margaret Marrouch, Jeanne Délaux, and Criterion (Japanese forms), and Princess Beatrice and Barbara (incurved varieties) are not so free rooting among the incurved; these latter will not require stimulants nearly so soon. Positive harm is rendered to the plants by supplying the roots with manure when they are not in a fit state to assimilate it, as thus the soil is rendered sour and the roots make no progress. It is much better to turn one or two plants out of their pots so that the progress of the roots may be more correctly examined than to hazard a guess by the appearance of the plants. The time at which the plants received their last shift into the flowering pots, the size of the latter and the kind of soil used all tend to make a difference in the time required to fill the pots with roots. Some soils are more favourable to root-production than others. It will also depend upon how the potting was done. Roots come to the sides of the pot more quickly in loose soil than in that which is made firm. Plants cultivated for specimens will first require attention, owing to their being grown on early in the season.

Where plants are cultivated in the bush style and intended for conservatory decoration, where good foliage is a first consideration they will early need stimulants, especially when the

plants are grown in comparatively small pots, as are Pompons, Anemone Pompons, and single-flowered varieties. The character of the season as well as the nature of the soil must be considered as to the amount of stimulants the plants shall receive. In a wet season stimulants should be given on a smaller scale than in a dry one, as wet summers are inimical to the maturation of growth. An excess of stimulants would aggravate this evil, and the plants fail to produce flowers of the finest quality.

PLANTS IN SMALL POTS.

CHRYSANTHEMUM blooms each from 4 inches to 5 inches in diameter, borne upon plants not more than 1 foot high and requiring pots only 4 inches wide at the most, are desirable subjects to have where the filling of small vases with living plants and flowers is a necessity during the winter months. Such plants can easily be obtained if a few simple details of culture are carried out. Early in August is the time to commence the cultivation of these miniature plants. Both Japanese, incurved, and Anemone Japanese varieties are suitable for this form of growth. The preference should be given to those varieties which are strong in growth, avoiding those that have slender peduncles, as they need so much support to show off their blooms to advantage. Boule d'Or, Baronne de Prailly, Belle Paule, Avalanche, or Edwin Molyneux are types of varieties well suited to this form of culture. It is only a few in the reflexed section which are suited to this method of growth, as, for instance, Cullingfordi, King of Crimsons, Dr. Sharpe. One advantage of cultivating plants in the manner named is that any points of growth which may through accident be broken off the plants which are intended for the supply of large blooms can be utilised. From now onwards some points are sure to be broken off the plants. The ligatures which support the plants will have become too tight to allow of the shoot growing. The growth is thus "buckled," so to speak, and then snaps off about 4 inches long generally, or heavy rains will sometimes damage the succulent growths, or birds will alight on the extreme points where they extend beyond the top of the stake, or are not kept tied to the supports. If more shoots were allowed to each plant when growth first was made from the natural break in May than it is intended shall develop blooms, such surplus shoots will furnish capital material for the subject in hand.

From the first to the last week in August is the best time to strike the cuttings. If the cuttings are inserted sooner than the date named, the plants after being struck are liable to get too tall, and if taken later than the last date the flowers are liable to be much smaller. Varieties with large-sized blooms may be rather taller than smaller-flowered sorts, as the drooping florets show to greater advantage on a correspondingly taller plant. The cuttings should be firmly dibbled into pots 2½ inches in diameter, and well watered to settle the soil. Plunge the pots in a gentle hotbed, shading the cuttings carefully from the sun. Syringe the foliage every afternoon on fine days, and by keeping the frame nearly close roots will be formed in about a month, when air should be admitted gradually and afterwards freely when the plants will bear exposure without flagging. When the plants are well supplied with roots they should be shifted into pots 4 inches in diameter, using a fairly rich compost and potting the plants very firmly. When the roots have taken to the new soil the plants should have abundance of air, so that the growth may be stocky and the foliage clean. No place suits them better than a shelf close to the glass in a cool house. As soon as the pots are filled with roots, stimulants should be given to the plants freely, as they require plenty of support when growing in such small pots. Mrs. G. Rundle and its two sports, Mrs. Dixon and George Glenny are varieties well suited to this method of growth, and in each 4-inch pot place four cuttings, or six cuttings in a 5-inch pot. The soil in this case should be made richer

than when the cuttings are placed singly, because in the case of the Rundle family no second potting will be needed. E. M.

ROSE GARDEN.

T. W. GIRDLESTONE.

ROSE JOHN HOPPER.

JOHN HOPPER is one of those Roses that is always giving one a pleasurable surprise. Of course, everyone knows that it is a good Rose, but at times, as during this season, it comes so good as to seem to present an indisputable claim to be considered one of the very best. There has been a tendency among exhibitors to discard John Hopper because the flowers will not stand a long journey, but this year at several shows there have been seen flowers so faultless in form and colour, with a high centre of perfectly folded petals, each gracefully recurving at the margin and displaying its full rosy colour against its own silvery reverse, as to

not long succeed unless it is planted deep enough to be able to send out roots of its own from the collar.

Perhaps it is hardly to be wondered at that, after the magnificent set of Roses that they sent us in 1861, the French raisers should have taken things somewhat easily the following season; but, nevertheless, the fact is worth noting, that of all the Roses sent out in the year 1862, the only two that are still in general cultivation were both distributed by English raisers, were both, moreover, conspicuous for hardiness, vigour, and freedom, and are still, after so many years, both worthy of extended cultivation in all Rose gardens, especially the variety of which so fine a plant is here illustrated, namely, Mr. Ward's John Hopper.

PEGGING DOWN ROSES.

A GOOD deal has recently been heard and seen in various quarters in relation to the pegging down of Roses for artistic display or ornamental effect. All

down or layering did both, for while it was one of the easiest methods ever adopted for multiplying the number of new Rose plants, it also tended powerfully to recuperate their vigour and extend their term of life. The mere act of bending down the stronger shoots, few or many, every year for layers forced the plants to break more strongly near their root-stocks, and the annual growth of these vigorous shoots annually not only greatly strengthened, but more widely extended the area of the roots.

In fact, Roses layered for purposes of propagation had two if not three sources of strength instead of one. The one or normal source, which they possessed and retained in common with other Roses, was the natural growth and flowering of the normal portion of the plant. The second source of vigour and force lay in the process of bending down the stronger shoots for layers, as already described. It has been said that Nature abhors a vacuum, a theory or supposition now condemned by the votaries of physical science. But, be that as it may, Nature as seen in actual operation in plant life and development abhors force, so far as to resist it with all her energy. Hence, tie or bend down a branch, and the plant puts out its maximum force, at the point where the tension is greatest, to burst our bonds, and let either the old or new growth go free. In this curious faculty of plant life and growth, the pegger down of Roses finds augmented vigour in his Roses thus treated.

There is also a conservation as well as an augmentation of force in layering, for no sooner is the layered branch rooted than it is partially, or wholly, cut off from the general supply of food, and fed from a table of its own, namely, its own roots. All the food thus diverted into or husbanded in the parent tree is immediately, or very soon, available for all its members or branches. Thus the process of layering branches and transforming these into own-root Roses divert more food into those left, and thus, through the greater concentration of force and food, augment their vigour and prolong their life.

Two of the finest masses of layered Roses I have ever seen were two match beds, as they were called, of the two violently contrasting Roses, General Jacqueminot and Souvenir de la Malmaison. Possibly there had been about fifty plants originally in each bed. At the time I saw them it would be hazardous to conjecture how many plants were in each. The ground seemed wholly clothed with shoots, leafage, and bloom—huge raised circles of verdure and beauty crowned with an abundant promise of buds, as well as with a profuse performance of blossoms. Doubtless the effect was considerably enriched and heightened by the striking contrast in character and colour between these two Roses. But the pegging down and the liberal culture had, I was assured, preserved the vigour and repeated the beauty of those two Rose groups for many years. D. T. F.

THE RAINS AND THE ROSES.

At last, and just in the nick of time for fostering a profuse autumnal blossoming, the rains have come with such force and persistency as to reach and satisfy the roots. They were hardly welcome to those who had Rose fixtures in the second week of July, now generally welcomed as the Rose month of the year, somewhat to the disparagement of form, fragrance, and beauty. The heavy downpour made short work with promising blooms, carefully nursed or kept back for filling niches, all too common this season, in prospective prize dozens, twenty-fours, or forty-eights. The spotting, to say nothing of the shedding power of rain on Rose petals, was per-



Rose John Hopper on a fence.

captivate even the hypercritical. Nevertheless, it is not on account of its value to the exhibitor, considerable as this not infrequently is, that John Hopper has continued a prominent favourite in the Rose garden for more than a quarter of a century, but rather on account of its invaluable qualities of vigour, freedom, and conspicuous hardiness, all of which are well suggested in the accompanying engraving of a plant grown on a fence. The opening of the flowers is rarely affected by weather of any sort, except that in a very hot, dry season the blooms expand somewhat too rapidly; but, on the other hand, autumn blooms are often developed in the cooler weather late in the year in very great beauty of colour. Another good point about this Rose, which, no doubt, has also materially contributed to its long-continued popularity and wide distribution, is the readiness with which cuttings of it strike root. It roots almost more easily than any other Hybrid Perpetual, and grows far better on its own roots than when budded on Manetti, a stock on which (like most of the smooth-wooded Roses) it will

this is to be commended on grounds of taste as well as good culture and high cultivation. But in recent descriptions of pegging, one of the most important and primary purposes of the practice has been generally overlooked. In the olden times of Rose culture Roses were pegged down less to keep them strong or to make them more beautiful than to increase their numbers.

Each branch, whether manipulated by art into a layer by the knife or not, that touched the earth or was forcibly buried under ground quickly grew into an own-root Rose bush. By this sure and simple method of propagation Roses were indefinitely multiplied and constantly changing their places. The latter possibly exerted as potent a power over the strength and longevity of Roses as the layering itself had over their rapid propagation, for each newly-rooted layer was not only a new Rose, but a new Rose in a fresh place. Now if, as is generally believed, much of the modern mortality among Roses arises from exhaustion of the soil around the old root-stock, it follows that a system of propagation that necessarily establishes each plant in a semi-maiden soil must needs extend the longevity of Roses either in the individual or the mass.

It seems probable that propagation by pegging

haps never more powerfully or provokingly felt than during the last week.

By the way, the ways of the rains among the Roses is one of those subjects that might have formed an interesting theme at the late conference. It can hardly be that the mere mechanical force of the rain, very considerable as that is, can account for more than a tithe of the injury inflicted on Rose blooms through heavy rains. The roots, famished for water, absorb it with such energy and volume as to waterlog the plants from base to summit of the highest Rose bud and bloom. One of the first results of this sudden flooding of all the tissues of the Rose plant is seen in the washing out of the colour and of the staying or persistent qualities of the Rose blooms. Durability, finish of bloom, are the first sacrifices exacted from Roses by heavy rains or root floodings of water. Nevertheless, the latter, especially in seasons like this, do infinitely more good than harm, for fortunately the rains, coming at the latter end rather than in the heyday of the Rose season, found comparatively few poor blooms to wreck or mar, and the plants in many gardens were panting for rain to develop their latest maiden blooms, recoup themselves from an exhausting spell of drought, make or keep them clean, and prepare them for an abundant autumnal blooming.

In not a few places maiden buds wintered well; in others, the past winter hit them hard, and punished them far more severely than winters of similar character have been wont to. In fact, the eccentricities of Rose culture of late have seldom been more apparent than among the maiden buds of this season. Generally late, they have been watched with abnormal anxiety, and have proved more than usually welcome, owing to the evanescent character of the Rose season, now entering into its summer holidays to prepare it for its autumnal campaign. Seldom have the Roses needed a temporary respite from blooming more, or promise to repay it better. The long spell of drought, though it has failed to call forth any unusual manifestation either of fungoid or insect pests, has, nevertheless, tried the strength of many Roses severely. The rains, especially if assisted with top-dressings of solid or liquid manure, will not only enable the plants to restore any loss of vigour, but to augment and increase it. In fact, almost on the heels of the rain one can note the sure and certain signs of renewed strength—breaks prospective, and, in fact, were never more numerous, promising, and vigorous. Especially is this the case among Teas and own-root perpetuals and other Roses.

As to the cleansing effects of rains on Rose wood and foliage, all rosarians are agreed. So far Roses have mostly been clean. The worst insect we have met is the small caterpillar, that skeletonises and so destroys the leaves. Maggots have also appeared in about their usual force, but neither aphides, rust, thrips, nor red spider have been prevalent. But prevention is better than cure, and had the drought continued, who shall say what hungry hosts of ravenous insects or devastating fungoid pests might not have defoliated our Roses in the autumn-tide? We may hope that such dangers in close proximity have now been swept away by the floods.

Finally, thanks very much to the rain, autumnal Rose prospects were seldom or never brighter than they are now. It is not so much that they loom in the far distance, the first fruits of our autumnal harvest of beauty are already upon us in plentiful pickings from our early Teas, and promise to fill up the usual interregnum that so painfully, and at times so languidly,

interposes between our summer and autumnal harvest of Roses. This year there will hardly be any such interregnum, for already some of the perpetuals are colouring for second bloom, and will certainly catch up the retreating second display of the early Teas; in fact, according to present Rose prospects, our second harvest of beauty may not only prove the richest, but by far the most plentiful and most durable. Should this be so, it will furnish another argument to those I have so often used for autumnal Rose shows in August and September. But whatever the fate of such suggestions, the most cheering Rose fact of the moment is the sure and certain prospect of a long and plentiful gathering of Roses from bed and border from July to November.

The rain has also plumped up eyes for budding and caused the bark of the stock to run with the merest touch. It is hoped, therefore, that rosarians will make hay while the sun shines—that is when the Roses and atmospheric conditions are so favourable for the rapid insertion and sure and certain taking of buds.

D. T. F.

ROSE GROUPING AT THE CONFERENCE.

THE most striking thing in this way was also the simplest—a box of twenty-four Roses of alternate blooms of Niphetos and Mme. de Watteville; the first without spot as white as ivory, and the second with such profusion and perfection of colouring as seem seldom reached unless in the Oxford Roses. Had I been longer at the conference I should have endeavoured to find out whether this intensity of colour arises from the site, the soil, the culture, or, to be more precise, the Brier seedling, or whether the difference between seedlings and cuttings for stocks could make a difference in the colouring. Be that as it may, these two Roses harmonised admirably in form, while the rich suffusion or borderings of salmon white, bright or soft rose and pink in the Watteville Roses were heightened and intensified by the snow-white blooms of Niphetos. Two seedlings of Mr. W. Paul made another colour duet of great softness and beauty; these were the new Tea Rose Sappho and the new Perpetual Duchess of Albany, the deeper-coloured sport from La France. Sappho is a flower of great promise and substance, unfolding from a soft fawn into a full deep yellow, with a touch of buff. The flowers are large as well as striking. Placed in contrast to the Duchess of Albany, a veritable La France in everything, including fragrance. In assuming a deeper pink colour it has lost nothing of the many merits of its parent; hence the rich and pleasing colour effect of these two new Roses. I wish to add, however, that, beautiful as the Duchess of Albany is, I look upon it in no sense as a rival, far less, as some have hinted, as at all likely to supersede La France. There is room enough for any number of the La France strain covering all the range of colour from fiery crimson to pearly white, and through all shades of rose, pink, buff, yellow, into a veritable golden La France, to grow beside or supersede Maréchal Niel.

The plan of bunching the Teas into six or more blooms and disposing the bunches with a view to colour contrasts and harmonies, also produced some strikingly beautiful combinations. The bunches filled the eye and gratified the sense of seeing far more satisfactorily than mere single flowers. Thus, from their mere bulk, they afforded more pleasure, and being raised into half pyramids, they broke up the monotonous flatness so depressing at most flower shows.

Garden and climbing Roses were also shown in bunches of various sizes, and more or less loosely so as to reveal their true character; and as these were scattered all over the tents in the five or more great collections, which included all sorts and conditions of Roses—number of exhibits unlimited—much of the usual flatness and monotony so difficult to eliminate from ordinary Rose shows was happily got rid of.

The rich collection of Rose plants—rare and interesting species from Kew—added a most important practical and botanical feature to the conference.

Among such numerous and diversified exhibits—the two Pauls alone showing over 500—there were, of course, many striking or accidental coincidences of colour. I shall, however, only name those of one exhibitor, Mr. Turner, of Slough. He exhibited his Hybrid Perpetuals in threes, and throughout his large collection, shown in boxes of twenty-fours—that is, eight distinct Roses of three blooms each—he used soft rose, flesh, pink, or white to set off four dark varieties. This system of grouping was repeated throughout his large collection, causing Her Majesty, which he exhibited in fine form, and several other soft-coloured Roses, to be repeated several times, as light foils to the deeper-coloured Roses. Here are a few samples of this useful mode of intensifying colours by compound interest—first through numbers, and then through contrast.

The first box of twenty-four was thus furnished: Her Majesty, Queen of Queens, Baroness Rothschild, and Lady Mary Fitzwilliam, all in threes, parted and contrasted by Marie Baumann, Prince Arthur, Countess of Rosebery, and Etienne Levet. Second box, light sorts: Queen of Queens, Comtesse de Serenye, Pride of Waltham, and Merveille de Lyon; dark sorts: Star of Waltham, Countess of Rosebery, Countess of Oxford, and Xavier Olibo. Third box, light sorts: Captain Christy, Merveille de Lyon, Her Majesty, and Edouard Morren, the latter too dark, approaching too close to some of the following four for this mode of using the two or more colours to throw up and intensify each other; dark sorts: Charles Lefebvre, Prince Arthur, A. K. Williams, and Marie Baumann. Fourth box, light sorts: Her Majesty, Pride of Waltham, Queen of Queens, Marquise de Castellane; dark sorts: Mme. Victor Verdier, Avocat Du Vivier, Charles Darwin, and Marie Baumann. One of the most pleasing combinations of this sort was also found among Mr. W. Paul's seedlings, the Pride and the Star of Waltham. They are both flowers of full size and good form, the soft pink of the Pride of Waltham pleasingly soothing down the deep intense crimson of the Star.

It is to be hoped that these notes of actual effects seen and felt at the Chiswick Rose Conference will prove useful to Rose planters and decorators, as few of these will deny that our Rose pleasures may be greatly enhanced alike in the garden and home by our skilful mating and matching its colours.

D. T. F.

THE PROPAGATION OF ROSES BY CUTTINGS IN JULY.

THE time is an important factor in the success. Insert growing cuttings too early, they fail for lack of substance; put them in too late, they have become too inert for this time and mode of rooting freely; for there is a tide in the affairs of Rose life and growth which, taken at the flood, leads on to the good fortune of sure and certain rooting. Before it or behind it failure is likely to attend our efforts, and declare that they shall not succeed.

The possibility, almost certainty, of roots lies in the nutshell of semi-maturity, an easy word to write or read, but a state or condition which none but experienced rosarians can thoroughly comprehend. The multiplication of words may rather conceal than reveal much needed light on this subject; therefore it may suffice to add that a semi-mature Rose shoot is endowed with the power, and also, under fostering conditions, with the will of forcing roots on its own account. It has the stuff of roots in it, and it is the business of the cultivator to try and obtain roots, in fact. Two or three reasonable and necessary conditions are needful to this end. Two of the most important are staying properties and a reserve of force in the cutting or its adjuncts. These are stored up in the cutting itself or in the

heel, which latter adds at least fifty, perhaps cent. per cent. to its chances of rooting. Semi-maturity may be defined as enough to the daily, hourly wants of the cuttings, with a margin of food and force to spare for the production of roots. Lest, however, the supply of organisable matter should be exhausted before the roots are numerous and strong enough to feed themselves and the cuttings also, it is found safest and best to lay up extra stores of food and force in the heels of the cuttings. These heels are pieces of older and riper wood slipped off with the cutting and forming its base. The best heel is shield-shaped, very like the piece of wood scooped out of a Rose branch in the art of budding, only deeper and larger if desired. This with its large proportion of bark, raw edges, and modicum of wood, either trimmed or untrimmed, becomes the base of the cutting.

Rose cuttings thus formed naturally as a rule consist of two parts, the cutting from 3 inches to 6 inches long, and the heel of any convenient size, from half an inch to an inch or so in length. The substance or thickness or depth of the heel is of less moment than is mostly supposed, as its most valuable properties lie on or immediately under the surface or substance of the bark, that is in the cambium or young wood.

Rose cuttings so selected and formed are not only sources of food and force, but centres of life, and the simple problem they present for solution to cultivators, amateur or professional, is the conservation of force and the further development and strengthening of life. For example, they are now cuttings; we wish to make them plants. It is also of the utmost importance to bridge over the interregnum between these two estates in as short a time as possible, for Rose cuttings especially at this season that do not root rapidly are in imminent danger of dying outright. Hence the importance of economising time as well as of utilising growing force. To this end certain simple means should be employed to conserve force and quicken growth. Few or no better are known to cultivators than partial shade, a close moist atmosphere, and bottom heat. The first two are conservative forces only or chiefly; they husband all the resources of the cutting during its transition state, and give it time to turn this force into new channels, viz., the production of roots, and these processes are hastened by the addition of bottom heat. The latter, however, must be moderate or it will defeat its purpose; as a rule, from 5° to 10° in excess of the top temperature is ample. Under such favourable conditions the entire growing force of the cutting, its stem, its leaves, its heel are not merely conserved, but kept at work and stimulated to work at higher speed; and there being no other outlet for growth, that growth naturally turns to the production and multiplication of roots.

In this sentence, however, may be found the core of success or the cause of failure, and these two turn as much or more on physical conditions as on structural or constitutional qualities. For instance, the most perfect cuttings may be wrecked in a day or two in a dry atmosphere under the fierce glare of the sun, or with their heels burned in an excess of bottom heat. Nay, thousands are yearly ruined through mere excesses of surface temperature over bottom heat. It seems an infinitely small matter whether the top or the bottom of cuttings should have the most warmth. But on such trifles hangs the vital question, whether Rose cuttings shall shoot up into top growth to their speedy destruction, or produce a crop of healthy roots that shall convert them into things of beauty for many years.

The philosophy of the success of this extra heat on the heels of Rose cuttings may be difficult to explain. Of far more practical value than any merely philosophical or physiological explanation is the fact that it is so, and as nothing succeeds in the rooting of Roses in July, or any other season, like success, the readers of THE GARDEN are confidently invited to try this mode of raising own-root Roses for themselves.

Nothing is wanted but a few common hand-glasses, a common pit or a frame. Form a slight hot-bed, cover with soil, Cocoa-fibre refuse, sawdust, or any such clean or handy material to keep in steam; wait till cool enough. Avoid excess of heat—from 60° to 70° is almost excessive—and then proceed to make and insert the cuttings. Use the hot-bed frame or glass lights to ensure the shade, moisture, warmth needed, and in a period ranging from one month to two place in pots or plant out Rose cuttings in quantity. The name of pots suggests further and somewhat important practical instructions as to the mode of inserting the cuttings. In pots is the only safe mode for amateurs, and the surest, swiftest system for all. It may seem absurd to the initiated to affirm that success or failure may turn on whether Rose cuttings are dibbled out like Cabbage plants all over the surface of a rooting bed, or are placed in pots, and the latter plunged in the same or a similar bed. But not only is this generally true, but even the mode of inserting the cuttings in the pots largely determines the issue. Place six cuttings with the raw edges of their heels closely abutting against the side of a 4-inch pot, and the whole will root freely. Reverse the position of the raw heels towards the centre of the pot, and few or many of them will almost certainly fail. Silver sand is preferable to any soil or compost for the mere rooting of Rose cuttings, and a mixture of fine Cocoa fibre and sand over an inch of drainage is probably the best rooting medium. But why choose July? Because it is the close of our summer Rose harvest and the time of semi-maturity of Rose wood. The latter is neither asleep nor awake, at rest nor in full growth. The difference in time between the rooting of Rose cuttings in October or November and the rooting of them in June or July, properly understood, but reveals to cultivators their accelerated power over and the greater certainty of root-production in summer, contrasted with its slower and less sure progress in winter. But in practice there is no need to pit the one against the other, for the demand for own-root Roses in the near future is likely to prove so insatiable, as to strain all our powers and modes of propagation to keep abreast of them.

D. T. F.

Plants for covering tree stems.—Boles of trees are often considered unsightly, and it is sometimes desirable to cover them with some kind of plant other than Ivy. There is not a wide range of subjects to choose from, but there is sufficient for all ordinary purposes. Rampant-growing Roses are perhaps the best, as they are of quick growth, and when in flower make very beautiful objects; and in addition they give but little trouble after they are once established. Regular supplies of water should be given for the first summer after they are planted, for the reason that the soil is generally very dry in such positions, and if the plants are not attended to in regard to root moisture, they will make no progress. Whether it will be necessary to give the roots some fresh soil to start in, it is difficult to say without seeing the position; but in the case of very old trees, the probability is that it will be so. Any labour spent in this direction will no doubt be attended with better results than where no fresh soil has been added. There is very little reason, if any, to fear that the roots of the trees will be injured by taking out a barrow-load of earth,

and the same quantity of fresh soil mixed with some well rotted manure would be sufficient to give the climbing plant a good start. The best Roses for covering large boles of trees are the ever-green Roses (*R. sempervirens*), as they are hardy and retain their foliage through a good part of the winter; they also grow vigorously and flower profusely, and if the growth is thinned out, and the long strong shoots of the previous year left their whole length, they arch over in a most graceful manner, and flower down to their very points. *Félicité-Perpétue* is the best known variety in this section of Roses. It produces very large clusters of creamy-white flowers, which, although small, are very double. *Flora* bears flesh-coloured flowers, and therefore is useful for the sake of variety. The Ayrshire Roses are perhaps the most suitable when there is much space to cover, especially when there are large naked branches on which the growth of the Roses can be loosely trained. *Clematis montana* has few equals amongst deciduous flowering creepers for covering tree stems, as it grows rapidly, and bears training or pruning without injury. But it is when it is allowed to extend in its own way from branch to branch, with here and there some growth dangling in the air, that it is most effective. It is much to be regretted that this phase of gardening is so much neglected in the majority of places. One would not require to search far in established gardens before they found plenty of conspicuous tree boles that would be improved in appearance if some kind of climbing plant encircled the naked stems. Where there is not room for very vigorous growing subjects, there are several forms of the sweet-smelling Honeysuckles that may be treated in this way.—J. C. C., in *Field*.

STOVE AND GREENHOUSE.

WORK IN PLANT HOUSES.

STOVE PLANTS IN COOL HOUSES.—Such things as *Ixoras*, *Clerodendrons*, *Stephanotis*, and others of like character, though stove kinds in the full sense of the term, can be kept whilst in bloom during the present and ensuing months in a conservatory or greenhouse without their suffering in the least; that is, if whilst making their growth they have been stood well up to the glass in a house that admits plenty of light, and with no more shade than is necessary to keep the foliage from being injured, and this accompanied by the admission of less air than many look upon as necessary for stove plants. On the other hand, if plants of the species and varieties named are grown in over-shaded houses and stood far from the glass, they are useless for greenhouse or conservatory decoration, even at the warmest time in summer. At this season, when blooming plants are less plentiful than they were during the spring, the subjects in question are acceptable in structures that have to be kept gay. But in all cases tender plants must not be exposed to draughts, or the flowers will be soon cut off and the health of the plants endangered. Neither should more water be given during the time they are in a lower temperature than is requisite. Shade is necessary, not only to keep the foliage from being injured by the sun, but also to check the rapid evaporation that exposure to the sun causes, and which the plants under the conditions in which they are placed are not able to bear. Many kinds of stove plants do not require nearly so much rest as is often supposed, and I have found that keeping some sorts for a limited time in summer in a temperature that arrests growth is all the rest they need.

CEREUS.—The yellow and also the white large night-flowering species of Cactus are not only highly interesting plants, but are also very beautiful. They are easily grown, as an ordinary stove will keep them in health. But it is not so easy to induce them to flower freely. To do this, not only must the growth be thoroughly matured at the end of the summer, but it requires to be made under conditions that tend to harden and solidify the shoots all through the time that the plants are growing. Where there happens to be a stove with a moderately high back or end wall facing south, this is

just the place on which to train the plants. Should the chimney from the boiler be carried up in or against the wall it will be still better, as the dry heat which it gives off, combined with the sun, will afford what is required to ensure the free production of flowers. The tops of the plants should not be shaded, as the more roasting they get the better they will bloom. Comparatively little pot-room is needed, as with the syringing overhead once a day that is necessary during the growing season, and the water that is thrown about the floors during the spring and summer, bundles of long roots will be pushed out from the old stems which evidently sustain the plants by the moisture they absorb.

EPIPHYLLUMS.—The different varieties of Epiphyllums that bloomed early in the spring will now have made their growth; that is they will have completed as much growth as required. If the plants were kept under such conditions as favour growth, the shoots would go on extending until so late in autumn that there would be no chance of getting them matured in a way that would enable them to bloom. There is no better place now for the large kinds when grown in pots than the foot of a south wall out of doors, with the shoots secured to the wall. The heat reflected from the bricks in the course of a month will effect the ripening process thoroughly. So treated, it will not be advisable to wholly withhold water from the roots in the way that is often done when the plants are subjected to less drying influences; but no more should be given than is found necessary to keep the shoots from shrivelling. See that the drainage is right. These Epiphyllums so seldom require repotting, that it often happens that the drainage gets clogged, so that the water has a difficulty in passing off. An inch or two of ashes should be provided for the plants to stand on, for even in the comparatively dry condition the soil will be kept in, worms may get into the balls if there is nothing done to prevent this. Plants that have been kept cool and have flowered late will now be making growth; they should be stood in a light position in a greenhouse or pit, where they will be fully exposed to the sun and have plenty of air, with sufficient water to keep them moving freely until the requisite amount of growth has been made. After this withhold water, and let the plants have all the direct sun-heat that is available through the autumn.

EPIPHYLLUM TRUNCATUM.—This useful section of Epiphyllums will now have completed their growth, and if it has been made under right conditions the shoots will be plump and firm. The plants will do for the next month either in a cold pit or frame, with the lights tilted to admit plenty of air, or they may be put out of doors in a sunny place.

ACHIMENES.—Plants that were started soon after the beginning of the year, and that bloomed early, will now be going out of flower. They should be kept in a house or pit where they will have plenty of light, with little or no shade, and have water regularly, so as to keep the soil fairly moist until the tops turn yellow and die off naturally. The tubers of Achimenes often decay in the winter, and when they keep fairly well do not always bloom so freely as they should. The cause of these mishaps may be generally traced to the plants being neglected after flowering; whereas if the little necessary attention was given there would be neither loss of the roots nor disappointment in their blooming.

GLOXINIAS.—Fine as the seedlings are that may now be had from seed of a good strain, there are yet some varieties which appear that it is a pity not to increase. Leaves of such as are worth propagating should, if not already put in to strike, be at once seen to. Where tubers of a size such as will admit of their blooming well and early next summer are expected, entire leaves should be used. They ought to be put in with about an inch of stalk attached; this should be inserted in the sand so that a little of the base of the leaf-blade is covered. By this course much larger tubers will be secured than if several are obtained by cutting the midrib in several places, and laying the leaf flat upon the sand.

In the case of any variety of which as much stock as possible is wanted, the latter method is the best; for this system, seed-pans that will admit of the entire leaves being laid on the surface are preferable to pots. The ordinary old-fashioned practice of weighting the leaf at the places where it is cut with pebbles heavy enough to keep the severed parts in contact with the moist sand is as good as any.

YOUNG PLANTS OF GLOXINIA that were raised from seed sown early in spring, with the intention of having them in bloom through the autumn months, will now be large enough for putting into the pots in which they are to flower; 4-inch pots will be large enough. A mixture of peat and loam with a little leaf-mould and sand will answer for them. After potting, an intermediate temperature will be better than more heat, as the object is rather to delay the blooming somewhat than to hurry it on, and under cooler treatment the growth will be more sturdy and better calculated to produce flowers in the right condition for lasting. Few flowers look more beautiful when used sparingly and alone in small vases and stands, with a bit or two of Fern or other green material of a suitable character; but to have them in a condition that will admit of their lasting and keeping fresh and plump, the plants must be grown as near the glass as they can stand and not be kept too hot. Syringe overhead every afternoon carefully so as to get the water as far as possible to the under side of the leaves as well as the upper surface. If this is not done, the chances are that thrips and red spider will attack the plants and give much trouble.

GLORIOSAS.—The time that these plants come into flower depends mainly on that at which the tubers were started and the amount of heat they have afterwards been given. In the generality of cases they are the most useful when they do not bloom until towards the end of August, as then they will keep on flowering through September when indoor flowers are usually scarce. If the plants are at all under-potted, they should have manure water each alternate time the soil requires moistening. Keep the shoots regularly trained to the sticks or trellises as they extend. Plants that have flowered early and have been stood in cooler quarters whilst blooming than those in which they were grown, should as soon as they are out of flower be moved back to the stove and be attended to with water in order to keep the tops fresh until they die down naturally. When the foliage begins to die off allow the soil to become gradually drier, and in this way prepare the bulbs for resting through the winter. T. B.

SHORT NOTES.—STOVE AND GREENHOUSE.

Fuchsia bacillaris.—This little Fuchsia belongs to the same section as the two miniature species, *F. microphylla* and *thymifolia*, and like them forms a pretty free-flowering specimen for pot culture. It is a much-branched bush, with tiny leaves, and equally small flowers of a rich rose colour, whose unusually broad petals serve to distinguish it from allied kinds. —H. P.

Nidularium striatum.—This is a beautiful addition to our bromeliaceous plants which I recently noted in Mr. Bull's nursery at Chelsea; its leaves are bright green, recurved at the tips, and broadly striped with pure white, the white stripes being edged with creamy yellow. It is very attractive, and should assist in rendering these plants popular with English plant growers. It comes from Brazil, and requires stove heat. —W. H. G.

Æchmea purpurea is a Bromeliad imported from Colombia by Mr. Williams, of Holloway. It is a very beautiful and striking species. The leaves, each from a foot to 18 inches long, are recurved, and deep green suffused with purple, the tips of the leaves quite pale green. During the spring and summer these pale green tips change to rich crimson, tinged with purple, thus producing a charming effect. Like all the family, it enjoys stove heat and a moist atmosphere. Really this order of plants deserves an English champion.

Why do we leave them in the hands of our French and Belgian neighbours?—W. H. G.

Mussaenda erythrophylla.—This is a plant of which for many years I have had specimens gathered in Western Africa. It is now being distributed by Mr. Bull, of Chelsea. It is a dense, compact, shrubby stove plant, producing upon the apex of the shoots dense heads of pale yellow flowers, and at their base large bracts of an intense scarlet, which render the plant extremely showy. It is a grand acquisition to our plant stoves, especially for winter blooming.—W. H. G.

Seedling Streptocarpus.—The perpetual flowering character of these pretty plants is a great recommendation, for they bloom throughout the entire summer, and that too without any great amount of attention. At one time they were considered to require the temperature of a stove, but I find that they will succeed well during the summer months in a cold frame if shaded from the full glare of the sun. They are easily raised from seed and the progeny is very variable, especially if a few of the most distinct kinds are grouped together to supply the seed, as the young plants will generally differ greatly from each other and also from their parents. As far as cultural requirements are concerned they need much the same treatment as the Gloxinias, and like them are greatly benefited by a little stimulant occasionally during the flowering season. Though succeeding so well in a cold frame during the summer, they require a temperature somewhat above that of an ordinary greenhouse in the winter.—H. P.

GARDEN FLORA.

PLATE 711.

LADY'S BOWER MUTISIA.

(MUTISIA CLEMATIS.*)

THERE are about forty species of Mutisia known to botanists. Eleven of these are natives of Peru, Ecuador, and Brazil, and are characterised by a climbing habit and pinnate Vetch-like leaves. The others are natives of the Chilian Andes, and have undivided or simple leaves, rigid in texture, whilst the habit is, as a rule, bushy and not climbing. Almost every one of these forty species is remarkable for the size and beauty of its flower-heads, whilst as members of the great Order Compositæ, they are exceptionally interesting on account of their being very unlike the general run of Composites in habit, character of foliage, and in the form of the flower-heads. Plants which possess such highly desirable qualities as these, and which are plentiful in such accessible countries as those named, ought, one would think, to be well represented in English gardens. They are found at elevations sufficiently high to admit of their being grown out-of-doors in England, or at any rate in the warmer parts of the country, and yet, these facts notwithstanding, the Mutisias are scarcely known in English horticulture. This is explained by the fact that the several species which have been introduced have proved so difficult to manage, that after the first trial few people are inclined to trouble further about them. I am afraid we must speak of Mutisias as only second-rate garden plants. No plant which is really difficult to manage in a garden has any right to be called first-rate, no matter how great its beauty. Some few cultivators have been or are successful with *M. decurrens*; once or twice *M. ilicifolia* has been grown and flowered very well; whilst in *M. Clematis*, the species here figured, we have the least miffy of the trio of garden Mutisias. In the volume of THE GARDEN for 1876, p. 134,

* Drawn for THE GARDEN by H. G. Moon, March 30, 1889, from specimens sent from Pendell Court Gardens. Lithographed and printed by Guillaume Severeys.



MUTISIA CLEMATILIS

there is a very good coloured plate of *M. ilicifolia*, and along with it an interesting account of the genus by Mr. W. B. Hemsley, F.R.S. This plant is a native of Chili, where it grows over bushes. It was introduced in 1832, but rarely flowered. The late Mr. Wilson Saunders was successful with it in 1872, flowering it superbly in October. So far as I know, it is not in cultivation now, and I have never seen it in bloom. Two years ago there were several healthy plants of it at Kew, but they died suddenly without having flowered. The plant has thin, wiry stems, and every part is covered with a cob-web-like tomentum. The leaves are about 2 inches long, sessile, oblong, the margins spiny-toothed, the texture leathery, and the midrib extending beyond the blade, branching and forming a strong twining tendril. The flowers are axillary, 3 inches across, with from eight to twelve ray-florets coloured pale pink, or sometimes white with pink tips; the disc is lemon-yellow. Anyone who has seen the plate of this species referred to will admit that as a distinct, interesting, and beautiful flowering plant *M. ilicifolia* would be hard to beat. If anyone knows how to grow, keep, and flower this plant well, I for one should be thankful for details of the treatment given. I confess I do not know how it is to be done.

M. DECURRENS.—Of this, the most beautiful of the three garden *Mutisia*s, a fine plate will be found in *THE GARDEN* for 1883, p. 553. This plant when well done, and it has been really superbly grown by several gardeners lately, presents a most gorgeous picture of large orange-coloured graceful flowers. Mr. Moon has caught the elegance and beauty of the flowers to perfection in the plate referred to. Mr. Coleman has grown it well amongst *Rhododendrons* at Eastnor Castle; Mr. Gumbleton, Mr. Hooke, Mr. Ellacombe, and Kew have also had it in good condition. There is a healthy young plant with about a dozen buds and open flowers upon it now against one of the museums at Kew. It was introduced by Veitch in 1861 from Chili, and flowered by them in their Exeter Nurseries in the open air. I have also seen it in fair health and well flowered in a cool greenhouse. Most cultivators kill this species by planting it in a hot, sunny, dry position, where it gets baked, and soon becomes very sickly-looking, even if it lives. It wants a moist, cool soil, a sunny, airy position, and a few slender *Pea* sticks to clamber upon. The stems when mature are wiry, the leaves are strap-shaped, with the blade extending a long distance down the stem, forming very conspicuous wings. The midrib is prolonged into a stout wiry tendril, which holds on firmly to anything it once clasps. The flower-heads are terminal, $4\frac{1}{2}$ inches across, with fourteen ray-florets, each half an inch across, spreading, and then curving elegantly downwards, their colour being brilliant orange. The disc is yellow, and the large involucre is bluish green tinged with purple.

M. CLEMATIS (see accompanying plate).—This is the first coloured picture of this species ever published in any English work. It is a tall herbaceous climber, 10 feet to 20 feet high, with pinnate leaves, terminating in branched tendrils, the leaflets being covered on the under side with a fine silky down. When not in flower, this *Mutisia* might very easily be mistaken for a legume of some kind; indeed, so unlike a composite is it, that a 'cute botanist, on seeing the flowering specimens shown by Mr. Ross at one of the fortnightly meetings of the Royal Horticultural Society, examined them carefully, as he doubted the flowers being of the same plant as the *Vetch*-like foliage. The plant grows very freely, does not die off suddenly like the others, and when properly treated it flowers freely. Mr. Ross, the able gardener to Sir George Macleay at Pendell Court, whose exhibits at the meetings of the Royal Horticultural Society are generally conspicuous for their interest and rarity, has never shown anything which gratified plantsmen more than did the beautifully-grown specimens of this *Mutisia* when he

brought them in March last. His plant is growing in a greenhouse, where it is planted in a peat border against a wall, whilst its branches form a mass of luxuriant growth against the roof. The beauty of this plant when full of its long, drooping, bright-coloured flower-heads, as shown in the plate, is easily imagined. It is probable that this species would thrive out of doors in such places as Devon, South Wales, South Ireland, &c. It grows as fast as *Cobæa scandens*, and is said to be propagated in the same way, viz., by means of cuttings of the young growth. I have tried it this way, however, and failed. This species is a native of New Grenada, Peru, and Ecuador, at elevations of from 6000 feet to 11,000 feet. W.

FRUIT GARDEN.

FAILURE OF THE FRUIT CROPS.

WE have a large collection of the best kinds of fruit trees, especially Apples and Pears, and had a good crop of fairly good fruit from them last year, but a very indifferent one this. The trees were laden with blossoms, the weather was favourable, and outward appearances betokened a large and abundant crop of good fruit, but appearances have been deceptive. Eleven flowers out of every twelve must have been imperfect. The reason of this is obvious. Last autumn and late summer were cold and wet. Our fruit garden was so much saturated on the last day in July and the first of August that the drains were not sufficient to carry off the water rapidly enough, and the mischief was aggravated by the river Roden being also unable to empty its waters fast enough, so that fields, villages and towns were under water. This was, of course, exceptional, and no one can do more than arrange for the drainage of the water from their own land, but I have no hesitation in asserting that the best land for fruit culture being clay land, it is also the land that requires draining the most, and unless it is well drained the young wood will be badly ripened and liable to canker. The blossom buds will not ripen, and although the corolla may be perfect, the other parts of the flower will not be, and even if the weather is favourable the blossoms will not set well, and in an uncertain spring they may be a total failure.

After a run of bad seasons we often hear the remark that the seasons have changed, and that we must take steps to alter our system of culture, when all at once a season like the present one upsets our arrangements. After a very long experience of fruit culture I have no hesitation in asserting that a good drainage system and deep working of the soil are the foundation of permanent success. Light mulchings of decayed manure in summer, and working the hoe well over the ground to prevent its cracking have also been very beneficial this season. It is a necessary part of culture every season. The mulchings encourage the roots up to the surface where the soil is warm and favourable to the production of good wood and buds. Trees treated in this way will not be liable to canker, although I believe it is a mistake to suppose that "blight," that is the aphid tribe, will not be so likely to attack healthy vigorous trees as they will others that are not in such good condition. For instance, our Plum trees this year are covered with aphid, which has done them much injury, but they are as perfectly healthy and vigorous as trees can be; at least, they were before they became so much crippled by the blight.

The next point I would insist upon is summer pruning and thinning of the wood and fruitful spurs. Wall trees if neglected in June and July may not recover from this neglect for another season. The young wood should be thinned out in good time, and what remains must be nailed in to the wall. Every leaf and branch should have room for their full development. The garden engine must be vigorously used if any of the aphid tribe have fastened upon the leaves. Practical gardeners do not need to be reminded of this; they know full well what to do. The difficulty is to find time to

do all the work claiming attention in the months of June and July, but clearing the trees of insect pests is such an important element of success, that neglect of it cannot be tolerated. I would rather let weeds grow apace on the walks than fail to clean the fruit trees. Some say thin the blossoms; this may be done with advantage if time can be spared, but I would rather thin out the fruitful spurs where they are overcrowded than leave them on to produce blossoms which have afterwards to be removed. The ordinary cultivator is delighted to see his trees sheets of blossom, as he terms it, but if one in a hundred was to set, the crop might be too heavy. Practical gardeners are well aware that when flowers are too numerous they are not so perfect, nor do they produce such good fruit if allowed to develop in such masses until they are thinned out by Nature asserting herself. One point in favour of thinning out the buds is this, that it can be done at any time during the late autumn and winter months, when work is not so pressing. It may be necessary to thin out quite three-fourths of the buds or more, and the remaining clusters of blossoms will be larger and better, while the individual flowers will also be more perfect. It is quite certain that spring frosts are blamed for the destruction of the crop, when the real cause is unripened wood, which is sure to produce imperfect blossoms, and unthinned blossom buds will not mature nor even develop so well as those judiciously thinned out. Some cultivators advise the thinning out of fruit after it has set, but allowing the fruit to grow to a certain size must rob the trees of some of their strength. I have been tempted to make these few remarks because I know of farmers and others who are planting Apple, Pear, and Plum trees in quantity, and in one instance the ground was not even deeply dug, but merely turned over with the plough as for ordinary field crops. If the plough and not the spade is used to cultivate the ground, one should be used to turn over the top to the depth of 10 inches or a foot, and another to follow to stir up the subsoil 5 inches or 6 inches more; the subsoil not to be mixed up with the top. In garden culture I always well loosen up the subsoil, that is all. It would be a grave error to bring it up to the surface. Well loosened soil and deep drains are necessary to pass off the superfluous water rapidly.—J. DOUGLAS.

—My copy of *THE GARDEN*, June 15, with "D. T. F.'s" article (p. 554) was followed within an hour by a letter from a friend quite corroborating his remarks. There was the same glorious spread of blossom in spring, the same hopes nourished by the absence of May frosts, and the same bitter disappointment. No one looks on a handsome fruit tree in full flower without something more than a feeling of pleasure at its picturesque aspect. Above and beyond this is the anticipation of a bountiful harvest of fruit.

If there are any redeeming features in such a state of affairs as "D. T. F." indicates, and which he says is almost general, it is in the opportunity it affords for careful investigation for remedying it in the future. He touches on a point in which I believe lies to a very great extent the secret of the failure. What, then, is this primary cause? Are we to take refuge behind the ravages of maggots and attribute to the caterpillars the sole responsibility for the lost crops? It requires but a rudimentary knowledge to understand that from unfavourable environments must inevitably spring results at some time or another of an imperfect character. The gardener notes this in a hundred ways. And if from certain predisposing causes, which can be proved to have existed, the blossom of fruit trees might be expected in the ordinary course of nature to lack that substance and development necessary for perfect fruitfulness, what more natural than that, having passed the comparatively easy stage of expansion, its lack of stamina should become apparent in the exhaustive stage of setting? "D. T. F." goes as far as this, but no farther. Effect we see plainly; cause needs little searching for. We are but reaping now the results of the wet and sunless season of last year, and its immediate effects upon fruit trees are imperfect ripening of the wood, and the subsequent

failure of a crop just when the prospects of a good season were at their brightest.

If any of your experienced readers should act upon "D. T. F.'s" hint, I hope they will, in dealing with this matter, tell us something of the character of the blossom if they have examined it. My own observations, which have been in various districts, have been of a conflicting character. I have carefully examined some trees well furnished with flowers, and the blossom, on dissection, proved to be of the normal character, petals large and substantial, anthers and stamens healthy, pistil vigorous, ovary well developed. There is nothing whatever wrong with these trees now; they will yield good and valuable crops. Others flowered profusely and the blossom to all outward semblance was perfect, but on close examination it was found that the pistil was very weak, the ovary absent and the stamens twisted. It needs no frost to impair such blossom as this; it is inherently weak, probably worthless, and if any of the surroundings is in the slightest degree unfavourable, failure is certain.

It may be fairly assumed, then, that the fruit failure is very largely attributable to weak blossom arising from unripened wood, this in turn being the result of the wet and sunless season of 1888. But such a cause may be said to preclude the possibility of remedy. Admittedly, we cannot control the seasons, but the fact of some trees bearing good crops, notwithstanding that they had similar drawbacks to the others, demands further inquiry. There are undoubtedly some sorts possessed of higher qualities than the majority, which, when aided by rational treatment, may be expected to pass through such ordeals as the present practically unscathed. It is these that should be grown. I would grow only a few varieties of Apples, for instance, which I have proved to be vigorous, hardy, and in other respects excellent, and I would let all the others go. Among the former would undoubtedly be Domino, Worcester Pearmain, Wellington, Bramley's Seedling (the finest orchard standard in cultivation), Duchess of Oldenburg and Lane's Prince Albert. And having got them I would not hack them mercilessly, cutting away bushels of fruit, but let them grow as large as they would, so as to secure a large bulk of produce. Use the knife only to thin, so that light and air may do the utmost that the season will permit to ripen the wood, then the effects of unfavourable seasons will at least be minimised.—W. P. C.

SHORT NOTES.—FRUIT.

Nuthatches eating Morello Cherries.—Is it a common thing for nuthatches to eat Morello Cherries? We have fed them with Nuts all the winter, and they have rewarded us by clearing off all our Morellos.—G. J. BLOMFIELD.

Bad Peaches.—This noble fruit is being degraded by the miserable specimens sent to the market. This season has been, one would think, favourable to the fruit, and yet again and again we have seen Peaches almost or quite devoid of flavour and very poor in size. We shall be glad if any of our Peach-growing readers will solve a problem, and tell us—

1. What are the best Peaches for flavour?
2. What is the value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest Peach tree?
5. What is the stock—if any—that tends to disease and canker?
6. If outdoor culture of the Peach is practised in the district, how far is it successful?

Insects on Pear tree leaves.—I have sent some leaves of Pear trees that are attacked by some kind of insect which eats the outer skin of the leaves till they die and all fall off. As I have never seen the like before, I have sent you some specimens to see if you could kindly tell me what it is, and how to get rid of it. I have tried soft soap water, and paraffin at the rate of 1 pint to 3 gallons of water, and syringed the trees with it, but that does not kill it.—W. G.

** In reply to the above, the leaves of your Pear tree are attacked by the Pear slug worm (Se-

landria cerasi). The mixture you used should have killed them. Are you sure they were touched by it, and that you kept it well mixed? Syringing with soft soap and tobacco water, soot and lime water, and dusting the leaves with lime have been found very useful. By stirring the soil under the trees in the winter to a depth of 3 inches or 4 inches you will expose the chrysalides to the weather, and enable the birds to get at them.—G. S. S.

WORK IN FRUIT HOUSES.

AUTUMN CUCUMBERS.

WHERE Cucumbers are grown under high pressure and failing plants are removed before spider becomes troublesome, the end of July is a good time to make a sowing of Telegraph for giving a full supply of fruit up to Christmas. Although light, compact, and efficiently heated compartments are essential to the growth of good fruit after September, hot-water pipes up to that date will not be needed. Indeed, where good fermenting material, be it leaves alone, leaves and manure mixed, or tan, can be obtained, the pipes then even should only be employed as supplementary heat-producers. The best plants can be raised in a single light frame, placed upon a manure bed with good back and front linings, the ammonia from which will ensure freedom from insects, short-jointed growth, and an abundance of feeders. They should neither be plunged nor stopped, but placed thinly on a hard floor of ashes or old tan, and, given plenty of pot room, they must be kept steadily progressing until the pit is ready for them. As this in all probability will have been occupied by Melons, a thorough scrubbing and cleansing will be necessary for the removal of red spider, when fermenting material must be made the prime heat-producing factor. Very narrow pits, with an inactive pipe lying at the bottom and well buried in rubble, answer best, always provided the plants are not too near the pipes from which top heat later on will be obtained; but, lacking this convenience, the planks may be placed on edge, 18 inches apart, right along the centre of the pit, to form a trough for the reception of the compost. This trough should be extra well drained, sodded over, Grass side downwards, and completely imbedded back and front by fermenting material. The best compost is rough turf, lime rubble, burnt refuse, a dash of soot, and bone-dust, and, considering that the stems can be earthed up to any extent, it need not be more than 9 inches deep to start with. As the plants will grow very fast through August and September, and extension training is most simple and profitable, they should have not less than 30 square feet of trellis each to allow for their full development. Anyone who has tried close planting and failed will do well to give the plants more room, to avoid the use of animal manure, and try extension training. By extension training it must not be assumed that stopping may be entirely dispensed with. On the contrary, the leaders must be pinched when they have traversed two-thirds of the trellis, the side shoots at the second leaf, the laterals at the first joint beyond the fruit until the whole of the allotted space is covered. As the plants grow and the roots rise to the surface, more rough turfy compost must be added little and often until the trough is quite full, but nothing in the way of stimulants will be needed until they get into full bearing. Pure tepid water must be given in abundance, and weak soot water may be freely used for syringing purposes, especially when sun heat favours closing early, and running up to a temperature of 90°. To many people a Cucumber is a Cucumber, but if I mistake not, a fruit that is grown quickly and cut under full size is as superior in its way as a good Melon is over a bad one. To ensure this sweet, crisp quality, the bottom-heat must be maintained by frequent renovation, gross manure as a mulch must be avoided, and the health of the plants preserved by inside cleanliness and liberal ventilation.

Old plants in pits, frames, and houses which have been a long time in bearing will now begin to show signs of a falling off in the quality of the fruit, no matter how well they may have been fed and syringed. If others are coming on to take

their place, the shortest route, a clean bill of health, is uprooting, cleansing, and replanting, as I have just suggested. If this course is impracticable, their vigour may be improved, if not quite restored, by cutting over; by baring the roots, and top-dressing with fresh turf and bone-dust; by feeding with tepid liquid and copious syringing. The removal of all the fruit and old foliage in a house at one time is not absolutely necessary, but it is the best course, as insect pests and mildew, which travel quickly, by this means are got rid of. To carry out this mode of resuscitation, the bottom-heat should be made sharp by renovation with fresh fermenting leaves, and in order to keep the house close and moist, slight shading for a few days may be resorted to. If insecticides are used, a weak solution of soft soap and sulphur syringed over the walls and trellis, especially from the outside, will effect much good; or, the roof being fixed, the foliage may be cleansed by dipping. Late in the evening is the best time to apply insecticides, and the roof should be well shaded before the sun strikes it the following morning.

PEACHES.

A month of bright sunny weather without one drop of rain, and the wind blowing steadily from the north means drought, the worst of all enemies that can get into Peach borders, be the trees early or late divested of their fruit or carrying full crops on to maturity. The weather at last, it is true, has changed, and within the last twenty-four hours we have had light showers, but for all the good they will do to deeply-seated roots in outside borders we might as well be without them. They soften the atmosphere and fill up with most precious fluid our empty cisterns, but for reaching the roots we must still resort to the hose and the barrel, as no tree grown under glass with every leaf exposed to sun and light will take more water than a well-drained Peach. Timely mulching of course is a great help, but independently of this aid all borders inside as well as out should be flooded until the water passes freely through the drainage. The syringe too must be regularly plied twice a day, the first time soon after 6 a.m., and again about 4 p.m., when closing for two hours will greatly increase the size of the fruit. Where trees are carrying full crops of fruit, say one Peach to each square foot of foliage, a thoroughly good mulch of rotten manure will prove of inestimable value, as it is better to lift and relay the roots in fresh pure loam in the autumn than starve the fruit for the sake of keeping the wood in subjection. Indeed I question if extension trees carrying this weight of fruit can be induced to grow too strong and clothe the numerous stones with pulp without the aid of good stimulants. There are, of course, Peaches and Peaches, but 8 ozs. is a good average weight, and there must be something radically wrong when spider persists in spreading and the fruit finishes 2 ozs. short of this standard.

Midseason houses in which the fruit is nearly ripe must have more air and less moisture, but the syringe must not be laid aside, as a most genial atmosphere, by no means detrimental to flavour, can be maintained where the stems, walls, and other available parts of the house are well damped at least once, if not twice daily. If not already done, the points may still be pinched out of shoots intended to be cut away when the fruit is gathered. All laterals and sub-laterals must be kept stopped to a single leaf, and the main foliage where practicable must be turned or tied aside, not cut off, to let in fresh air and sunlight. Many old-school growers bedded their houses with soft hay, or suspended nets beneath the trees to catch the fruit, but Peaches in those days were consumed at home, and dead ripe fruit was always available. Nearly all the early and midseason Peaches now travel hundreds of miles, and independently of the fact that fruit ripe enough to drop is past its best, this condition not only precludes all possibility of safe packing for private use, but it renders it positively useless for market. Many years ago I used hay for catching an overlooked fruit, but I could not endure nets, as they cut and damaged more than they saved and prevented getting about the trees when gathering for long journeys. Growers who now produce thou-

sands where formerly they grew scores make sure of size and colour. They gather when quite hard at the stalk to the touch. They pack in single layers in soft Moss, and secure the highest prices from the fruiterers. I do not say Peaches ripened up in the dealers' vaults are first-rate, but this is the custom, and town consumers who do not grow their own are obliged to submit to it.

Late houses, a month behind in May, have made up for lost time, and the fruit now looks like ripening earlier than usual. If wanted before wall Peaches are ready the trees should not be closely tied in, certain shoots not likely to be wanted stopped to throw size into the fruit and prevent crowding, and every available fruit, as a matter of course, raised to the upper side of the trellis. Every Peach cannot be turned apex upward, but a deft hand equipped with short pieces of lath, just long enough to reach from wire to wire, can accomplish a great deal, and good fruit well repays the trouble. If wanted late, the shoots may be allowed free growth, provided they do not touch the glass, and the house may be left open night and day, but they must be tied down in time to ensure perfect colour. Having laid so much stress upon the use of water, I need not repeat my remarks upon this head, but one sentence for the young and inexperienced I must pen. More failures may be traced to an insufficient supply of water, both to root and leaf, than to any defect in house culture.

PINES.

When the bulk of the fruit has been cut from Queens started in February a general clearance of the old stools may be made, and this being a good time for a thorough cleansing, advantage must be taken of an early opportunity for putting the pit in order. In well-arranged gardens, Jamaicas, Rothschilds, and Cayennes, about this time showing fruit, are transferred to this particular compartment, and a sharp bottom-heat combined with genial moisture being essential to quick development, the renovation of the bed produces favourable conditions. In such places the principal bottom-heat will be obtained from pipes lying in rubble or chambers, the plunging material, consisting of leaves or tan, being just deep enough to carry the pots, always warm, but never hot enough to damage the roots. Here once plunged the plants will be quite safe, as the opening or shutting of a valve will regulate the bottom-heat to a nicety, but in makeshift places denied the economy and comfort of hot-water bottom-heat, semi-plunging, full plunging, lifting, and rocking make one dread touching deep fermenting beds at any time, especially so during the summer. Good Oak leaves, fortunately, at this time of year are comparatively mild, but knowing how quickly they are revived by disturbance by sun-heat and moisture, I would strongly suggest thorough working beforehand, and treading as hard as possible after they are introduced. If one uniform bottom-heat could be fixed upon for fruiting plants, I should say 80° to 85°, as the pots full of roots could be plunged to the rims, and frequent watering, often so baneful, could be reduced to a minimum.

Strong successions intended for starting early having filled their pots with roots will now require the greatest care, as too much heat and moisture for the next two months may result in a soft growth, which will not ripen in time for proper resting, whilst a high temperature with insufficient water may induce premature starting, when plants and fruit will be worthless. To steer clear of either of these rocks the bottom-heat should be kept steady a little above 80°, water as yet should be given freely when necessary, air moisture from indirect syringing liberal, and although well ventilated through the early part of the day, closing with solar heat and moisture should ensure a brisk growing temperature throughout the afternoon.

The general stock of successions now in their fruiting pots must still be kept growing freely, not only by the liberal use of mild stimulants, but also by the production of plenty of atmospheric moisture, and light overhead syringing, when the house is closed for the day. Night firing in some cases and in cold localities may be absolutely necessary,

but the less of this drying element the better, as may be seen in old-fashioned houses furnished with good external linings. When hot-water pipes came in, fermenting manure or leaf linings went out, and no one, I suppose, would wish one foot of piping cut off, but notwithstanding the soft genial warmth from decaying vegetable matter is so valuable, that all who can should provide means for admitting or excluding it at pleasure.

Suckers plunged over beds of manure or leaves, and kept at the proper temperature by means of external linings, make roots quickly, and requiring very little water, their foliage is stout, fleshy, and so healthy, that one is apt to wish that he could always keep them in these genial quarters. This, however, is simply out of the question, and as all the plants must eventually find their way into hot-water pits, those requiring it should have a timely shift into pots which will carry them through the winter. A few, it is possible, may be strong enough to go into fruiting pots, but overpotting being a great mistake, the majority of them may pass from 6-inch to 8-inch pots, and from 7-inch to 9-inch pots, with the view to a final shift early in September. Late potting, however, is not advisable, but when practised the plants should have good quarters in which they can be kept steadily progressing through the winter. As the fine Pine growers now follow the biennial system of potting up suckers, the stock should be kept up by putting in a few of the very best at short intervals, and keeping them constantly growing from the start to the finish. Large, brown, ripe summer suckers should be trimmed, potted in warm compost, the firmer the better, watered, and plunged at once in a sharp bottom-heat of 85° to 90°. Slight shading for a few hours on bright days may be necessary, but of two evils it is better to allow a little browning than a weak elongated growth.

WORK AMONGST HARDY FRUITS.

The routine work in this department just now is pretty heavy, and will continue so until the soft fruit has passed away and the training of wall trees is finished. The latter, owing to light crops of fruit and extra strong growth of wood, is exceptionally heavy, but it must not be shirked or delayed even, as timely attention to thin training is the main factor in securing perfectly matured shoots and spurs. A dry warm June was a godsend for the trees, root and branch, but the warm rain which fell about the middle of the present month has revived the sap, and what we term the midsummer shoot is doing great things for the extension trainer. He on his part will allow each shoot an abundance of room for the full development and play of the foliage against the brickwork, and having plenty of space ahead whilst nailing or tying in closely, and pinching all laterals well after stopping until the strongest show signs of taking an undue share of the sap. Also he will keep on the alert for red spider and that other pest black fly, which so frequently attacks certain trees every year. The first upon such a free luxuriant growth of wood and foliage is hardly likely to hold its own, but in the event of its spreading I should use insecticides in preference to heavy and oft-repeated volumes of clean water. Soapsuds with a few handfuls of sulphur added will stay its progress in twenty-four hours, when it may be washed off without detriment to the fruit. Black fly, a most persistent enemy, protects itself in the points of the shoots which it soon converts into miniature mops, and from which rivers of pure water will not dislodge it. Tobacco powder well dredged in, however, is fatal to its progress, or dipping in tobacco water answers equally well, but the late growth which follows a sharp attack being of little use, all the badly curled points may be cut off and trimmed preliminary to dipping or dusting. When certain trees are subject to attacks annually, the walls should be looked to in winter, when the wash of lime, Venetian red, soot and oil, so often recommended in these pages, will seal up the stronghold, and there will be an end of it. Next to the manipulation and management of fruit trees generally stand the protection and gathering of ripe fruit. Birds this season are unusually numerous,

and for a short time will fight for their share of the luscious produce, but nets are cheap enough, and if put on early in the season, the little filch may be given ungrudgingly. Wasps, we are led to believe, will be unusually troublesome, but with the exception of Gooseberries and Currants (unusually fine) and a little stone fruit, we have no great choice of fruit for them to devour. Nottingham netting still stands first for protecting choice wall trees and bushes—an operation somewhat akin to locking the stable-door after the horse is stolen; whilst nest-hunting and dressing with a tablespoonful of gas tar are conservative of annoyance, protecting materials and labour. My young men set out on the war-path early in July, mark the nests they find on bright days, administer the composing draught at night, seal the entrance with a piece of sod, and the work is finished.

APRICOTS.

Those who have good crops of this useful fruit should now divest the trees of all lateral growths, and turn aside the leaves to let in light and fresh air. Woodlice, being especially partial to the best samples, should now be discomfited by a thorough washing out with the hose or syringe, and when driven to bay in the dry littery mulching, their destruction or removal is simple enough. When we grew Apricots on very old walls, we made their quarters untenable by the use of the syringe and cleared away the mulching bodily. A thorough root-watering was followed by an evacuation of cracks and crevices, which in due course were firmly rammed, a little fresh stable litter made the wall path neat, when fruit which did not actually touch the wall escaped rubbing round the stalk.

STRAWBERRIES.

When the gathering of this fruit is over, all young plantations having another year to run must be cleared of runners, damaged leaves, and weeds, well hosed if dry, lightly pointed up and mulched with rotten manure or stiff rich loam, according to the light or heavy nature of the land. If mildew has been prevalent, all trimmings and refuse should be taken away and burned, when a thorough dusting of the old stools with a mixture of soot, lime, and sulphur will destroy the spores and break up the stronghold of slugs and snails. All layering should now be finished, and fresh ground well manured and deeply dug for new plantations. Early sorts may be planted about the end of July—that is, provided the soil is in good condition and the weather favourable. If put out a foot apart each way on a warm border, well mulched and watered, they will give a heavy crop of fine fruit next summer. The general planting, 2 feet apart, may be made in August. W. C.

Cordon Currant trees.—A neighbour of mine, Mr. Pegg, of Ealing Green, has a fancy for growing Red and White Currants on upright cordons, and they have reached a great height, some of them as much as 14 feet or 15 feet. I daresay Mr. Pegg is in grave danger of being termed a "faddist," but he takes great pride in his lofty cordons, and they are quite a feature in his kitchen garden. So proud is he of them, that he has had lofty iron rods made to tie them to prevent them from being blown out of an upright position. For years past he has allowed a leading shoot to go upwards, spurring back all lateral growths, and in this way they have reached to far above the soil in which they are growing. How my neighbour is to gather the fruit if he allows them to go much higher will be a mystery; as it is, he has to place a tall gardener upon a pair of lofty steps in order to reach them. I notice that the finest fruit is towards the ground, the smallest towards the top. I am sure, could these trees be lifted while in fruit and taken to London and exhibited at one of the meetings of the Royal Horticultural Society, they would form subjects of great interest. The white and red varieties do well in this way.—R. D.

Plums in France.—Plums constitute a produce of great importance, and it may be interesting to point out the extent of their culture in France. In the first place comes Lot-et-Garonne, with 175,000 cwt., valued at 12,000,000 francs. The

fruits of this country are very much prized. Next comes the Deux-Sèvres, supplying 98,960 cwt., worth 2,000,000 francs. The production of the Loiret is about 53,500 cwt., valued at 270,000 francs. That of the two departments of Aisne and Seine-et-Marne amounts to about 40,000 cwt. The 37,000 cwt. of Seine-et-Oise have a value of 48,000 francs, the production of Meurthe-et-Moselle amounts to 34,000 cwt., and it varies from 24,000 cwt. to 14,000 cwt. for the departments of the Aube, Haute-Saône, Meuse, Vosges, Tarn-et-Garonne, Haute-Marne, and Seine-Inférieure. These figures relate to the year 1885. The total of the harvest in France has risen to 752,000 cwt. Moreover, as the quality of the fruit varies considerably, the variations in price are also great. There is certainly the material for supplying a considerable commerce.—*La Nature*.

THE SECOND CROP OF FIGS.

In the open air the second crop of Figs has no value, never reaching in our climate the ripening stage, though some years ago in a very hot, dry season I ripened a second crop of White Marseilles growing in a very warm, sunny corner by placing some spare lights over them. The season and the means at hand were exceptional, and would not often, if available, produce the same results, but under glass where the first crop is helped forward with artificial heat, the second crop is usually better and more reliable than the first. Some trees do occasionally, either through immatured wood or some sudden check being given during growth, cast off a part of their first crop, but this never happens with the second. Some kinds, such as the Brown Turkey and the variety mentioned above, usually produce very heavy second crops, and unless the trees are well nourished by rich mulchings and liquid stimulants the Figs will be small. It is wonderful how soon a healthy Fig tree, whether in a pot or planted in a well-drained border where the roots are under control, responds to a liberal application of liquid manure. This in my experience is more marked than with most other fruits, I suppose the reason being that the Fig tree is such an abundant rooter under favourable circumstances. One of the chief points in Fig culture under glass is to keep the foliage clean and free from insects. After the first crop has been gathered and until the early fruits of the second begin to show signs of ripening the syringe must be used freely at least twice a day, directing the copious streams of water in such a manner that both sides of the leaves get well washed. Just a little dash of soft soap has a beneficial effect upon trees predisposed to the attacks of red spider or brown scale. The growth, of course, must be kept thin, and all laterals pinched closely in. After the fruit begins to ripen the syringe must be laid aside and the sponge brought into use, should there be any further need for a sustained attack upon insect enemies. E. H.

Peach trees.—Extension training, no doubt, is generally the system which most cultivators desire to practise. Peaches grown into grotesque shapes, twisted round pillars, forming margins for window frames, and trained into other forms have more about them to attract the curious than to excite the admiration of the painstaking cultivator. A fan-trained tree is probably the most pleasing to look upon, and though it may be got up quickly into size, there is no necessity for growing it into a coarse, ill-proportioned specimen offensive to good taste. Cultivators generally love the ornamental and useful when combined. There are instances, however, when one cannot always do as he desires or what he thinks best. I know that often (in this country) where wall space or glass accommodation is limited, cultivators are obliged to yield to circumstances and to meet the requirements of those who employ them, and some three or four grand trees on a space, say of 70 feet or 80 feet long by 12 feet high, would not serve the purpose so well as if the number were increased, say, to half a dozen, as by the latter number one could have a far longer succession of fruit than with half the number of trees of larger size. For

market, matters are quite different, as by getting a great quantity ripe very early the profits are much greater than when late kinds would have to be waited for. For private consumption cultivators are generally requested to get fruit as early as they can, and supply it as late in the season as possible.—C. H., *Stirling*.

FLOWER GARDEN.

COTTAGE GARDEN FLOWERS IN SUFFOLK.

In some parts of England the roadside cottage gardens are very interesting. Especially is this the case with the many little gardens that belong to the numerous cottages upon Lord Tollemache's Helmingham estate. All of these cottages stand some 12 yards or 15 yards back from the road. A narrow path leads up to each, and there are flower borders on either side. Doubtless the little plots are well cared for, and they repay a thousandfold. What I recently saw in these little gardens would in the aggregate eclipse much that is done or seen in places of great pretensions. Among some of the old, but beautiful things which now charm all beholders and gladden the hearts of passers-by, the first place may well be given to the old Maiden's Blush Rose. It was seen in some twenty different gardens under varying conditions and aspects; in one place as a hedge dividing flowers from vegetables, in another as a great spreading bush—a mound of flowers, and also rudely trained against the house. In every situation it was simply beautiful. There were Monthly Roses, too—the old pink and the crimson—two fine old kinds still indispensable in the good garden. That neglected flower of gardens generally, the hardy Fuchsia, was seen to perfection, and what could be prettier than some of the great bushes of *Fuchsia globosa*, the pride of the cottage garden. Might not these Fuchsias also be more often seen in the larger gardens? The white Lilies were magnificent, and without the least trace of disease. In many of the gardens might have been seen tall and free-flowering masses of the Orange Lily. The Canterbury Bells, Sweet Williams, and Antirrhinums were in perfection.

One thing about the flowers in these cottage gardens especially noticeable was the self colours. The cottagers apparently have done with Sweet Williams what was recommended in *THE GARDEN*, July 6 (p. 16), namely, saved seed of fine pure-coloured types and grown them in quantity. I saw telling masses of a rich crimson kind; a white one in abundance was very pure, and a delicate flesh-coloured kind was charming. A generous spirit of friendly exchange has evidently long existed, for the good things were seen in many gardens, though, as a whole, all the gardens were dissimilar. Among Snapdragons, a pure white, a yellow, and a rich crimson were distinct and beautiful. A deep blue Canterbury Bell was frequently seen, and among other Bell-flowers, *Campanula pyramidalis* was fine in one garden, and *C. persicifolia* in many others in both single and double blue and white forms.

Malva moschata alba was simply grand, some of the plants being a yard high and as much through, although growing in a hot, dry soil. Thrift has recently been much praised as an edging plant. There were edgings of it here a foot wide, but its dense mats of green could hardly be seen, so profuse was the crop of flowers.

After passing many of these pretty gardens I came to one that had prim edgings of Box on either side of the path, with Pelargoniums thinly placed in the borders, and much bare

earth between. The contrast was very strong, but further comment is needless. There is much to be learned from these little gardens as seen in their glorious summer dress, because it is at this time of the year in the larger gardens that flowers, especially hardy ones, are few, for the spring things have passed away and the late summer and autumn flowers are not yet come. These blank times ought not to occur, for somehow or other the cottagers manage to have flowers in their little plots nine, or even ten, months in the year. In these same little gardens I saw last April handsome tufts, some 2 feet in diameter, of a yellow-flowered, mealy-leaved Auricula, this being the most conspicuous. Without a doubt the autumn flowers in these little gardens will be as distinct and variable from those of the present time as are the summer flowers from those of the spring. If we had large rich beds and borders and grew in quantity the flowers the cottagers grow singly, then we should have interesting and beautiful gardens instead of the usual so-called flower gardens with their monotonous round of scarlet, yellow, and blue. A. H.

NOTES ON HARDY PLANTS.

Oyster Plant (*Mertensia maritima*).—I have more than once in these notes referred to this beautiful plant. When well cultivated it presents a very different and far more ornamental effect than one would suppose from seeing merely wildings. In what respect, I should like to know, is it inferior to the rare and much sought after *Omphalodes Luciliae*? Its flowers are very similar, and a well-grown plant is really more effective. The leaves are thick, glaucous, and nearly blue, and this glaucous tint does not get stained by the weather, as in the glaucous-foliaged Funkias. It never looks better than when planted in deep rich soil, but so that its flower-stems, which are 18 inches in length, can hang over rocky stones. There are so many unusual features about it that it never fails to interest the whole summer long. It grows well in a mixture of rubble and the rich stuff from an old Cucumber bed. Having had a good stock of plants to experiment upon, I tried all the usual methods of propagation, but failed. When, however, the plant was allowed to scatter its own seed among sand the seed germinated freely, and last year seedlings came up by hundreds. The seed is a long time in ripening, the outer or succulent part of the pod requiring to be thoroughly dried up.

Spatium (*Lewisia rediviva*).—Why has this remarkable and charming little plant almost gone out of notice? It is true that when the flowers open the other portions of the plant curiously shrivel up, but still the flowers are matchless, the plant unique, and of more than ordinary interest. As it takes but very little space on a sunny rockery, is easy to establish, and perfectly hardy, it surely deserves a place in the collection of hardy plants. I have a batch which has stood the past winter under more than ordinarily trying conditions, and though for a long time the plants escaped notice, they almost startled one during the bright sunshine of yesterday, when the big white satiny flowers suddenly opened. I find these plants do well in burnt clay.

Dryas Drummondii.—As in most cases this is easily propagated when once the right method is found out, I by no means profess to have made a discovery, but I wish to say that although with many others I have long tried to get young stock from this species by slips—as we easily get it from *D. octopetala*—and with but rare exceptions have failed, I now find that seed-raising is by far the readiest means. If the seed, which is freely produced, be caught just before the awns begin to drop and be sown at once in sandy peat, it will vegetate in the ensuing spring. By this method I have at present a sturdy little batch, and I judge from the vigorous way in which the seedlings grow, they will make far better plants than slips.

Reid's Primrose (*Primula Reidi*).—Speaking of seeds, I am reminded of a pleasing result from an experiment with half-a-dozen pods of seed secured last year. We have just pricked off 200 seedlings, and the seed-pan may yet yield a little later on as many more. When sowing the seed I had little hope of its germinating, because it was perfectly green. It seems, however, to have answered. The reason why I gathered it in that state was because the scape became rotten under the umbel. I afterwards took the precaution to leave the seed dry in the seed-pan for a week or two, in the same way as I do with nearly all the *Caltha* and *Ranunculi*.

Tufted Horned Rampion (*Phyteuma comosum*).—A specimen of this is now beautifully in flower. The plant was stood on one side last autumn, has been fully exposed to all weathers and during the recent drought to full sunshine, and though the roots are only in a small portion of soil with chips of limestone, but with the pot placed inside another pot 2 inches larger, the plant has not only succeeded, but the flowers are the finest I ever saw. The hint I have taken and the one I wish to impart is, that this plant is a decided lover of exposure and dryness.

Aciphyllas.—It is puzzling to know what the peculiarities of these plants are that render them such favourite prey for various insects. The green-fly seems very partial to them; no plants are more plagued by cuckoo-spit; caterpillars are with difficulty kept off, and slugs are sure to find them. It must have struck everyone that the hard character of the foliage, and also its sharp edges and points, would render the plants anything but convenient feeding-grounds for these pests. On examining them, however, they are found to be very susceptible to injury, and to be marked by spots where attacked by aphids. The slugs seem to find food in the thin skin, which they eat off. I find it necessary to use soapy water freely; this is quite an effective remedy, and evidently acts as a slight stimulant to growth.

Woodville, Kirkstall.

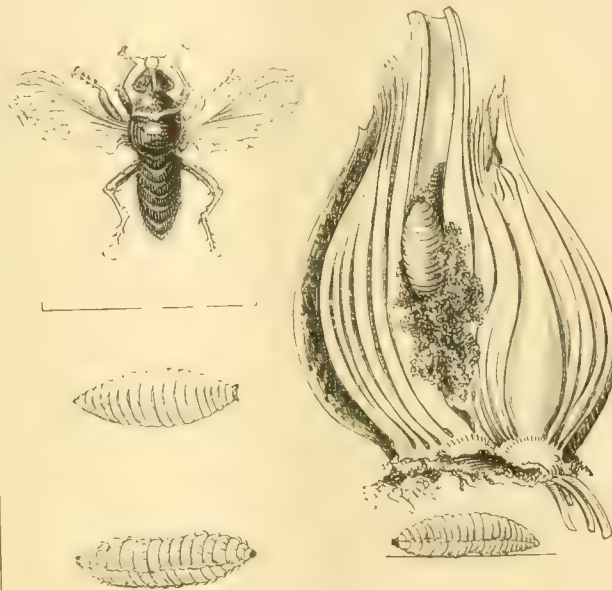
J. Wood.

Plantain Lily (*Agapanthus umbellatus*).—Few plants are more striking than this or more easily grown, and yet it is very rarely met with, although it is no new introduction, as it has been known in this country during the last 200 years. Like many other good old things, its place, however, has been usurped by fresh comers. Several varieties have originated from the species, and these most probably have been obtained from sports, as it is seldom that the plant seeds out of doors with us, and not often under glass. Besides the normal type, that produces blue flowers, there is a white kind, but this is a weaker grower and not very desirable. *A. umbellatus maximus*, as its name implies, is a vigorous variety that produces large flowers, and some years ago a double form was sent out, the blooms of which are more lasting than those of the single kinds, and the plant is of strong habit. *A. umbellatus foliis variegatis* affords a most pleasing contrast when in flower, the white bands on its leaves showing up finely with the blue of the petals. Plants of this and the species are very cheap, and the way to increase them is by division, which may be effected at almost any time, the safest period, however, being just when they start in the spring. As the *Agapanthus* forms such masses of root, it is almost impossible to pull plants apart, and they should be cut through so as to secure a crown or shoot to each piece. If these are potted and put into a warm house they will soon break at the base and make good plants. The soil most suitable to grow them in is a mixture of loam and leaf mould, and the pots should be well drained, for though the *Agapanthus* is half aquatic in habit it is important that the water pass freely through. When fully established, the plants may, with advantage, be placed in shallow pans as soon as growth becomes active, as then they absorb much moisture, and there is no fear of the soil becoming sodden and sour. In the case of old plants that do not get repotted annually, the pots they are in often get split, so great is the pressure of their roots on the sides, and it is a good plan before this takes place to run a

stout piece of wire round just below the rim, and thus stop the breakage. In mild winters the *Agapanthus* will live outdoors, but it is well to protect by packing half rotten leaves around the crown.—S. D.

NARCISSUS BULBS DYING.

IN connection with what has already been said on this subject by Mr. E. Colville, at p. 6, and by Mr. C. W. Dod, at p. 19, I should like to ask if either of these cultivators have lost bulbs by the ravages of the grub of the *Narcissus* fly? I have found a few bulbs this season affected, and saw many in a neighbouring garden. The grub feeds on the heart of the bulb and checks its root and top growth, and finally eats its way out near the base. It may be detected by squeezing the neck of the bulb, and if it feels spongy and soft the grub is frequently found inside, a fat dirty yellow thing nearly half an inch long. We found odd examples in 1887, and this year they seem more plentiful, or perhaps we are more on the alert in our search. If this pest can exist in Ireland, it should be carefully searched for in England, where the



The *Narcissus* fly (*Merodon equestris*).

climate in summer is as a rule more favourable to its development. It has long been a trouble to the Dutch bulb growers, from whom presumably it found its way to our gardens inside imported bulbs. The history of the *Narcissus* fly and its effects may be found in the *Gardeners' Chronicle*, 1877, p. 699 (woodcut), in *THE GARDEN*, Vol. VIII, p. 363, with a woodcut figure, in "The *Narcissus*," p. 19, and Mr. C. W. Dod gave a very interesting review of Dr. Ritzema Bos' monograph, entitled "La Mouche de *Narcissus*" (*Merodon equestris*) in the *Gardeners' Chronicle* for September 12, 1885, p. 338. Our engraving shows this insect in all its stages. Those who purchase imported *Narcissi*, or those of home growth, should test them by feeling the necks of the doubtful-looking bulbs before planting. In some cases I believe the existence and development of this new pest to our gardens has been fostered by the growing of *Narcissi* in pots for forcing into early bloom.

The main point now is whether we can check its development by artificial means. The fly is hatched in May, and may be caught by plates of treacle, around the edges of which a little honey has been smeared as a bait. The simplest

and best remedy suggested by Dr. Bos is to immerse in water all affected bulbs for eight days before planting. The eggs are laid by the fly in May or June presumably in the old hollow flower-stalks, or at the bases of the leaves at the neck of the bulb. In July or August, when at latest the bulbs ought to be potted or planted, the larvæ are small and have done no material injury, and the eight-day bath is almost certain destruction to the insect, while doing no harm, but possibly some little good to the bulbs.

It would be interesting to know if this pest has made much headway in England. Mr. Dod and other cultivators have expressed an opinion that the *Merodon* could not effect and maintain a permanent footing in England, but if it can do so in Ireland and in Holland, why not in Lincolnshire or in the south of England generally?

As to the so-called "rot" in *Narcissi*, I feel sure it is induced by crude manures, more especially on cold, damp soils. The remedy is annual transplanting in July. Old-established clumps of bulbs tightly wedged together and packed with their cast-off tunics are especially liable to this so-called "rot" even on light, warm soils.

There is a rather obscure affection to which *Narcissi*, especially Rush-leaved kinds, are liable, which Miller, Salisbury, and Haworth alluded to as "carrotty" bulbs. The bulb sends down thick and swollen carrotty roots, and itself shrivels and eventually dies away. A new leaf fungus has recently been observed as affecting our favourite flowers of spring, viz., *Puccinia Schroeteri*, an ally of the species which has crippled our *Hollyhocks* for years. With *Narcissus* bulbs at two to five guineas each, one gets nervous about the ills from which they may possibly suffer.—F. W. BURRIDGE, *Dublin*.

I am sorry Mr. Wolley Dod takes exception to my reply to Mr. Colville, but I can assure him that the *Narcissus* bulbs received by me were attacked by the bulb mite (*Rhizoglyphus echinopus*) and by snake millipedes (*Julus gattatus*), as I found specimens of them in the bulbs. What is *Arthonomus*? May be I do not know. I never heard the name applied to snake millipedes before. "A Rose by any name will smell as sweet," and I suppose a change of name will not transform a snake millipede from a destructive pest to a horticulturist's benefactor. I think Mr. Wolley Dod mistakes the centipedes, which are carnivorous creatures and move with great rapidity, for the millipedes, which are vegetable feeders, and are very sluggish in their movements. The former are, no doubt, very beneficial in gardens. I have never seen them attack a live slug, though I believe they do, but I have seen them feeding on slugs which I had killed. As to the cause of death of the *Narcissus* bulbs, it is quite possible, and I think most probable, that there is some other factor in the case, as I received a bulb said to be attacked by the "rootless disease," on which I could find no mites nor insects of any description, and the bulb appeared healthy, but there were no roots to it. It arrived in the condition in which it might have been bought in the autumn at a shop.—G. S. S.

East Lothian Stocks.—Among the choice flowers for the decoration of show-houses during summer and onward, or for planting in the open ground from pots, few plants give a better return than *East Lothian Stocks*. At the present time these are doing good service and have been in

flower more or less since they were lifted from the borders during last November. The seed is sown during August, sheltered in a frame, sometimes only with wirework fastened over the plants, and mats used when the frost is severe. They are planted out during April or May, and they come into bloom during June. After flowering freely till the end of the season they are lifted, potted and cared for as indicated above. Calceolarias, Golden Gem in particular, are also gay decorative plants from April to July when treated like the Stocks.—C. H.

FLOWER GARDEN NOTES.

SUMMER BEDDING.—I have lately visited three gardens of large size, and have been greatly disappointed with each in respect of this branch of flower gardening, because in no one case has a step in advance been made on that which prevailed a dozen or fifteen years ago, except that Calceolarias have been eliminated in favour of a greater number of Pelargoniums and Lobelias, both of them excellent in their way, but when used here, there, and everywhere, no matter how great their beauty, the effect, to a lover of flower gardening for its own sake, is depressing in the extreme. To this lack of variety of plants I regret to have to add that of bad arrangement. In one case there was a large mass of *Perilla nankinensis* surrounded by the dark crimson Pelargonium Henry Jacoby, and not a plant of any other kind or colour to break the even surface of the plants or relieve the immense breadth of bronze and red. The only redeeming quality in any of the bedded-out gardens in question was that in two of the cases variegated Geraniums were freely used with the other kinds, and in one instance white-flowering kinds gave character to the others. I contend that at this period in the history of gardening such summer arrangements of flowering plants can only be the result of want of thought, or of pure carelessness in regard to appearances, so long as the beds are filled out. It is to be hoped that for the credit of gardening generally such practitioners will soon get out of the ordinary routine and introduce more variety and beauty. In some parts of the gardens there were hardy flowers, a sign that increased attention is being given to them.

COLOUR MIXTURES.—From the foregoing it might possibly be thought that I object to high colours, which is certainly not the fact. The only objection I have to them is that they are generally used out of all proportion to others, and in such large masses as to make them conspicuous at the expense of the quieter colours. I think the right way to use high colours is in mixture, beginning with crimson and intermixing all the various tints of red to deep orange. Such an arrangement we have in a bed that is planted entirely with tuberous Begonias, surrounded with a broad band of variegated Mesembryanthemum, a colour that harmonises perfectly with such high-coloured mixtures. Colours that are most lasting, or, in other words, give most satisfaction, are the softer hues of blue, grey, cream, white, pink, and brown. The following plants, intermixed in proportion of equal numbers of each, make, in my opinion, the very ideal of a colour mixture for summer bedding arrangement: *Ageratum*, light blue or grey; *Viola Countess of Hopetoun*, creamy white; Pelargonium Pink Christine, *Agathæa cælestis* (blue Marguerite), white Lobelia, and dark blue Heliotrope, the whole surrounded with a broad band of *Alternanthera* and variegated Mesembryanthemum. Should any colour predominate, that is, appear to overweigh the other colours in the bed, the removal of part of the flowers will remedy the defect. I have found it necessary to practise this sort of curtailment to-day owing to the white *Viola* above mentioned overrunning the dwarf *Ageratum*. Darker mixtures of colour than the foregoing may be preferred by some, in which case *Coleus*, *Iresine*, and rose-coloured Pelargoniums may take the place of the darker blues, but whichever shade of colouring is used it is necessary to keep it in proportion.

PHLOX DRUMMONDI.—These flowers are remarkably rich in variety of colours. I do not know into

how many sections the florists or seedsmen would divide the *Phlox Drummondii*, but I shall only make two, namely, tall and dwarf. The latter are truly wonderful, as frequently a single plant, which often does not exceed 6 inches in height nor more than 8 inches across, is literally a mass of flowers and continues to bloom in the same way all the season, notwithstanding the fact that the growth of the plant is so small, and the colour of the flowers is just as varied as in the tall-growing section, and ranges throughout all the shades from pure white to dark crimson. For the most part the flowers of this dwarf section are self-coloured, the exceptions being striped rose and white, violet and white, and salmon and lilac. The habit of the plants makes them valuable for edging beds of the tall kinds, and they are of equal value for planting by themselves in small beds. The flowers of the tall or rambling growing kinds are of immense variety, self colours and variegated, and of every conceivable hue. They can be bought in separate colours, but I prefer a mixture of all for two reasons, first, because of the saving of labour there is to keep the colours separate; and secondly, they look best in the mass. We have them planted in that way, and some amongst Roses and herbaceous plants. Being of straggling habit of growth they need an occasional pinching of the shoots to induce the formation of lateral growth, and they bear pegging down well; this is necessary when planted amongst Roses. W. W.

SHORT NOTES.—FLOWER.

The best white border Carnation.—Will any reader of THE GARDEN kindly say which is the best white border Carnation?

Salvia patens alba.—This is a novelty in Mr. Laing's nursery. It has flowers exactly like those of the typical plant, whose lovely blue flowers are always admired. The variety under notice, as its name implies, however, has pure white flowers.—W. H. G.

Nymphaea rosea.—Can any of your readers inform me if the Swedish red Water Lily (*Nymphaea rosea*) is very superior to the American? There is very considerable difference in price, but increase of price does not always represent a proportionate increase in appearance. Are they both equally hardy and equally easy to cultivate?—G. J. BLOMFIELD, Norton Rectory, Stoke-under-Ham, Somerset.

Lilium candidum—This useful Lily need not be expected to attain any great perfection until it becomes established for two or three years. When once established it increases rapidly, as four years ago I planted a bed with the bulbs 15 inches apart and now the whole surface is bristling with them. I am further of opinion that all Liliiums are most satisfactory when left undisturbed in the same position year after year. J. MITCHELL.

Pure white Sweet William.—Those who require an abundance of white flowers for cutting should bear in mind the merits of the white-flowered forms of this hardy perennial. I think it would be wise if some large growers of this flower would select the best white-flowered forms, with a view to their improvement by the constant raising of seedlings. In time something very good would probably be obtained. Almost the prettiest bunch of hardy flowers I have seen this year was composed principally of white Sweet Williams, taken from a cottager's garden with enough dark selfs to show them up.—J. C. B.

The Burning Bush (Dictamnus Fraxinella).—In THE GARDEN of May 25 I noticed an article from C. Wolley Dod, Edge Hall, in which he asks if anyone has ever witnessed the phenomenon mentioned by "D. K." on page 458 concerning the *Fraxinella*. I have had a plant (one of the white variety) in my garden for years, and have frequently entertained my friends by applying a lighted match to the blossoms and seeing the flash which followed. I never knew the experiment to fail if tried on newly opened blossoms; old ones sometimes fail to respond.—A. M. PILTON, Cambridge, Mass., U.S.A.

Phloxes at Forest Hill.—These beautiful border plants were a short time ago largely grown at this nursery, and I am glad to find Mr. Laing is re-

turning to his old love. Many fine kinds will shortly be seen here. But at present the pure white flowers of *Snowflake* are the most conspicuous. As a white-flowered border plant it cannot be surpassed. *Liberté* is another kind of great beauty, with flowers of a rich, deep salmon and purple centre. *Robur* has very large trusses of rich, deep rose-coloured flowers. *Aurore Boréale* is deep orange-vermilion with a bright purple centre. These and many others are now in great beauty.—W. H. G.

THE POPPY.

The Poppy family is not large, but the beauty, distinctness, and easy culture of its members atone for their comparative fewness, as there are only about 14 species, and these either hardy or half hardy, perennial or annual. The genus is widely distributed. We have four British native Poppies and one true Opium Poppy that has become naturalised in some parts, while there are also representatives in North Africa, Asia, Europe, one in South Africa, and another in Australia. There are few genera of plants more readily grown than the Poppy, as they will thrive in almost any soil—sandy loam for preference—and they can be easily raised from seeds or propagated by division of the roots. Such kinds as the Oriental Poppy and its several varieties make splendid single clumps on the lawn, rougher parts of the pleasure grounds, or in the wild garden. From the dwarf, slender *Papaver alpinum*, or alpine Poppy, to the flaming Oriental species, there is a rich variety of kinds, some of medium height, others tall, and adapted for various positions in the flower garden. The Poppy that forces itself upon our attention during the month of June is *Papaver orientale*, a flower known to all who care to have gay gardens in early summer. It is a distinct type of perennial plant, noble in two ways—for the glorious colour, size, and richness of its flowers, and for the luxuriance of its bold, strikingly characteristic, glaucous leaves. Its flowers are peculiarly rich and remarkably effective in various lights. The type is a native of Armenia, from whence it was introduced early in the sixteenth century; and there are several varieties of it, as within the past two or three years the hybridist has been working to produce new forms and colours. But there are none so rich and striking as *bracteatum*, a very fine variety from the Caucasus, having been introduced from there early in the present century. Its gaudy flowers are of a flaming scarlet, enriched by the deepest black blotch at the base of each of the petals. It grows about 4 feet high. *Pink Beauty* is quite of a different shade; the flowers are pink, and compared with those of the other types weak and washy. *Præcox* is another good kind. There is one thing the flowers of this Poppy are of no use for, and that is for cutting; their heavy penetrating opium scent is overpowering and injurious in a room. We have seen many fine clumps of the Oriental Poppy in gardens. Any strong soil will suit the plant; and it is one great point to have as luxuriant a mass of foliage as possible. There is a wide difference between the Oriental group and the pretty little Iceland Poppies, which are amongst the most charming flowers of their season. A large patch of the several varieties was in full bloom recently in the Broxbourne nursery of Messrs. Paul and Son, and with the colours intermingled together a rich contrast is obtained. The plants are well grown, flower for a long period, and not only make bright clumps on the rockery, but may be used for edging beds. The seed if sown early will produce plants that will flower the same year; and it is worth growing them on rich soil. The type grows from 12 inches to 15 inches high, and is a native of Siberia and North America. It is a lovely mountain alpine, and there are white, orange, scarlet, yellow, and tender sulphur-coloured forms, the purest, simplest and best being the clear white, which, associated with the fine yellow variety, is very beautiful. It is not unlike the Welsh Poppy (*Meconopsis cambrica*) in general character, and certainly suffers nothing by comparison with a flower of such tender beauty. It is best to raise plants every year, as although perennial in character, they do not appear to be

very permanent. Of the pretty alpine *P. alpinum* it is not necessary to write much. It is very like *P. nudicaule*—the flowers white with yellow centre, but it does not succeed everywhere. A collection of hardy plants cannot be considered complete without it.

The annual Poppies are amongst the most beautiful of all. The common Corn Poppy (*Papaver Rhæas*) has given rise to a number of handsome flowers, as the Carnation, Picotee, and Ranunculus-flowered types, all having double blooms of great density and variety of colouring. The varieties japonicum and Hookeri are cultivated in foreign parts, the first of the two being grown in China and Japan and the other in Cashmere. Apart from these, we have a charming selection, and few are nobler, or give such a choice of delicate and pronounced shades of colour, than the Carnation, Picotee, and Ranunculus strains. The seeds can be sown in spring, and there need be no fear that the plants will not come up, as the varieties have retained to the full the exceptional reproductive powers of our own beautiful pest of the English cornfield. In one garden we were in last summer there was a rich collection of Poppies, and amongst them varieties of *P. Rhæas*. Few flowers could have given more delight of an uncommon kind, as the flowers are seldom the same, each one showing some difference, a few finely variegated. Although the plants will grow almost anywhere, a good soil brings out the characteristic beauties to the fullest perfection; and one great point, as in the case of all annuals, is to sow the seed thinly, especially as it is very small. Scatter it carefully in semi-wild spots, by the side of drives, woodland walks, or in any place where the flowers are likely to show well. The brilliant Caucasian *P. caucasica* is a neat little annual, and regarded as a form of our own wildling. It grows about 2 feet high, and during the summer is a mass of flowers of the most glowing crimson, quite as intense as those of *P. bracteatum*, each petal having a deep black blotch at the base of each. This is comparatively new, having been introduced about the year 1877. The seed should be sown in the autumn thinly in rows or round the edges of beds, and then healthy, vigorous plants will be obtained for flowering the following summer. It forms a succession to the brilliantly coloured *Anemone fulgens*. There is a strain of flowers of exceptional beauty raised from *P. Rhæas* by dint of great perseverance and watchfulness. This group is known as the Shirley Poppies, and were brought to their present beauty by the Rev. W. Wilks, who some years ago noticed in his garden a strong flower of the common field Poppy with a narrow edge of white. This was the forerunner of a beautiful series of flowers. They were exhibited last year at some of the shows, and it would be difficult to find a strain of flowers so tender in colour, frail, and beautiful as these. They display a purity and novelty of tint as fresh as it is delicate. The pale pink and flesh-coloured flowers, with a margin of white, are exquisitely charming. It is, of course, necessary to banish every flower that at all affects the purity of the strain from the garden, as it has only been by a rigid course of selection that the flowers have been kept pure and true. The Opium Poppy (*P. somniferum*) is another variable and beautiful flower, of which the outcome has been the strain known as Peony-flowered. This annual grows about 3 feet in height, and is distributed in Europe, Asia, India, and Africa, and is naturalised in England. The large globular heads of the double varieties give a considerable variation in colour, from white to rich crimson, and occasionally striped in an attractive way. A bold mass of the Peony-flowered Poppy makes a rich effect in the garden, and there is not the slightest difficulty in raising the plants from seed. The opium of commerce is derived from this plant. The Danebrog Poppy is of the same character; also the strain known as Murselli.

There are other Poppies besides these, but there are very few who require a full collection of all the known kinds of hardy Papavers. Those that have been described are the choicest of the family, and

from the pretty alpinum to the most readily grown annual kind they are all worth space in the garden.—C., in *Field*.

TREES AND SHRUBS.

CLADRASTIS AMURENSIS.

This little-known tree is very distinct from its nearest ally, the Yellow Wood of the United States (*C. tinctoria*), and though certainly far less showy than many of our hardy trees and shrubs that flower during the month of May and the earlier half of June, the fact that this does not bloom till towards the end of July or early part of August increases its value. *C. amurensis* is, as its name implies, a native of the Amoor region, and is perfectly hardy in this country. It was introduced into England through the Russian botanists who have made us familiar with so many plants that are natives of North-eastern Asia. In its native country it is said to form a small tree 40 feet in height, with a trunk 6 inches in diameter, but from the circumstance that it is of quite recent introduction, no very large specimens are to be met with. It is, however, very free blooming, for specimens not more than 6 feet in height flower freely. The *Cladrastis* forms a low-growing, much-branched tree of a spreading character, clothed with pinnate leaves, which, when unfolding in the spring, are covered with a peculiar silky pubescence, which gives it then a most uncommon appearance. The flowers are borne in erect, densely-packed racemes, and though the individual blooms are small and of a whitish hue, from their numbers and season of expansion, they stand out most conspicuously. The Amoor *Cladrastis* is a good subject for planting in dry, sandy soils, as it will flourish therein better than many other trees, but of course it does not grow so quickly as under more favourable conditions. On its first introduction this tree was more generally known under the name of *Maackia amurensis* than that of *Cladrastis*, but it is now considered to belong to the latter genus. A distinctive feature belonging to it is the way the bark peels off in good-sized flakes.

The older and better known kind, *C. tinctoria*, is a native of North America, and is a remarkable illustration of the affinity that exists in the vegetation of the two continents. The Yellow Wood, as the American representative of the genus is called, is a very striking tree, whose ornamental qualities rank even higher than those of the preceding, but as it flowers at a time when many other trees are at their best its beauty is then not so noticeable. It is, however, a handsome lawn tree, well furnished with cheerful foliage, which dies off in the autumn of a bright golden hue. The flowers are larger than those of *C. amurensis*, pure white in colour, and borne in drooping instead of erect racemes. A synonym of the North American *Cladrastis* is *Virgilia lutea*, under which name some good specimens are to be met with in different parts of England, notably at Kew and Claremont. In its native country it is said by Professor Sargent to be found from Central Kentucky on the banks of the Kentucky River south, to Middle and Eastern Tennessee.

T.

Pernettyas on clay.—“J. B. W.” (p. 29 July 13), referring to my remarks upon these shrubs, expresses surprise at my statement that they have killed Hollies. Such, however, I beg to assure him, is the case, the varieties or species which have succumbed being *I. crassifolia*, *I. microphylla*, and Silver Milkmaid. These shrubs were planted years

in advance of the *Pernettyas*, and had attained to a height of 8 feet or 10 feet before the latter made their light-and-air-excluding influence over the roots of the Hollies felt. I did not intend to convey the impression that the *Pernettyas* had overtopped the Hollies, but if I have failed in expressing myself, I must ask your readers to excuse me. I need not inform a correspondent of “J. B. W.’s” experience that the largest and tallest trees and shrubs can be literally smothered and done to death by having a dense covering placed over the roots and round the lower parts of the stems. This air-and-warmth-excluding covering may consist of soil, as sometimes happens when would-be landscape gardeners are levelling up and old trees are found on too low a level. The cause of death in my case may be set down to the *Pernettyas* which have formed a surface-covering through which certain elements essential to plant-life could not penetrate.—W. C.

CHAMÆCYPARIS SPHÆROIDEA.

(THE WHITE CEDAR.)

THIS fine evergreen tree is indigenous to North America and Canada, where it inhabits damp, swampy ground, and is said to attain a height of from 70 feet to 80 feet. It was introduced into this country about the year 1736, and was known by the name of *Cupressus thyoides*, or *Thuja*-like Cypress. In this country it has never reached the dimensions given above, but although it is unsuitable for growing as a timber tree for profit in this country, it is very ornamental, and well worthy of a place on the lawn as a standard or for mixing with other medium-sized trees and shrubs. When the wood is cut up it is found to be rather soft, but finely grained, easily wrought, and capable of resisting the extremes of drought and moisture in a remarkable manner. It thrives best on soft deep soil. The general contour of the tree has a strong resemblance to that of the *Arbor-vitæ*, the habit being close and bushy, sharply conical, and well furnished with short, twiggy branches of a lively green colour.

THE GLAUCCOUS WHITE CEDAR (*C. glauca*) forms a beautiful specimen for a small lawn; its habit of growth is sharply conical, very compact, and densely furnished with branches and small twigs, which are well clothed with foliage of a bluish green or glaucous colour. It is very distinct and highly ornamental, and well worthy of cultivation.

THE VARIEGATED WHITE CEDAR (*C. variegata*), when well grown, is by far the finest ornamental tree of the whole tribe. Like the species, it delights in a deep moist or boggy soil; in fact, the finest specimens of these trees which I have ever seen are growing on Irish peat-bog, mixed with a little common soil. It is quite hardy, but when planted on exposed situations it is apt to be injured by rough winds. It is one of the finest of the variegated Conifers, its branches and twigs being well clothed with foliage of a yellowish golden colour, intermixed with green. The tree is strictly conical in shape, and when well established it forms a very handsome and attractive specimen, well fitted for planting singly in situations where the grounds are of limited extent.

THE FRANKINCENSE WHITE CEDAR (*C. thurifera*).—This is a native of Mexico, where it is said to form a tall tree with pendent branches. In this country it has a great resemblance to *Biota orientalis*. It likes a deep rich soil, and is worthy of a place in all extensive collections. In its native habitat it is found at an elevation of upwards of 5000 feet above sea level. J. B. W.

Fagus betuloides.—Does not A. D. Webster, p. 27, confound the evergreen Birch-like Beech with the true deciduous Antarctic Beech? *F. betuloides* is a by no means uncommon evergreen shrub in British gardens, but the true *F. antarctica* I never saw. Both are figured in Hooker’s “*Flora Antarctica*,” tt. 123-24, and in Nicholson’s “*Dictionary of Gardening*,” vol. ii., p. 3, the two kinds are described as distinct from each other. There is a good specimen of *F. betuloides* at Powers-

court, Co. Wicklow, about 12 feet in height. Will Mr. Webster favour us with the size of the two fine specimens to which he alludes (p. 27)? *F. betuloides* is or was known as *Betula antarctica*, a name not now adopted.—F. W. BURBIDGE, *Dublin*.

SPIRÆAS IN FLOWER.

COMMENCING early in the spring with the pretty white-flowered *Spiræa Thunbergi*, a continual succession of bloom has been maintained from then until the present time, when we have still many distinct forms in flower. First and foremost now must be mentioned the *callosa* or *japonica* group, of which there are several varieties now in our gardens. That regarded as the typical form is an upright bush, reaching a

blossoms. A pretty form bearing a good deal of affinity to *S. japonica* is *S. Bumalda*, which seldom exceeds 2 feet in height, and whose bright pink blossoms are borne in such profusion as to almost cover the upper part of the plant. Two very select *Spiræas* now in bloom are known as *S. Fortunei* (which is a synonym of *S. japonica*) *paniculata* and a deeper coloured form, *paniculata rubra*. Both bear their flowers in large panicles, instead of a flattened corymb, common to the rest of the *S. japonica* section. The North American *S. Douglasi*, with its dense terminal spikes of rich pink blossoms, of which a coloured plate was given in THE GARDEN, March 17, 1883, is now flowering profusely, as well as the allied *S. salicifolia*, which is in a wild state very generally distributed throughout the



Spiræa Fortunei paniculata.

height of 4 feet to 6 feet, clothed with lanceolate leaves, which when young are tinged with crimson, while the bright rosy-red blossoms are borne in flat corymbs. Individual plants of this vary a good deal in the colour of their blossoms, some being much deeper than others. The finest forms are sometimes met with under the names of *rubra* and *superba*. A light-coloured variety (*pallida*) is also well worth a place, by reason of its being so distinct in colour from the others. The pure white-flowered variety differs from the type, not only in the colour of the blooms, but also in being of a dwarf compact habit, and without any of the reddish tinge in the foliage. This also continues to bloom later in the season than any of the rest; indeed, it is usually the last shrubby *Spiræa* to unfold its

northern parts of Europe, Asia, and America. It is a good deal like *S. Douglasi*, except that the flowers are usually of a pale pink or whitish hue. Several others that have bloomed earlier in the season are again flowering, but of course not to the same extent as before, though some plants of *S. hypericifolia* or a variety thereof are still very pretty. *S. Lindleyana*, remarkable for its large pinnate leaves and loose branching panicles of blossoms, is one of the best of the late-flowering *Spiræas*. The last to mention is one now in full bloom, viz., the little *S. bullata* or *crispifolia*, which forms a dense mass not more than 1 foot high, every twig of which is terminated by a cluster of its pretty carmine-pink blossoms, which in the bud state are crimson. It is more fitted for planting in a nook of

the rockwork than for holding its own among a mixed collection of shrubs. T.

FLOWERING SHRUBS AT FOTA ISLAND.

MAGNOLIA GRANDIFLORA.—This very handsome shrub is now in bloom, its large white flowers scenting the air for a long distance around. It may be grown either as a standard or against a wall. I find that it flowers most profusely on walls.

GIANT GUM TREE (*Eucalyptus amygdalina*).—This is now covered with its small white flowers, which seem to give food to thousands of bees. They are busy amongst its flowers from morning till night. This tree is about 50 feet high and perhaps has been planted about the same number of years. Its height is not at all in proportion to the size of trunk, and the reason is that it is exposed to west winds, from which we suffer most, being near the sea.

EUCALYPTUS COCCIFERA.—This came into bloom a little earlier than *E. amygdalina*, but here it does not grow into such a nice tree as that species. The flowers differ but little from those of *amygdalina*, but the leaves are much lighter in colour, which makes it a pleasing object amongst trees and shrubs that have dark green leaves.

WHITE-FLOWERED INDIGO PLANT (*Indigofera floribunda alba*).—This is a gem amongst white-flowered shrubs, and has now a long raceme of its pretty flowers on every twig. It should find a place amongst the most select of hardy shrubs. If a favourable season occurs for its growth it will flower again in autumn.

AUSTRALIAN TEA TREES (*Leptospermum grandiflorum* and *L. lanigerum*) are two small white flowering shrubs from Australia and now in fine flower. They thrive best in a mixture of peat and loam, and where hardy should be much grown, not alone for the flower, but for the habit of the plants.

JASMINE NIGHTSHADE (*Solanum jasminoides*).—This is a most desirable quick-growing trailing shrub, which in favourable positions will soon cover a wall. Here it flowers continually for several months, or until destroyed by frost. I find the flowers most useful for dinner-table decorations.

CHINESE JESSAMINE (*Rhynchospermum jasminoides*) and **Chili Jasmine** (*Mandevilla suaveolens*) are now in flower here on the open wall. Both have white flowers, those of the *Mandevilla* being very sweet scented. W. O.

Fota, Cork.

SHORT NOTES.—TREES AND SHRUBS.

The Purple-leaved Barberry is a fine dark-foliaged shrub, the leaves shaded with a soft glaucous colour, like the bloom on a Plum fruit. It makes a good foreground to shrubs with deep green leaves, or clumps on the turf give distinct breaks of colour.

Variegated Weymouth Pine (*P. Strobus nivea*) is not spotty, like many variegated plants, trees, or shrubs, but of a distinct yellowish tint that suffuses the whole of the leafage. A specimen used occasionally and judiciously in the garden would not be amiss, but we always counsel caution in the use of variegated plants of any kind. A batch of it was growing freely by the side of the type in the Waltham Cross Nursery.

Smoke Plant (*Rhus Cotinus*).—This will be for some weeks to come the charm of the shrubbery. What can be more beautiful than a dense, spreading bush of this Sumach, veiled in the rich feathery clusters which succeed the small and inconspicuous flowers? Unfortunately, it is quite by chance that one happens to see a good specimen. It is one of the best of shrubs for isolating upon a lawn.—A. H.

Eucalyptus in bloom.—It may interest some of your readers to know that there is a small *Eucalyptus* tree in full flower here in the open air. It is, I believe, a Tasmanian species, the seeds having been sent from Hobart Town Botanic Gardens to Mr. Bartholomew, of Park House, Reading, through whose kindness I received the three plants now growing here. They were planted out in the summer of 1884, and have resisted all vicissitudes of weather since then, so they may be considered tolerably

hardy, *E. Gunni* and *E. coccifera* having succumbed to frost close beside them. The plants would now have been about 16 feet high, but they grew so rapidly that they were unable to support themselves, and I have been obliged to cut off the tops to about 8 feet, and they are sending out vigorous shoots close to the point of section. I send you a small specimen. Perhaps you will kindly let me know the specific name. The buds were formed last year, but only opened about a week ago. *Leptospermum scoparium* has also been in full flower in the shrubbery, and is a very elegant plant when in bloom.—B. E. C. CHAMBERS, *Crayswood Hill, Haslemere, Surrey, July 11.*

. The name of the *Eucalyptus* is *E. coriacea*.—ED.

EVILS OF GRAFTING.

THERE can be no objection in allowing some people to air their ignorance and their fads for the edification of people like-minded, but for the editor of such an important horticultural journal as *THE GARDEN* to fully agree with such erroneous and unprofessional doctrine is beyond all comprehension. I allude, of course, to the late articles on the "evils of grafting," with which a correspondent waxes wroth and recommends all to "avoid a graft as they would a rogue," a recommendation which I think will not be adopted by any of your intelligent readers who have any regard for beautiful trees and shrubs, and more especially for a good and plentiful supply of fruit. I have no desire to discuss the matter with Mr. Dickens, but as you say you would not plant any grafted ornamental trees or shrubs, I think you should state how they could be propagated without being grafted, especially trees that have a weeping tendency, such as *Ash*, *Limes*, *Beech*, *Hollies*, &c., and the named sorts of *Rhododendron* as well, of which there are thousands here from 1 foot to 20 feet without a sucker, and even should any such occur, they are easily removable without damage to the plant. There are near here magnificent specimens of *Conifers* 40 feet to 50 feet high, and numberless beautiful trees and shrubs, all grafted. As to fruit trees, I know of no other mode of propagating particular sorts to keep them true except by budding and grafting for supplying the immense demand at a reasonable rate, but if you know any other mode let it be made known by all means, and anyone who could do so would become a public benefactor. I submit that very few fruit and ornamental trees are the worse for being grafted, but many are actually improved, as must be well known to every intelligent gardener and horticulturist.—W. H. ROGERS, *Red Lodge Nursery, Southampton.*

. We allow Mr. Rogers to speak in his own frank way on this subject, but we notice he does not take the least notice of the evidence we placed before him in *THE GARDEN*. We can show Mr. Rogers the Quince coming up where we wanted a large colony of *Pyracantha*, and the Hawthorn choking a large group of *Medlar*. Flowering shrubs can be increased by layering, by seed, or by division. Many things, such as the dwarf Chinese Plum, which is grafted and soon becomes diseased in nurseries, are easily increased by division. *Rhododendrons* of the finer sorts are best increased by layers. If Mr. Rogers will not take the trouble to do this, others must and will. Once the public generally know the evil of grafted plants, there will not be much trade for "worked plants" of *Rhododendrons*. It is a trade way, but it is a bad way. There is as much occasion for grafting the *Pyracantha* or the *Medlar* as there is for putting one man's head on another man's body. The interest of the public is the true interest of the trade, and this sending out of flowering shrubs to die, or condemning them to a gouty and paralysed existence after they have got away from the nursery is a long-standing and serious evil, which the leading men of the trade ought to remedy. The sole exception we will admit as regards ornamental trees is, perhaps, in the case of weeping trees, though it is not established to our satisfaction that it is even necessary here. Even coloured trees and variegated ones are now raised from seed. But whatever we may

think of sports and forms like these, it is intolerable that beautiful things like the *Rose Acacia* are only to be found in our gardens growing on something else, and growing badly. We should like to have the nurseryman's evidence of this evil. Mr. Anthony Waterer, who, Mr. Rogers will allow, is not one of the people who "air their ignorance and their fads," tells us that so long as he grafted *Phillyrea Vilmoriniana* his experiences of it were more varied than pleasant. Bushes that he passed in perfect health one day died suddenly the next. It is not for nothing that the same Mr. Anthony Waterer, who has the finest nursery of hardy shrubs in existence, should be getting his hardest and best *Rhododendrons* on their own roots as quickly as he can.—ED.

MARKET GARDEN NOTES.

FAVoured by refreshing showers of late, the work of planting out all kinds of green crops for winter and spring has made rapid progress, while the sowing of seeds is being done under very favourable conditions. The principal crops at present claiming attention are—

CABBAGES, which form an important all-the-year-round crop. The young plants from seed sown in April are now fine sturdy stuff, and are being put out as fast as the early crops of *Potatoes* are cleared off. Sowing seed for plants to put out about Michaelmas is now being done. The seed is sown rather thinly in open sunny spots, and the beds are kept hand-weeded so as to get dwarf, stocky plants. The favourite sorts are *Early York*, *Wheeler's Imperial*, and *Early Rainham*.

BROCCOLI is being planted on land cleared of *Peas*, *Beans*, &c. The plants are allowed plenty of space, so that they stand quite clear of each other. Late plantations of *Autumn Giant Cauliflower* and *Veitch's Self-protecting Broccoli* are being made, as when severe frost keeps off until near Christmas these late plantations are very useful, as they prolong the supply up to within a short time of the early *Broccoli* coming in. The *Purple Sprouting* is extensively grown, as it is very hardy, and fills a gap when the tender white sorts get cut off. For the late supply *Carter's Champion* and *Cattell's Eclipse* are much grown. *Scotch Kale*, *Savoys*, &c., are put out as fast as the places are cleared for their reception, and are planted until very late in the season, as it is usually after the days have lengthened considerably that the greatest demand for green vegetables sets in. If the plants are very forward when winter sets in, it is much more difficult to prevent them being injured by frost, while half grown crops escape.

CELERY is being planted out in large quantities, the white varieties being mostly used for early crops, and the red for late ones. Although this crop delights in rich soil and abundance of moisture when growing, it is not advisable to over-do these things, or the heads become coarse and fail to blanch well. Single rows find most favour with market growers, and the plan of allowing the plants to get nearly full grown before any moulding up takes place is pretty general.

LETTUCE and **ENDIVE** are being planted out in quantity, and seed for main winter crops sown. The curled *Endive* is most largely grown.

ONIONS of the *Giant Rocca* and *Tripoli* kinds are now being sown, either for drawing green or standing the winter for transplanting. A good deal depends on the season as to the correct date for sowing, but the rule is to sow at two or three different dates, and plants that are too forward for transplanting are cleared off as green *Onions* for salad.

RADISHES for standing the winter are now being sown; the *China Rose* and *Black Spanish* are the kinds most used. They are allowed to grow to a large size before being pulled, and then find a ready sale.

TURNIPS for winter use are sown wherever there are any vacant spaces; the hardy *White Stone* and *Orange Jelly Turnips* are the favourites. If got in early fine crops are obtained, but even late sowings prove remunerative in a season when green crops are scarce in spring.

LEEKs are being put out on well enriched soil. They are planted in deep holes made with an iron bar, and are mostly in request in spring when the stock of *Onions* gets exhausted.

FRUIT GATHERING is now in full swing. The *Strawberry* season was a short one, owing to the heat and drought forcing the fruit so that it all came in at once. Sir J. Paxton still keeps the lead amongst old kinds, and Noble promises to be a great favourite when it is plentiful enough for field culture. Bush fruits are now being gathered in quantity. *Black Currants* are good, and *Red and White* are a good average crop and clean. *Raspberries* have failed to swell up to their usual size, the drought being too severe for the earliest fruit, but late ones will probably come on better, now that rain has fallen.

SUMMER-PRUNING is occupying more time and attention than formerly. The old orchard trees have been to a great extent replaced by dwarf trees, that yield much finer fruit. Thinning out and stopping the shoots of *Apples*, *Pears*, *Plums*, &c., mulching and watering are all indispensable to getting fruit of the finest quality. The *Early Apples* are nearly fit for gathering. *Juneatings*, *Quarrendens*, and other early kinds are sent to market directly they are of marketable size and well coloured, and *Lord Suffield* is already of large size. This is the best of all the early cooking sorts we grow, and hardly ever fails to give a good crop. I may add that *American blight* is very prevalent on *Apple* trees this year. *Red spider* also has been very troublesome, especially on *Plums* and *Damsons*. JAMES GROOM.

Gosport.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

July 23.

THERE was a small meeting on Tuesday, but the exhibition of the *National Carnation and Picotee Society* occurring on the same day, filled the hall with flowers.

FIRST-CLASS CERTIFICATES went to the following:—

SPIRÆA GIGANTEA.—The huge stem of this little-known *Spiræa*, shown by Messrs. Paul and Son, of Cheshunt, was the chief thing of interest. It is well named *gigantea*, as the spike of flowers alone is quite 4 feet high, and crowned with clusters of white flowers, which remind one of those of our common *Meadow Sweet*, but about four times the size. The whole plant is like a gigantic *S. Ulmaria*, the leaves palmate, broad, and deep green, the stem strong and straight. This *Spiræa* is a form of *S. kamschatkica*, itself a tall-growing species from *Kamtschatka*, but *S. gigantea* is even more robust. It is growing at *Broxbourne* in a moist soil, and its vigorous constitution and noble port suggest many good uses for it.

CORNUS SIBIRICA SPATHI.—A brightly-variegated variety of *Dogwood*, and hardy in the open ground, a point of importance in the case of a plant like this, in which the leaves are rich yellow splashed with green. It appears to have a good constitution, an abundance of leaves, and does not look "pachy." From Messrs. J. Veitch and Sons, Chelsea.

BOUVARDIA MRS. ROBERT GREEN.—A coloured plate of this will be found in *THE GARDEN* of March 30, 1889, and from it a good idea can be obtained of the beauty of this sport from *President Cleveland*. It originated with the exhibitor, Mr. H. B. May, of Edmonton, and is *President Cleveland* in everything but colour, which is a soft pink with a trace of salmon in it.

BIGNONIA CHERERE.—An old plant, too well known to describe. A coloured plate of it is given in *THE GARDEN*, Dec. 20, 1884. From Mr. F. Ross, *Pendell Court Gardens, Bletchingley*.

CYBTOMIUM FALCATUM FENSOMI.—A fairly well-marked variety of the type, the plants of vigorous

growth, producing an abundance of deep green fronds. From Mr. Fensom, of Tottenham.

PTERIS SERRULATA PLUMOSA.—This is the most distinct of the many forms of *P. serrulata*, and a good plant of it was shown by Mr. W. Coleman, Swiss Cottage, Tunbridge Wells. It is a peculiarly beautiful Fern with the characteristics of the type, but the fronds are much divided, and cut up at the tips so as to make a heavy tassel of pale green. The plant forms a rich fringe, and the fronds hang down gracefully, quite hiding the pot, and thus render it a suitable Fern for a hanging basket.

SOBRALIA XANTHOLEUCA ALBA.—This is a variety of a beautiful *Sobralia*, and the flowers similar to those of the type except in colour, which at the entrance to the throat is soft yellow, which is still lighter in the sepals, the petals being white. A choice and desirable form from Messrs. Veitch and Sons.

AN AWARD OF MERIT went to the strain of Sweet Peas shown by Mr. H. Eckford, Salop. The flowers are distinguished by a remarkable clearness of colour, strength and size, three qualities of the highest value in the Sweet Pea. Few men have done more for it than Mr. Eckford. Purple Prince, purple shaded with violet, is a good kind; so is Mrs. Gladstone, white, set off by a shading of soft pink; Mauve Queen, clear mauve; and Countess of Radnor, light mauve.

A BOTANICAL CERTIFICATE went to *Maxillaria fuscata*, a species with reddish-brown flowers; and *Dendrobium revolutum*, a small-flowered Dendrobe, lip greenish in colour, sepals and petals ivory white. Both came from Sir Trevor Lawrence, Bart., M.P.

A very fresh and representative collection of Roses came from Mr. Wm. Rumsey, Waltham Cross. The flowers were damaged by wet, but there were good blooms of Marie Baumann, Ferdinand de Lesseps, A. K. Williams, Mrs. John Laing, which has done so well this season, Captain Christy, Sénateur Vaisse, and the deep-coloured Prince Arthur. Amongst the Tea kinds, The Bride, Niphetos, Viscountess Folkestone, and Catherine Mermet were of good finish (bronze medal). Messrs. G. Paul and Son, Cheshunt, showed well-coloured and finished flowers of the brilliant crimson-scarlet Cheshunt Scarlet and flowers of Bruce Findlay, rich crimson; Dowager Duchess of Marlborough, cherry red; and T. B. Haywood, brilliant scarlet, and of good form, all Hybrid Perpetual varieties of promise. Messrs. J. Veitch and Sons showed cut blooms of greenhouse Javanese Rhododendrons. It is surprising the range of colours now obtained from buff to the most brilliant scarlet; the pinks are very delicate. From the same firm came a collection of Petunias in pots and a group of shrubby plants, containing in good flower *Astilbe Thunbergi*, *Spiræa callosa atrosanguinea*, deep red; *Ceanothus azureus albidus*, white; *Clematis coccinea*, C. *crispa*, mauve; *Cytisus nigricans*, *Philesia buxifolia*, *Veronica angustifolia*, and *V. ligustrifolia*. There were also specimens of *Retinospora pisifera aurea*, *Ulmus Dampieri aurea*, rich yellow leaves; *Sambucus racemosa serratifolia*, deep red berries and finely cut leaves; *Colletia horrida*, and *Quercus americana macrophylla*, a handsome, large, deep green-leaved Oak. Messrs. J. Cheal and Sons, Crawley, showed varieties of Cactus, single and bouquet Dahlias, and Mr. Eckford, seedling Pansies, but the colours are far too much mixed up. Messrs. H. Cannell and Sons, Swanley, had flowers of the self yellow-coloured Carnation *Germania*, tuberous Begonias in both double and single varieties, and a rich selection of Verbenas. The colours were decided and rich, the brilliant scarlet, turquoise-blue, and clear white especially so. It will be difficult to find a complete collection as at Swanley, as there is very little appreciation now shown these once popular flowers. Mr. Thomas Laxton, Bedford, showed the beauty and richness of his "Invincible" strain of Sweet Peas by a collection of flowers. A beautiful spray of *Tecoma jasminoides*, from Mr. F. Ross, gave us a glimpse of a favourite greenhouse climber not seen so often as one would like. A large collection of *Capsicums* came from Messrs. Sutton and Sons, of Reading; and also a batch of the valuable Chili, Coral Red,

which was certificated at the previous meeting. It is an excellent plant for decoration, as it is bushy in habit, dwarf, and neat, with the many conical deep red-coloured fruits showing up well above the leaves (bronze medal). An *Amaryllis*, something in the way of *A. equestris*, with a head of several dull scarlet flowers, came from Messrs. J. Carter and Co., High Holborn. It was described as from Bermuda, but we know nothing as to its history. A very pleasing exhibit, because it brought to the front an old and neglected plant, was the gathering of flowers of *Clethra arborea* from Mr. G. Wythes, Syon House Gardens. There is a large specimen of it in the conservatory there, one mass of the Lily of the Valley-like and sweetly scented flowers. It is a charming plant. Mr. Wythes also sent a bloom of the large ivory white-flowered *Cereus hexagonus*. *Cattleya Eldorado Wallisi* and C. E. Painted Lady came from Sir Trevor Lawrence. Both are beautiful Orchids. The first has small white flowers relieved by the rich orange colour in the throat of the lip; the other is a lovely variety, the flowers very freely produced and softly coloured. The sepals and petals are beautifully touched with delicate rose, brilliantly set off by rich orange in the throat of the lip, the front portion of which is white, blotched in the centre with rich magenta. Mr. H. M. Pollett exhibited C. E. alba splendens, a richly coloured and well marked variety. Several flowers of seedling varieties of *Lilium auratum* came from Mr. A. Waterer, Knap Hill, Woking, the flowers spotted more or less, and occasionally banded with colour down the centre of the segments, as in the variety *rubrum*. We think the purer colour of the type preferable to those flowers densely spotted as in this selection. Mr. G. R. Johnson, Tottenham, exhibited *Chrysanthemum Mlle. Leonie Lassali*, not wanted now.

A group of hardy flowers came from Messrs. Paul and Son, Cheshunt. There were spikes of the rose-purple *Lythrum salicaria*, the beautiful blue-flowered *Polemonium Richardsoni*, and *Eryngium giganteum* and *E. planum*. In this group were also the white variety of the Willow Herb (*Epilobium angustifolium album*), *Telekia cordifolia*, *Physostegia virginiana alba*, *Eremurus Olgae*, *Coreopsis lanceolata*, and *Spiræa palmata alba*. We refer to Marguerite Haller's *aureum compactum* for the purpose of condemning both the plant and the name. The leaves are variegated with yellow—a wretched sickly colour against the white flowers. A basket of it was shown by Mr. Fensom. Several large plants of *Polypodium angustifolium proliferum* came from Mr. Roupell, Harvey Lodge, Roupell Park, and flowers of new double Anemone-flowered annual *Chrysanthemums*, the colours bronze and lilac, from Messrs. Hurst and Son. Mr. May, of Edmonton, showed a bunch of *Bouvardia* flowers representing the leading varieties.

Fruit committee.—Several exhibits came before this committee, and the principal fruit shown was the Gooseberry. Messrs. J. Veitch and Sons, Chelsea, had a collection of 110 varieties and 40 branches to show the cropping qualities, besides Currants and early Apples and Pears. The majority of the Gooseberries were of the big fruited class, fat, flavourless kinds, that are only fit to look at. There were dishes of such deliciously flavoured kinds as Early Green Hairy, Green Gasgoyne, Pitmaston Greengage, Early Red Hairy, Yellow Champagne, Warrington, Ironmonger, and Red Champagne. These are small, but briskly and pleasantly flavoured. La Versailles, rich red, White Versailles, Carter's Champion, and Lee's Prolific Black Currants were also shown (silver medal). Messrs. Paul and Son also had a large collection of Gooseberries and a dish of the Hornet Raspberry, a large-fruited variety of much value. It was certificated on the last occasion (bronze medal). Mr. Henry Marriott, Skirbeck, Boston, Lincolnshire, showed Pride of Lincolnshire Pea, but not knowing its quality, we can say nothing as to its merits. Messrs. G. Bunyard and Co., Maidstone, had fruits of such early Apples as Red Astrachan and White and Red Juneating. Mr. A. Dean, Bedford, exhibited Cauliflower Early Snowball; and there were several seedling Melons, but none good in flavour.

CUCUMBER ALLAN'S FAVOURITE was given an award of merit. It came from Mr. Allan, Gunton Park Gardens, Norfolk, who mentions that he has grown no other variety either for summer or winter use for the past ten years. It is the result of a cross between Rollisson's Telegraph and Blue Gown, the fruits long, straight, ribbed, deep green, and of fine flavour. Wood wool was shown by Messrs. Dicksons, of Chester.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).

THE annual exhibition took place in connection with the meeting of the Royal Horticultural Society at the Drill Hall on the 23rd inst., and it proved one of the best ever held in London, the flowers being numerous and the competition in the various classes very keen. All sections were well represented, the yellow ground varieties being especially fine. Several new exhibitors from the south of England exhibited for the first time, and flowers came from as far north as Manchester and as far south as Southampton. The flowers generally were large and finely coloured. Some of the Carnations were getting past, but generally they were seen in their best dress. The Picotees were in excellent form, pure, and delicately and richly margined. In the class for twenty-four Carnations there were six competitors, and the first prize was awarded to Mr. Charles Turner, Royal Nursery, Slough, who had fine and attractive blooms of s.b. Mars, James McIntosh, Robert Lord, Robert Houlgrave, shown in the finest character generally, and George; c.b. Mrs. Daniels, James Taylor, Mrs. Barlow, Rifleman and Unexpected; s.f. Charles Turner and John Ball; p.f. Prince George of Wales and James Douglas; r.f. Thalia, Sporting Lass and Samuel Newman. Second, Mr. James Douglas, gardener to Mrs. Whitbourne, Great Gearies, Ilford, with s.b. Arthur Medhurst, Robert Lord, and Robert Houlgrave; c.b. Lallah Rookh, Tim Bobbin, Miss Gorton; s.f. Matador and Alismond, very fine; p.f. Warrior, James Douglas, Squire Whitbourne, Daphne; r.f. Rob Roy, Thalia, Tim Bobbin and John Keets. Third, Mr. M. Rowan, Manor Street, Clapham. Fourth, Mr. R. Sydenham, Birmingham. There were eight competitors in the class for twelve varieties, and here Mr. M. Rowan was first with a very fine lot indeed, including s.b. Fred and R. Houlgrave; c.b. Edward Rowan, Master Fred and William Skirving; s.f. John Whitham and Sportsman; r.f. Rob Roy, Jessica and seedling; p.f. James Douglas and George Melville. Second, Mr. J. Douglas; third, Mr. J. Lakin, Temple Cowley, Oxford; fourth, Mr. W. L. Walker, Balmershe Road, Reading. There were ten collections of six blooms, Mr. C. Phillips, Hamilton Road, Reading, being first with s.b. R. Houlgrave, c.b. John Harland, p.p.b. Rifleman, s.f. Alismond, p.f. J. Douglas, r.f. Rob Roy. Second, Mr. T. E. Henwood; third, Mr. H. Startup, Bromley; fourth, Mr. T. Anstiss, Brill.

In the classes for single blooms there were numerous flowers. In that for s.b.'s, Robert Houlgrave was placed first; in that for c.b.'s, Master Fred was first; p.p.b.'s, Miss Annie Lakin, a new variety, very fine in colour, and with a massive, well-formed petal, raised and shown by Mr. Joseph Lakin, was to the front; p.f. Prince George of Wales was the best; s.f. Alismond, finely shown by the raiser, Mr. J. Douglas, was first; r.f. Thalia first.

The premier Carnation selected from the whole show was s.b. Robert Houlgrave, a richly coloured variety, with a finely formed petal, raised by Mr. Samuel Barlow, of Manchester, from seed obtained from Mr. E. S. Dodwell. Shown by Mr. Turner.

In the class for twenty-four blooms of Picotees not less than twelve dissimilar, Mr. James Douglas was first with h.r. Princess of Wales, Brunette, John Smith; l.r. Mrs. Bower, Miss Gorton; h.p. Calypso, Mrs. Chancellor; l.p. Jessie, Her Majesty, Clara Penson, Pride of Leyton and Muriel; h.r. Mrs. Sharp and Mrs. Payne; l.r. Favourite. Second, Mr. Charles Turner, with a very fine lot of blooms, consisting of h.r. Dr. Epps, J. B. Bryant, Exhibitor; l.r. Mrs. Bower, Thomas William; h.p. Zerlina

and Muriel; l.p. Mrs. Nicholay; h.r. Edith Dombrain, Duchess, and John Archer; l.r. Favourite and Mrs. Payne. Third, Mr. M. Rowan. Fourth, Mr. F. Hooper, Bath. There were nine competitors in the class for twelve blooms, Mr. M. Rowan being first with capital blooms of h.r. Brunette and Morna; l.r. Mrs. Gorton; h.p. Muriel and Amy Robsart; l.p. Clara Penson; h.r. Mrs. Sharpe, Edith Dombrain and Mrs. Payne; l.r. Nellie and Favourite. Second, Mr. T. E. Henwood, with h.r. Brunette; l.r. Thomas William; h.p. Mrs. Niven and Muriel; l.p. Juliette, Ann Lord and Baroness Burdett Coutts. Third, Mr. J. Douglas. Fourth, Mr. J. Lakin. There were eight competitors in the class for six blooms, Mr. C. Phillips being first with some charming blooms, viz., h.r. John Smith, h.p. Zerlina, l.p. Ann Lord, h.r. Mrs. Ricardo and Mrs. Payne, l.r. Favourite; second, Mr. W. L. Walker; third, Mr. J. Ribbeck, Southampton; fourth, Mr. J. J. Keen. In the classes for single blooms the best h.r. were Brunette and Princess of Wales; l.r. Mrs. Gorton and Thomas William; h.p. Mrs. Niven, Mrs. Chancellor, and Calypso; l.p. Miss Lakin, Baroness B. Coutts, and Pride of Leyton; h.r. Mrs. Payne, Mrs. Sharpe, and Edith Dombrain; l.r. Favourite and Nellie. The best yellow ground Picotees were Remembrance, from Mr. J. Douglas, a new variety of considerable merit, pure yellow ground edged with pink. He was second with the same; third, Mr. C. Turner with Agnes Chambers, and fourth with the same. The premier Picotee was Mrs. Payne, light red, shown by Mr. C. Turner in his stand of twenty-four varieties.

The self and fancy varieties were very striking, through the preponderance of rich colours. Mr. C. Turner was first in the twenty-four varieties, having a very fine lot indeed, the leading flowers being Purple Emperor, Scarlet Gem, Dazzle, Mrs. Payne, Viscountess Downe, Rose Celestial, Constance, Lady Rose Molyneux, &c.; second, Mr. J. Douglas; third, Mr. T. Hooper; fourth, Mr. G. Hooper. There were fourteen stands of blooms, generally of fine flowers. Mr. T. E. Henwood was first with Joe Willet, Gladys, Purple Emperor, Colonial Beauty, Mrs. Rowan, and Rose Celestial; second, Mr. M. Rowan, with a very fine lot also; third, Mr. R. Sydenham. Yellow grounds made a very effective display, some grand blooms being staged. Mr. C. Turner was first with a very fine lot of flowers, comprising Colonial Beauty, Almira, Dorothy, Agnes Chambers, and seedlings. Second, Mr. J. Douglas, with Remembrance, Undina, Mrs. F. Whitbourne, Ceres, Celio, Agnes Chambers, &c. Third, Mr. T. Hooper, among whose flowers was a very fine yellow, named Duchess of Albany. In the class for six blooms there was also a good competition. There were several collections of twelve plants in pots, and they served to bring out the value of the yellow ground varieties as pot subjects. Mr. C. Turner was first with a well-grown and bloomed collection, consisting of Dorothy, Favourite, Colonial Beauty, Almira, Dazzle, Viscountess Downe, Terra Cotta, Germania, Dr. Epps, Agnes Chambers, Rose Celestial, and Beauty of Chatham. Second, Mr. J. Douglas. Third, Mr. H. W. Headland, Leyton.

Certificates of merit were awarded to Mr. J. Douglas for Remembrance, a fine yellow ground with slight edging of pink; Ruby, a very fine ruby coloured self; and Calypso, a heavy purple-edged Picotee of great promise and quite distinct; and to r.e. Picotee H. W. Headland, a charming flower, pure in the ground and fine in the petal.

The exhibition was greatly helped by contributions of cut blooms of Carnations and Picotees from Messrs. James Veitch and Sons, Chelsea; Paul and Son, Cheshunt; W. Rumsey, Waltham Cross; and Dicksons (Limited), Chester.

Manchester Rose show.—Saturday last was a bright day for Manchester, the occasion of the annual Rose show in the Botanic Gardens. The flowers were of excellent quality considering the adverse weather, and there was not wanting a keen competition, as may be judged from the fact that here were eight competitors in the class for seventy-

two distinct varieties, single trusses. Here, again, Messrs. Harkness, of Bedale, were first, exhibiting flowers of great freshness and finish, and good colour; Messrs. J. Cocker and Sons, Aberdeen, were second; and Messrs. Paul and Son, Cheshunt, third. A beautiful stand of flowers was put up by Messrs. A. Dickson and Sons, Newtownards, Co. Down, the flowers faultless in form, finish, and colour. They were, of course, placed first, Messrs. Harkness and Sons being second. Mr. Prince showed the best flowers of Tea-scented varieties in the class for eighteen blooms, also the finest twelve, Mr. Mattock being second. For twelve blooms of any yellow Rose Mr. Prince was first with Francisca Kruger, and in the class for a white-flowered variety Messrs. Croll, Dundee, won with blooms of Merveille de Lyon. Mr. Prince showed best in the class for crimson-coloured flowers, having excellent blooms of Alfred Colomb. Amateur classes, although not well filled, contained many excellent flowers. The Rev. J. H. Pemberton was first for thirty-six flowers, single trusses; Mr. W. J. Grant, Ledbury, being second. The Rev. J. H. Pemberton was also first for twelve varieties, and also for twelve Teas and Noisettes. Mr. Grant showed Alfred Colomb in good condition in the class for twelve crimson-coloured flowers. In the classes for residents within twenty miles of Manchester Mr. R. G. Burgess, Knutsford, was first for twenty-four single trusses, and Mr. G. Burgess was to the front for twelve and six distinct varieties. Besides the exhibition proper there were many beautiful miscellaneous exhibits.

SHEFFIELD ROSE SHOW.

THE National Rose Society held an excellent show of flowers in the Botanic Gardens, Sheffield, on Thursday last, and many good blooms were to be seen. Messrs. Harkness and Sons, Bedale, Yorks, won the first prize in the great class for seventy-two varieties, distinct, single trusses, staging fine blooms, considering the lateness of the season. Prince Arthur, Constantin Tretiakoff, Reine du Midi, Duke of Teck, Suzanne de Rodocanachi, Gloire de Bourgl-Reine, Duchesse de Caylus, Emilie Hausburg, Rosieriste Jacobs were uncommon kinds, shown extremely well. Messrs. Paul and Son, The Old Nurseries, Cheshunt, were second. In the class for thirty-six distinct, single trusses, Messrs. J. Jefferies and Son, Cirencester, were first, and Mr. H. Merryweather, Southwell, second. The Cirencester growers again scored well in the class for eighteen, and in the Jubilee class, thirty-six distinct, single trusses, four competed. The principal prize was a challenge cup, value 50 guineas, to be held one year, and the sum of £3. Messrs. Harkness and Son were the winners, and Messrs. Mack and Son, second.

Amateurs' classes were well filled. In the Jubilee class for twenty-four blooms, distinct, single trusses, the Rev. J. H. Pemberton, Essex, was first. The prize consisted of a 50 guinea challenge cup and £3. His flowers were excellent. Mr. E. B. Lindsell, of Hitchin, was second; and Mr. W. J. Grant, third, his stand containing the best bloom of a Tea variety in the amateurs' classes. It was a charming flower of Etoile de Lyon. The Rev. J. H. Pemberton was also first for thirty-six; and in the class for twelve triplets, the first prize, a silver cup and £2, Mr. Grant had the best blooms. Mr. Lindsell was second. Mr. E. Mawley, Rose Bank, Berkhamsted, had the best twelve blooms, and another successful exhibitor in other classes was Mr. C. Knifton, Driffield. In the amateurs' class for six blooms, Mr. S. Doncaster, Abbeydale, was first, exhibiting fresh clearly-coloured flowers of Her Majesty.

Tea Roses were splendidly exhibited by Mr. G. Prince, of Oxford, who was first in the principal classes. Messrs. Jefferies and Son had the finest twelve flowers; and a beautiful stand was that from the Rev. F. R. Burnside, Hereford.

In the class for twelve new Roses, Messrs. Paul and Son were first; and for twelve blooms of any yellow Rose, Mr. Prince was first, showing in beautiful condition Francisca Kruger; Messrs. Mack and Son being second with Maréchal Niel. Mr. Prince

was also to the front for crimson Roses, exhibiting Alfred Colomb; and again for twelve dark crimson Roses, exhibiting the deep coloured Prince Camille de Rohan.

THE GARDENERS' ORPHAN FUND

THE usual July gathering of the supporters of this excellent institution took place at the Cannon Street Hotel on Friday, the 19th inst. The committee met at noon, and at 2 p.m. the annual meeting of the subscribers took place, Mr. George Deal in the chair, supported by a good attendance. The notice convening the meeting having been read by the secretary, the annual report and balance-sheet was presented. The former commenced with thankfulness for what the committee had been able to accomplish in the way of ministering to the necessities of children during the past year, and dwelt upon the profound expressions of gratitude received from widows of gardeners and other relatives of the children who were last year elected to participate in the benefit of the funds. The generosity of Mr. N. N. Sherwood was acknowledged, who by placing the sum of £100 at the disposal of the committee enabled them to place an additional child to those elected in July, 1888, upon the fund.

The Duke of Bedford was also thanked for the use of the Flower Market for holding the second evening fête, by means of which over £200 had accrued to the funds. The indebtedness of the committee to the Duke of Marlborough was also acknowledged for opening the Blenheim Gardens in aid of the fund, by which the sum of £73 was obtained; to several friends in different parts of the country who had organised entertainments in aid of the fund which resulted in substantial additions to it; and to the local secretaries. The horticultural press is specially thanked for valuable support, and the services of the auditors gratefully acknowledged. Through the munificent gift of £500 by the Duke of Bedford the subscribers were that day able to place a sixth child upon the fund.

The balance-sheet showed an annual income from all sources, including a balance of £608 6s. 10d. brought forward from last year, of £2583 0s. 5d., and an expenditure to the same amount, including the purchase of £1500 worth of Government Stock, and £605 13s. 9d. balance at the bank. The adoption of the report and balance-sheet was moved by the chairman and carried. The treasurer, Mr. T. B. Haywood, the outgoing auditor, the members of the committee, who retire by rotation, and the secretary were then unanimously elected. The meeting then adjourned, to receive the report of the scrutineers at the election, until 4 p.m. The following had the greatest number of votes, and were accordingly elected: Bessie Taylor, 237 votes; A. J. Ireland, 233 votes; C. W. Mosedale, 151 votes; W. C. Allen, 133 votes; D. G. Guthrie, 108 votes; and H. R. Preston, 103 votes.

The annual dinner, which was largely attended, took place in the evening, the large hall being very handsomely decorated with Palms and flowering plants, a good supply of cut flowers and fruit having been also sent for the tables. The president, Sir Julian Goldsmid, Bart., M.P. presided. In proposing the toast of "Gardening and Gardeners," Mr. Harry Veitch generously offered to give a sum of £100, provided the friends of the fund raised a similar sum during the next three months. The chairman promptly promised the sum of £25, and about £50 altogether was promised during the evening.

Names of plants.—E. M.—*Asclepias curassavica*.—J. Crook.—1, *Juniperus sinensis*; 2, *Fraxinus lentiscifolia*; 3, *Ceanothus dentatus*; 4, *Lilium Martagon*; 5, *Colutea arborescens*; 6, *Papaver Danegrog*; 7, *Rhododendron Veitchi*.—E. Underdown.—*Ornithogalum arcuatum*.—G. H.—1, *Campanula persicifolia* fl.-pl.; 2, send in flower.—S. S. W.—1, *Vicia pyrenaica*; 2, *Eriothera biennis*; 3, *Hypericum coris*; 4, *Jasminum hirsutum*; 5, next week; 6, *Veronica spicata*; 7, next week; 8, *Francoa ramosa*; 9, *Achillea ptarmica* fl.-pl.; 10, next week; 11, *Aspidistra lurida variegata*; 12, *Panacratium fragrans*; 13, *Tradescantia virginica*; 14, *Centaurea montana*.—R. L.—*Anacochilus* var.—C. O. Miles.—Yellow form of *Lilium canadense*.

WOODS & FORESTS.

SUITABLE SITES FOR PLANTATIONS.

PERHAPS one of the commonest mistakes made in forming plantations is in choosing wrong situations. No intelligent forester will, of course, commit such mistakes if he can help it, but we frequently see such mistakes perpetrated. Trees are planted in wet situations and on undrained land, where it is well known they cannot thrive, and exactly similar blunders are committed in the opposite direction. Take the Larch, for example. It is a well-ascertained fact that it cannot thrive long in a wet soil; but how often do we see it planted in sodden, undrained land, and consequently the trees die prematurely. If it has light—that is, if the plantations are not left too crowded—the Larch, as a rule, thrives uncommonly well on dry soil, even though the soil be thin. The finest trees and soundest timber that I have ever seen have always been grown in such situations. In a large tract of Larch plantations not far from here, and which has lately been cut down and used for colliery purposes, the trees are mostly all sound and good, very few of them exhibiting any decay in the centre, and they would possibly be about eighty years of age. The ground occupied by the plantation is naturally well drained, the soil, though thin, is not poor, being a fair yellow loam. There are many fine trees of about the same age in the same locality, all in good health, and where fully exposed to the light they are furnished with branches to the base of the trunk. Where these Larches thrive, however, the common Spruce grows but indifferently, the soil being too dry for it. I do not suppose that a single Spruce of large dimensions or in good health could be found in the same locality; but in another part of the country, where the soil is moister and the rainfall much greater, the Spruces are invariably healthy and form fine trees of great girth, while the Larches are poor, and everywhere exhibit symptoms of premature decay. Spruces always thrive indifferently on dry, thin soils and in exposed situations.

THE DEODAR AND NORDMANN'S FIR, curiously enough, seem to thrive well in situations that suit either the Larch or the Spruce. The Deodar suffers a little from exposure, but not nearly to the same extent as many other Conifers. It is an excellent sure-growing tree, whether the soil be poor or rich, moist or dry, within reasonable limits, and wherever a good evergreen fringe is wanted to a plantation it is the tree to plant. The Wellingtonia is not so particular as regards soil, but it is quite useless to plant it in exposed situations, or I may qualify my statement, and say situations exposed to north, north-east, or north-west, and east winds, which, when they blow with any persistency, make mere naked skeletons of the trees. This indeed is the fault of nearly all the more tender Pines. They make noble and symmetrical specimens when sheltered, and are perhaps hardy enough against frosts, but they do not stand against the blast successfully.

THE HOLLY AND YEW are two valuable trees. They will grow tolerably well in the shade, and in almost any ordinary good soil; but in a rather dry, strong loam both do best, the Holly particularly. Though a difficult subject to transplant, I never remember the Holly to have shown any signs of distress from drought if the roots had had time enough to get hold of the soil; but the Yew occasionally suffers, owing to the roots spreading out close to the surface. Hence the benefit trees growing

on lawns and other exposed places receive from top dressings, which should be placed over the roots as far as they extend. Still, though there are trees that prefer a dry, and others a moist situation, as a rule all timber trees do best in a soil free from stagnant moisture; hence the necessity of drainage in plantations, which may be effected by means of open drains to a considerable extent, if the drains be cut in parallel lines at regular distances apart and kept open by periodical cleanings. I have known extensive woods drained in this way, when doing it otherwise would have entailed much expense.

W. S.

Nailing fence rails to trees.—I am glad "J." (p. 66) has called attention to this subject; it is a practice that ought not to be tolerated anywhere. Workmen are thoughtless in this respect. If they happen to be erecting fencing near young trees they appear to think that these will never attain a useable size, and they drive the nails into them as if they were the proper posts. As time goes on the wood grows and often covers over the nails, which are not discovered until the timber finds its way to the sawmill, when the whole machinery is injured by their presence. I have sometimes noticed buyers of wreckage think they had secured capital bargains in purchasing much below the market value what seemed to be good timber, but when it came to be sawn up the hidden nails proved very destructive.—J. MUIR.

Oaks from southern seed.—In making a few remarks on the fine quality of Acorns which I saw some time ago in a nursery, and which had come from the south of England, I was told by the nurseryman that seed from the south, and especially from France, was preferred, as it invariably produced the finest and largest plants. The Acorns gathered in the middle of Yorkshire, he said, produced plants about 9 inches high the first year, while those produced from seed from the south of England were as strong again, and those from the French seed still stronger. The fact is perhaps familiar to most nurserymen. The question is, Is it the size of the kernels or their more perfect maturity that is productive of the extra vigour, and are the results permanent? Is the difference in growth noticeable after the first year or two? If it be due to the size of the seed, one would think the difference would not be lasting; but if due to more perfect maturity, it might. I am inclined to think that bulk of seed has more to do with it than ripeness. In Yorkshire, Acorns ripen well and vegetate freely, but they are from one-half to two-thirds smaller than those which come from the south.—J. W.

A profitable timber tree.—The wild Black Cherry (*Prunus serotina*) is a healthy tree, a rapid grower, and timber made from it brings as high a price in many markets as Black Walnut. It is a much more profitable tree to plant than the Black Walnut, as it can be grown more closely, that is to say, many more trees can be grown to the acre. It is not so detrimental to other vegetation as the Black Walnut, which will always be found to have ample room if of large size, while the Cherry may be found close to other trees without apparently harming them. Another great advantage the Cherry has over the Black Walnut is that it is ripe for the cabinet-maker in less than half the time required for the Walnut, and to this may be added the advantage that it is more easily grown, or, rather, more cheaply grown. One bushel of Cherry seeds will produce as many seedlings as twenty-five bushels of Walnuts, and the Cherry is more easily dug up and transplanted. I do not, however, wish to say one word against the Black Walnut as a timber tree, but Black Walnut trees will not all make logs when planted 2 feet or 3 feet apart. The common-sense way would be to plant them at least 20 feet apart, and fill in with cheap, rapid-growing trees that could be cut out in time, leaving the whole space to the Walnuts, for it should be borne in mind that the Black Walnut sapling is of about as little use as any common sapling. The Cherry and Walnut stand about equal as being

healthy trees, and both are affected alike by the tent caterpillar, which does not appear to injure either of them when the trees are grown in quantity. The Black Cherry is found from the Canadian lower provinces to Florida, and from the seaboard to Kansas and Nebraska. The Black Walnut has about the same range, both apparently "running out" in Northern Wisconsin and Minnesota. The Cherry will make a rapid growth on much poorer land than will Black Walnut. It grows well on a light, sandy, gravelly loam, and grows best on dry land. Where the land is naturally moist the Black Walnut will flourish, and should be preferred.

Why timber decays.—Intelligent people who follow what is written about the durability of timber must often feel puzzled, not only at what they read, but at what they see. For instance, I once split up an Oak trunk, and one post made from the trunk was put in for a hitching post. A hundred yards from this another as a hitching post was also placed. After about ten years one rotted completely away, the other is sound and solid as ever, and will probably last ten or more years yet. There is not the slightest difference in the quality of the wood, as both are from opposite sides of the same trunk, yet, if different people had this wood to test, how different would their reports be. What is it which causes destruction in timber? Some say fungus, that is, mildew or moulds. The decay of wood is evidently due to chemical action, and if we can only find out just what these agencies are, we may have in our hands the power to make any wood durable.

Spring v. autumn planting.—From long and extensive experience in planting in different situations and soils, I am in favour of autumn planting of forest trees and also evergreen shrubs unless in cold, bleak situations, when the latter are best deferred till spring or early summer. There may be situations where the soil is too wet to admit of early planting, but such is unfit for planting at any season till drained. There is an old saying, which in practice I find to be correct, viz., "Plant a tree in autumn and command it to grow, but in spring you must coax it." Some are of opinion that severe frost will injure early planted trees; this I have proved to be a fallacy. In order to test it I left young trees with their roots uncovered during severe frost and planted them when thawed, and I found that they sustained no injury. There is more risk from drought in spring planting than from frost in autumn or winter planting.—J.

Planting Oaks for profit.—The slow growth of the Oak is by many alleged as a reason why plantations of it will prove less profitable than those of other trees. In answer to this it may be stated, first, that as the Oak is almost in every case planted among nurse trees, which are not cut down till they are of some value as poles or timber, there can hardly be said to be such a thing as a young Oak plantation; and, secondly, that though the Oak, under ordinary circumstances, is of a slow growth while young, yet, after the trunk has attained a diameter of 6 inches or 8 inches, the Oak grows as fast as almost any other hard-wooded tree, and certainly faster than some—such as the Beech and the Hornbeam. The value of the timber of the Oak, even when of small size, the value of the bark, and, as Matthew observes, "the slight comparative injury of its shade to coppice wood, hedge plants, Grass, corn, or other crops should give a preference to this tree for planting, wherever the climate and soil are suitable, over every other kind, with the exception of the Larch and Willow, which, in particular soils, will pay better."

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

EVILS OF GRAFTING.

TO THE EDITOR OF THE GARDEN.

SIR,—The discussion on the question of grafting is a most important one, and opens a new field for horticulturists to thoroughly explore. The whole subject has been so slightly and carelessly treated in the past, and growers have gone on propagating all sorts of things by grafting in such a short-sighted way, that a great deal of harm has certainly been done in various cases, and much needless expense also has been incurred, when the sole reason for the use of grafting to increase some plant or tree has been the idea of its cheapness. It is surely a loss and a mistake to graft together such things as unite so imperfectly as to fall apart again almost at a touch. Trees dependent on such half-united stocks cannot support heavy crops, or stand high winds, or continue permanently in healthy growth. Such are many Pears on Quince roots, most dwarf and hard-grained shrubs on coarser stocks, as *Prunus triloba* on Peach, *Robinia hispida* on *R. Pseudacacia*, Plum on Peach (done in America by the 100 acres in nurseries), and, worst of all, Roses on any roots but their own.

A hundred things could be named which are grown on borrowed roots, simply and solely because the nurseryman can get them up in this way more quickly, or thinks he can do so. All of these are a delusion and an ultimate disappointment. Worse still, looking from a nurseryman's standpoint, many of these same things can be more rapidly and cheaply multiplied in other ways and have their own roots. I will instance the nearly universal practice of grafting the Japanese Maples, while the man who has made their growing the greatest success in America has always done it by layering, and his plants are preferred to all others, as well as produced most cheaply.

In weeping trees there is more excuse for grafting, but it is never absolutely necessary even with these. Every one of them can be grown from layers and trained to a stake until tall enough to be allowed to take its own course and weep. In fact, this is done now by many good growers, and far more graceful trees than by the artificial way are obtained. The best landscape gardeners in America refuse to plant such trees unless grown in this way on their own roots, or at least grafted at the earth.

A large trade has been enjoyed by English growers of *Rhododendrons* in supplying so-called "hardy" sorts to people in Northern New England, where *R. ponticum* is sure to get winter-killed in a few years. These were once all grafted on *ponticum*, often high above the ground, and the result has been the loss of nine-tenths of all the plants sent out from England to those parts.

Wise men who are willing to learn are now raising the hardy sorts by layers for this market, and all the unwise must follow suit, or lose their trade in those markets.

Take the case of the Chinese *Magnolias*. I have seen acres of them budded on *M. acuminata* and *M. tripetala* with all the buds killed by the hard winter and the imperfect union. A simple system of stool plants and layering would have been always successful.

It may be laid down, as a rule, I believe, that grafting plants or trees on roots that are sure to "sucker," and so rob, and, in the hands of the great majority of buyers, destroy the valuable sort, is a fundamental error. Secondly, that grafting one sort on another with which it never fully unites, and from which it is easily broken, is unprofitable to all concerned. I do not wish to say that grafting is never desirable. There is nothing to be said against a grafted tree that grows vigorously a hundred years, and produces perfect fruits, but there is need to say much against the ignorant and indiscriminate grafting together of all sorts of ill-assorted things that can never be valuable to the purchaser by nurserymen who really know better, but who have the almost universal practice to excuse their bad methods. It is the abuse of the art of grafting that cries aloud for reform.—F. L. TEMPLE, Cambridge, Mass.

—In reply to your correspondent, Mr. W. H. Rogers (page 87), I should like to say that grafting in all its forms is merely an artificial and, in the main, a poor and unsatisfactory substitute for more natural and efficient modes of propagation. Weeping trees are more easily increased by layers than are their erect-growing types. The naturally scandent or weeping shrubs and trees of Europe, such as Brooms, Thorns, Hollies, Ashes, Beeches, *Cytisuses*, carpet the ground, or drape the rocks, on which they are at home, and as so used in our gardens are very beautiful; but the sticking of these things on to broom-stick stocks totally obscures their natural or native habit, and often shortens their lives by disease as well. Mr. W. H. Rogers has yet much to learn as to the evils of grafting, which is, indeed, a kind of adulteration, and as unnatural as tight-lacing or other so-called fashionable error. Some of us would as soon think of grafting a Cabbage or a Wallflower as of grafting a coniferous tree. There is not a plant in cultivation in Europe to-day that cannot be increased by cuttings or layers. An American nurseryman complained to us the other day that he could not establish one grafted *Magnolia* out of twenty, and the same difficulty is experienced with grafted *Clematises*, *Prunuses*, *Rose Acacias*, double-blossomed Peaches, and many other things in English gardens. Any of these things, when layered, soon make strong and healthy plants. We have too much of the tin-kettle kind of propagation in our nurseries. Fancy root-grafting hardy *Clematises* on a bottom heat of 70° to 90°, for example. As so treated, plants are quickly produced in the nursery by the thousand; but is it not also true that they quickly die off or fail in private gardens by the thousand? In a word, what is a perfect method as seen from the nurseryman's standpoint is often a fatal one as viewed by the gardener or cultivator of the nurseryman's "stuff."

Fruit trees are now universally grafted, but so were Roses only a very few years ago. We never recognised to the full the capabilities of our Roses until we grew them on their own roots, and the same will some day be proved with regard to fruit trees. Let us "hillock-layer" all our best fruit trees, and note the results as compared with those grafted on the best and most congenial "stock." Grafting gives us a rapid method of increase, but noting its subtle drawbacks, some of us would rather rear our trees on a slower and surer plan. Any fruit-bearing or ornamental tree that will not succeed on its own roots had better go to the rubbish-fire at once. We want no coddled nor grafted stuff when own-rooted things are in all ways infinitely better, healthier, and longer lived.

I know a little about the most modern

researches in botany and vegetable physiology, and no one has yet proved that grafting ever improves or enhances the value of any plant or tree whatever. The advantages claimed for grafting are advanced and upheld on insufficient grounds. If the mere act of welding one tree with another improved anything, it is our fruit trees, but I totally deny that a grafted fruit tree of any variety is improved. Any seeming advantages are counterbalanced by a much larger proportion of disadvantages, and, broadly speaking, grafting is always a makeshift, and very often a fraud. I distinctly and unhesitatingly assert that no fruit-bearing tree has ever been improved by grafting. That some fruit trees are difficult to increase from layers is actually due to grafting, for any fruit tree on its own roots has only to be pollarded or headed off near the ground level to ensure a crop of shoots that may be readily hillock-layered. Grafting is of that class of offences which add insult to injury, by thus adding to the natural difficulties of propagation, while claiming every advantage to itself. No botanist or vegetable physiologist of our own time has ventured to assert that grafted fruits are "improved" by that merely mechanical process. If grafting really did improve Apples, or Peaches, or Pears, or Plums, as its advocates, and especially the nurserymen, say it does, why then do they offer us some fruits ungrafted? Why not give us grafted Gooseberries, Currants, Figs, Grape Vines, Mulberries, and Raspberries? No; the defenders of grafting like to argue both ways. If, as a result of grafting, some fruit trees are difficult to increase otherwise than by that method, then they assert that grafting is best, and that fruit trees are improved by the operation. But, on the other hand, if fruit-bearing things like Grape Vines, Figs, Mulberries, and bush fruits are easily propagated from cuttings or layers, then we hear nothing of grafting as an improving factor. This looks as if the main point is the getting up of stock easily and cheaply; but from the cultivator's point of view "cheap stock" is not everything, and especially not if it fails! The best stock is the cheapest in all ways, and I and others defy the defenders of "grafted stuff" to prove, or even to assert, that it is in all ways best.

Having said this much, it is to be hoped that amateur and professional gardeners will keep their eyes open, and come to a more perfect understanding as to the subtleties and vagaries of grafted stuff. The old days when gardeners took the nurseryman's word and advice as gospel are gone, and cultivators are beginning to trust to their own eyesight and experience.

In conclusion, I should like to say that the good old honest plan of hillock-layering ought to be revived, as applicable to all fruit trees and ornamental trees whatever. Let us, at least, have own-rooted trees for comparison with grafted ones, and if the nurserymen do not look ahead, let us layer them for ourselves, as indeed is now being done.—F. W. BURBIDGE, Dublin.

—The discussion on this point that has been going on in THE GARDEN of late is most interesting, more especially the cut of a grafted plant of *Prunus triloba*, which was an exact illustration of my own observation with this plant. I obtained this *Prunus* from five or six different nurseries, and in every instance the plants were grafted. Although the plants grew and bloomed for a year or two, after a time they began to fail and had to be destroyed. No doubt the motive that induces trade growers to graft many things is that they may increase the vigour of the subject. But it goes on only for a time, and the last state is worse than the first. Would it not be a gain to all concerned to work up a stock of plants

on their own roots? If the purchaser had to pay two or three times as much for the plants, every plant would then be reliable. It is open to question if grafting could be advantageously given up altogether. Judging from my own observation, grafting is as much practised on the Continent as it is in this country. How many trees owe their short life to being grafted on a bad stock? although I fail to see how grafting could be entirely done without in propagating fruit trees. It may be worth while asking the readers of THE GARDEN if they have ever seen in the open a good healthy bush of the lovely *Prunus triloba*? If so, it would be interesting to know its whereabouts, &c.—J. C. F.

After the sweeping assertions you have made respecting the evils of grafting it is not quite candid in merely selecting a trifling case or two where grafting may not have succeeded, probably from not using a proper stock. Every practical horticulturist knows this, but that is very different to your view of abolishing grafting altogether. The evidence you name and also the diagram of an abortive graft in a former GARDEN was really too weak and misleading to be noticed. [We print this as it comes from Mr. Rogers, if only as an example of a too common kind of argument in discussing these things. Mr. Rogers here refers to an engraving from a photograph accurately done this year and typical of a number of plants that died through being grafted, as anybody interested may see—a most important fact, showing the loss and injury to our gardens, and which Mr. Rogers now chooses to call "too weak and misleading to be noticed." He has no right to make these statements, as we can show both engraving and plant if need be.—ED.]

I see you are not even yet satisfied that weeping trees, which are always required on tall stems, should be grafted, but you do not say how they are to be got without. [See what Mr. Temple says in the preceding article.—ED.]

With respect to Medlars which you make particular allusion to, as there are three distinct sorts in cultivation, two especially (Nottingham and Dutch), please say how they are to be cultivated if not by grafts. [By layers if any particular variety is required, but we use the Medlar for the sake of its foliage and flowers, and are not particular as to kind. If raised from seed, as it should be, we may secure an interesting variation in the plants. We tried some of the largest nurseries in France and England without being able to get a Medlar otherwise than grafted on something else!—ED.]

You speak of Hawthorns choking a large group of Medlars. If this is an objection to general grafting I am sure a great many of your readers must be amused at reading such nonsense. The Hawthorn is not the best or usual stock for grafting Medlars [What is?—ED.], and here I may say that grafting, to be successful, must be done on proper stocks, such as are well known to and used by all nurserymen who understand their business. You allude to some Quince coming up instead of *Pyracantha*. This is perfectly unintelligible and requires explanation. [Here is the explanation. A low evergreen shrub was required for a certain position on a bank with distance view above a sunk fence. Seeing a very prickly form of *Pyracantha* recommended in a Surrey nursery, 100 plants were bought and planted in this position. Now in almost every case strong suckers of Quince are coming up among the *Pyracantha*, and if neglected will attain their full size and close the prospect. If this is not clear to Mr. Rogers, we will show it to him. Perhaps he thinks there ought to be someone watching for the suckers to pull them up. But however easy this is for nurserymen, it is scarcely fair to expect it to be done in a country place. Probably the removal of suckers is so large a part of Mr. Rogers' work, he thinks nothing of it; but we submit that in the case of perfectly hardy shrubs and trees it is a needless labour imposed on planters, apart altogether from the other evils of grafting.—ED.]

Your statement that even coloured and variegated trees are now raised from seed (the inference being they would all come true) I should like veri-

fied, as I never found it so. [In the larger nurseries about London, such as Lane's and Waterer's, many variegated Yews may be seen that have come from seed. There is no inference whatever that all the seeds would come true, but there are fine stocks of such things already to be had. That they vary from seed would be a charm to many people instead of a drawback.—ED.]

You particularly allude to the Rose *Acacia*. Please say how you would propagate it, if not by grafts, and if you know your own method has been tried and found successful. [Yes, in America. This will show the narrow view Mr. Rogers takes. He assumes, apparently, that the art of grafting came in with the first man, and does not ask himself how a thing grows in Nature. The Rose *Acacia* in America is a beautiful bush, spreading about freely in a delightful way, flowering long, and increasing so freely, that grafting is a round-about way in comparison. We put it on another tree and make a big mopstick of it, weak and short-lived. If this discussion has no other effect, it will certainly lead to this beautiful bush being seen in its natural form, as a friend is going to send us enough to make a group of it on its own roots.—ED.]

With respect to the particular sort of *Phillyrea*, spoken about by Mr. Anthony Waterer, there may be some speciality about a certain shrub which is of trifling import compared with your apparent desire to do away entirely with all budding and grafting of fruit and ornamental trees. As you solicit nurserymen's evidence as to "the evils of grafting" and have named Mr. Anthony Waterer, who is one of the most practical men in the trade, there is no doubt his evidence would be most valuable. He, like other nurserymen, probably raises a great many *Rhododendrons* from layers, especially some sorts which do better layered than others, but I apprehend that any nurseryman cultivating named sorts for sale would find layering a very uncertain and tedious process, and in many instances impracticable. Of course, they could not be propagated true from seed, and I have yet to learn that *Rhododendrons* are the worse for being grafted. [See what Mr. Temple says about the immense loss in America of English *Rhododendrons* on the *Pontic* stock. If English nurserymen will not propagate the *Rhododendrons*, hardy in America on their own roots, they will eventually lose the American trade in this way. Mr. Rogers does not believe in good evidence, and even takes no notice of Mr. Serase-Dickins' evidence about grafted *Rhododendrons* in England. Mr. Serase-Dickins growing *Rhododendrons* largely.—ED.]

In Messrs. Lee's nursery at Isleworth is a fine collection of variegated trees. Perhaps Messrs. Lee would give an opinion as to grafting and seedling propagation of such. I hope other leading nurserymen will speak out, so as to assist either in proving your case or causing it to be withdrawn, as at present it stands in a very unfair position both towards nurserymen and their customers.—W. H. ROGERS, Red Lodge Nursery, Southampton.

[We have no doubt that Messrs. Lee have a large series of grafted and variegated trees; and we shall gladly print what they or anyone may have to say on the subject. But we suspect the reason of the failure of variegated trees and shrubs sent out from nurseries is this very grafting. Most every nurseryman grows variegated trees and shrubs, and there are fine stocks of many years in all leading nurseries, but it is curious how few of the trees are seen in an effective state beyond their nursery life; but no matter how large a stock of variegated and other grafted trees a nurseryman may possess, his testimony will not help much until the other way has been fairly tried by him.—ED.]

Pure streams.—"A," in THE GARDEN, July 20, did well to call attention to the defilement of pure streams, but I think he saddles the wrong horse with the blame. The jerry builder is set down as the curse of humanity, and the English landowner is called upon to exert his rights and arrest the progress of the defiling miscreant. Would it not be as well, especially in the neighbourhood of some

towns, for the landowner to consider what he charged the jerry builder for the bit of land he sold or let him on which to commence his defiling business. If these things were inquired into it might possibly be found that the landlord had driven a hard bargain, and the wretched builder had to build and drain as cheaply as he could in order to let at a low rent and pay the landlord high dues. It is all very well to invoke the aid of poets and painters, but it requires also a little cash transaction to remedy an evil of this kind. I am afraid also if the truth was known about some of these limpid Grecian streams which the poets sang of, they would have resembled in reality the poetical ideal about as much as their Roses did the Gloire de Dijon or Maréchal Niel.—R. J. G. R.

ROSE GARDEN.

THE BUDDING SEASON.

SELDOM, on the whole, have we had a finer season for the budding of Roses. The bark has run with remarkable freedom. With the slightest manipulation, the bud, with its sheath of bark, has ploughed its own way into position, thus padding its own canoe into its new home of fragrance and beauty. This illustration is hardly an exaggeration of the free clean running of the bark of Briers during the budding time. This freedom has greatly facilitated progress and increased the chances of success. But of course in budding there are two factors to success, the bud being really the most important one. Now the genial growing conditions so favourable to the free running of the bark are often somewhat too exciting for the sure filling and partial resting of perfect buds. The buds either break before they can be budded or the shoots grow so long that the base buds do not plump up or fill sufficiently to bear separation from the wood safely, or maintain life long enough on a foreign stock to invite a union with it. Too many amateurs look on buds as mostly passive in the art of budding. They are so much material placed in the most favourable position on the stock for the latter to take them on and provide for them ever after. Now be this theory as it may as to the future maintenance of buds, it certainly is not so during the initiatory stages.

The buds, not the Brier, take the first steps towards union. True, the Brier sends streams of sap, supplies of food within reach of their base. But it does not, cannot, has in fact no vital interest in forcing buds to eat of its stores of provision. The brier is self-contained, complete in itself without any help from alien buds, and unless the latter take the initiative in establishing a vital union, the tide of Brier life but passeth them by and the buds are left to wither and perish. Now for the buds to take these first steps they must have enough vital force to sustain them in life with some to spare, however little, towards growth. So soon as the latter is taken the bud comes on the Brier for food, but the union of bud and stock begins in the first instance in the bud and is continued through every subsequent one until a perfect union between the two is established. But buds may be so weakly and empty as to be incapable of growth, or of feeding from foreign supplies of food, and hence they can but perish. And hence the difficulty of budding some Roses in quantity, notably that charming white Hybrid Perpetual, if it be of that family at all, Boule de Neige. This beautiful fragrant Rose seems so intent on blooming and breaking to bloom afresh, that it seldom plumps up the buds on its first shoots sufficiently for successful budding; hence it is difficult to get a large stock of it, and there are other Roses of a similar character. Some have

even affirmed that most of the smooth-wooded Roses are all more or less so; but I am not prepared off-hand to uphold this opinion. It would, however, be a curious fact were such the case, the semi-spineless Roses taking this method of preventing themselves from becoming too common.

In growing seasons like this, when genial weather has trod so sharp on the heels of a hard spell of drought, Tea and other Roses have rushed into wood so rapidly as to produce a partial dearth of good buds. In cases or gardens where this is or has been generally so, it is better to wait for fat buds than trust to thin starveling skeletons.

Another plan is to bud with a thin, very thin sheath of wood under the bark. This increases the staying or waiting powers of the bud, and sometimes succeeds. The bud may take and succeed pretty well, but the union seldom proves so complete and lasting as when no more foreign wood is introduced with the bud than the medium compacted in its base, and which is transferred into the stock with its bark.

D. T. F.

SERVICEABLE ROSES.

SOUVENIR DE LA MALMAISON.—For affording a continuous supply of cut blooms there is no Rose that I am acquainted with to equal this when grown as a dwarf or bush on its own roots. With us it is the earliest to bloom, and by the time the first crop is over there are plenty of flowers to be had from the strong branching suckers which healthy plants are annually throwing up. The individual blooms are much more durable than those of any of the Hybrid Perpetuals, and a great mass of them is remarkably effective on the dining or drawing-room tables. Few lovers of Roses need to be told that in colour this variety is pinkish white, the full flowers opening nearly flat with a somewhat twisted centre, but all are not aware how easily it can be propagated. All we find it necessary to do is to lift the old plants about every third autumn or spring, and after dividing all that are sufficiently stocky, replant them in fresh loamy soil. Short cuttings of firm young wood from which a bloom has recently been cut with a heel or thin slice of old wood attached, duly dibbled round the side of a 5-inch pot filled with gritty, loamy soil, placed in a close frame and kept watered, close and shaded, soon strike root, and these being potted off singly and kept in a cold frame during the winter will be fit for planting out the following spring.

LA FRANCE is another extremely serviceable Rose. In its habit of growth it more nearly resembles the Teas than Hybrid Perpetuals, being much more constant blooming than any of the latter, with one exception, I have yet grown. On its own roots it thrives admirably, and the strong suckers as well as extra vigorous shoots continue to produce perfect blooms till stopped by frosts. This variety also succeeds fairly well on the Brier stock, and those who have tall greenhouses and conservatories to keep filled with flowers would find a few standard plants of La France in 10-inch or larger pots decidedly serviceable. From such plants we have had three good crops of fine blooms before outdoor Roses were plentiful—the latter blooms being produced from the strong and firm young growth. Being near the glass, standard Roses have an advantage in that the wood is firmer and more free-flowering, and the foliage stronger than is the case with most dwarf plants. Young half-ripened growth may be rooted in the same manner as advised in the case of *Souvenir de la Malmaison*, or 1-foot lengths of ripened growth may be inserted in the open ground in November or earlier with every prospect of their rooting.

BOULE DE NEIGE—The one exception alluded to above is the old *Boule de Neige*. With us, this is one of the few that will long survive on the Brier stock, and it is always most service-

able. Being rather hard pruned, it forms vigorous branching shoots, from which we are enabled to cut small, but very double pure white blooms for several months in succession. This variety ought to be particularly useful to those who have a great demand for wreaths, crosses, and bouquets, as in addition to being white the blooms also stand well after they are fully blown. The foliage is particularly clean and dark green.

CATHERINE MERMET is another noteworthy Rose. It is the finest of all the Tea varieties, and good alike for pot culture or for planting against a sunny wall. It is easily propagated from half ripened wood, kept close in gentle heat till rooted, and succeeds much better on its own roots than it does on any kind of stock. If not starved in any way the top growth yields very fine perfectly shaped flowers, but the very finest are obtained from the strong suckers that are being constantly thrown up from the buried stem. Most of the Teas thrive best on their own roots, but they do not all produce such strong branching flowering shoots and suckers as does Catherine Mermet. The Bride, a white form of the latter, promises to be quite as serviceable; in fact, there is every prospect of its being more extensively grown, as in all probability it is the most perfect white Rose in cultivation. Not till a good stock is well established on its own roots will its full value be realised.

BARON GONELLA, unlike all the preceding, only flowers in summer. It belongs to the Bourbon section, and produces a great profusion of very double deep rose-coloured flowers at a time when most wanted, or just when the first glut of Hybrid Perpetuals is nearly over. In addition to being of free vigorous habit and rather late, the blooms possess the great merit of lasting several days after they are cut and placed in water, and even full-blown flowers are serviceable. This variety can be struck from ripened wood inserted in the open ground not later than November.

W. I. M.

ROSE JOHN HOPPER ON A FENCE.

I HAVE here a rustic fence facing both ways, and it has not only proved very ornamental, but Roses can be cut from it almost from May to November. This is clothed chiefly with climbing perpetual or strong-growing Tea and Noisette Roses; and it never occurred to me to place John Hopper among the climbers. It is, however, a most pleasant surprise to find Rose John Hopper on a fence as shown in the illustration (*GARDEN*, July 27, p. 75). And there are other old favourites, such as *Auguste Mie* and *La Reine*, well fitted to keep it company.

Some of us can look back to the time when John Hopper was all the rage. It rose into favour with a rush, created a furore in gardens and on show stands, and fell almost as rapidly. It was very much so also with its raiser, Mr. Ward, who failed to excel his first great venture, though some of his other Roses were more brilliant, if less chaste.

Fortunately, however, though John Hopper has generally disappeared from show stands, it still abounds in a good many out-of-the-way places, and it is hoped that a sufficiency may be found to set it on many a fence up and down the country. I confess I have never seen it so vigorous as in your engraving; but probably this represents several plants rather than a single specimen. One of the chief merits of what may be called the fence culture of Roses on their own roots is to develop a specially free and easy form of growth, and propagation alike through layers and roots or stem suckers. The latter proves not only one of the most rapid modes of propagation, but the surest means for the invigoration of fence Roses.

Under the fostering conditions of fence culture the root and stem suckers become giants, and the origin and growth of these latter become so persistent, that the fence may readily be renewed or the plants rejuvenated as often as may be desirable. The warmth and shelter of the fence prove invaluable for Tea or other tender or more moderate growing Roses. Of course a good deal depends on the thickness of the fence. This may be little more

than a mere skeleton or thin screen of beauty, or a tangled mass of Roses 1 foot or 1 yard through, clothing both sides of the fence or wholly hiding it beneath a drooping hedge of Roses. D. T. F.

NOTES OF THE WEEK.

Brockwell Park.—A sum of £61,000 has been voted by the London County Council towards the purchase of this much needed park.

Public park at Acton.—The Acton Public Park was recently opened by Lady George Hamilton. It comprises 18 acres of land, and cost £18,000.

Raspberry Superlative.—Mr. Coleman, Eastnor Castle, suggested that we should send you fruit and branch of the Superlative Raspberry, which we now enclose. We consider it far the best in all ways.—**GEO. BUNYARD & CO.**

* * Large and excellent.—**ED.**

Pontederia azurea.—At a recent meeting of the Royal Botanic Society it was mentioned that Mr. C. W. Sowerby had found masses of this plant floating down the river Parana, at Rosario, South America, forming islands of 1 acre or 2 acres in extent.

Carnation Mrs. F. Watts.—This appears to be a really good variety, of dwarf habit, free growth, producing an abundance of blooms which are pure white, with smooth well-formed petals, and very full. As seen at Mr. T. S. Ware's nursery, it is one of the best white varieties in his collection.—**F. H.**

Hardiness of *Stephanotis floribunda*.—In the rectory garden there is a *Stephanotis* growing over the roof of a small greenhouse, and it is now one mass of flower. I have known the plant for six years, but I have never seen it so full of bloom as this year. I saw the plant several times in the winter, and thought it could not live, as the gardener had some difficulty in keeping the frost out. It has had no fire-heat since April.—**C. GOLDRING, Ely Grange, Frant.**

Dianthus Atkinsoni.—As several of your readers have inquired about *Dianthus Atkinsoni*, I thought I would send you a few flowers, as I do herewith. They are taken from a four-year-old plant that has stood quite exposed in all weathers, and the flowers sent are about one-fifth of the quantity borne this summer by the plant.—**JOHN WOOD, Woodville, Kirk-stall.**

* * A coloured plate of this beautiful deep crimson Pink was given in *THE GARDEN*, January 12, 1884.—**ED.**

A fine Disa.—I think the enclosed photograph of a plant of *Disa grandiflora*, which has been grown on by myself from a small size, may be of interest. It is now a stately and beautiful object, and said by a competent judge to be equal to none at present cultivated.—**W. BARNARD, Oaklands, Cranleigh, Guildford.**

* * A many-spiked and most graceful plant, full of flower.—**ED.**

Diplacus glutinosus.—This shrubby plant, although almost always in bloom, is never more beautiful than at this season. It does exceedingly well in pots, and makes a really charming plant. Cuttings strike easily in the propagating frame in spring, and soon make useful-sized plants if potted in some rich soil and well attended to. If large plants are required, shift these into larger pots instead of striking a fresh supply. They soon make plants 4 feet high and flower just as freely; the flowers are of a bright orange colour. A variety of this called *Sunbeam* has larger flowers of a deeper colour.—**G.**

Bocconia japonica.—A large group of this plant, associated with Bamboos, is now one of the finest features in the garden. It is a hardy plant of striking and noble form, and most effective when well placed. It is beautiful alike in foliage and flower. When the shoots first commence to grow, putting forth their handsome leaves, we enjoy their distinct and handsome form, for they are deeply cut into lobes. The shoots become of a silvery hue as they develop, and terminate in huge pyramidal spikes of brownish-white flowers.—**A. H.**

Achillea Ageratum.—A little colony of the above-named kind has been in full flower for three weeks and is still fresh and sweet, showing no signs of fading. The habit is tufted, and the flower-spikes, which each grow about 15 inches high, terminate in a flat head of yellow *Ageratum*-like

flowers, whilst smaller spikes branch out all down the main stem. The plants are in sandy loam, in which they grow freely. Seed is also abundantly produced, for seedling plants have sprung up by hundreds in the gravel of the walk close by.—A. H.

Carnations at Penshurst.—Some of the large borders at this old place are now filled with this popular and charming old flower. Most of the plants are seedlings, home-saved and home-raised, and among them may be found some very fine varieties. As there are several thousand plants this is not to be wondered at, and Mr. Bridges is now busy marking and propagating the best. Several fine varieties have been raised at this place, the two best being the well-known *Pride of Penshurst* and *Sacharissa*. The last is a beautiful variety, and no doubt in time will become as popular as the first.—W. H.

The Baneberry (Actæa).—The different varieties, or rather species of this small handsome group are now in their full beauty. *A. spicata*, the European representative, is a really charming plant, and an excellent subject for the rock garden. The fruit is of a black or blackish colour, and peeping here and there from amongst the ample handsome foliage, is at once highly ornamental and lasting. *A. rubra*, a species from Hudson's Bay, is one of the best. The fruits, of a bright, shining cherry-red, large and tempting, are produced more freely than on the others. *A. alba* is also a native of America, being found in rocky woods from Canada to Georgia, and west to the Mississippi. It resembles *A. rubra* very much, but the berries, instead of being red, are milk-white and very attractive. The closely-allied genus *Cimicifuga* is a very common one in gardens now-a-days, its large feathery racemes of white flowers being very showy in mixed borders, &c.

Syringa japonica.—I was very busy last week, and could not answer you about *Syringa japonica* and *Ligustrina amurensis*. All that I may add on the subject is that the plants I received from America under the name of *S. japonica* were young seedlings, coming from seeds collected on the *Syringa japonica* of the Arnold Arboretum; that I received afterwards from Professor Sargent himself seeds which came up, and gave the same plants as the above; that I recently saw at the Museum of Natural History at Paris a number of young plants of *Syringa japonica* identical with mine. The branches which I sent you being totally different from those of any other species of *Syringa*, either *Josikæa*, or *Emodi*, or *villosa*, or *pubescens*, or *pekinensis*, must necessarily belong to the true *S. japonica*, very different from *Ligustrina amurensis*.—V. LEMOINE, Nancy.

Aloes as flowering plants.—There is a decided beauty in the flowers of many of the African Aloes, but their occurrence in ordinary collections is exceedingly rare. The objection to the Agaves (American Aloes) is the large unwieldy proportions of the plants, and the rare occasions on which they flower. This objection, however, does not hold good where there is space to house them in winter, as during the summer they may be used out of doors with very fine effect for the embellishment of terraces, &c., in large gardens. In the beautiful garden at Blenheim this valuable quality in Agaves is fully recognised. The African Aloes are comparatively small, and they bloom without fail every year. The flowers last a considerable time and are elegant in form, as well as richly coloured. In the succulent house at Kew some beautiful heads of Aloe flowers are now exceptionally attractive. The *Gasterias* and *Haworthias* (Pearl Aloes) are also beautiful. Certainly many of these plants deserve a great deal more favour than they receive at present.

Mucuna imbricata.—This striking stove climber has been an attraction in the Palm house at Kew for many years. It does not appear, however, to have got into other gardens, notwithstanding its extraordinary character, and, as we think, distinct beauty. Like most of the *Mucunas*, it is a stout, quick-growing climber, with large ternate leaves and drooping axillary racemes of large black-purple flowers. Hanging from the roof of the house, these flowers have the appear-

ance of bunches of black Grapes. This species is the only one that has proved a success as a garden plant; the others grow freely, but do not flower. A recently introduced species from Northern China and reputedly hardy has enormous racemes of flowers, much larger than those of the *Wistaria*. It is in cultivation at Kew and promises to establish itself out of doors. Some day, perhaps, we may have the pleasure of adding this *Mucuna* to the list of grand hardy climbers, and as a possible rival to *Wistaria sinensis* itself.

Impatiens Hawkeri.—This fine plant does not always give satisfaction, some cultivators failing entirely with it. Our experience has taught us that in a close moist house the plant invariably falls into bad health; whereas, in an airy sunny position with plenty of moisture it grows and flowers perfectly. Planted in shallow borders near the doors of some of the stoves at Kew, it is now in good health and flowering freely. The same applies in the case of the several other stove varieties of *Impatiens*. *I. Sultani* is perhaps more satisfactory when treated as an intermediate or warm greenhouse plant. Indeed, we have seen it thrive in a sunny border out of doors during a warm summer. *I. Hookeri*, the well-known Indian and Ceylon species, is said to be happiest when treated as a greenhouse plant. Hitherto we have grown it in the stove with but indifferent success. We learnt only recently from a reliable source that in Ceylon this species thrives only at very high elevations.

The Sooly Qua.—One of the many varieties of *Luffa spherica* is known by this name. It is remarkable for the size of its handsome yellow flowers and the dimensions of its fruit. An example of it in the Water Lily house at Kew is one of the most striking amongst the many kinds of tropical Gourds for which this house has during the last few years been notable. The *Luffa* has a fruit a little over 5 feet in length and nearly 6 inches in diameter in the thickest part. It is green, and appears likely to keep fresh on the plant for several months. The *Luffas* are well known in England as the source of a useful article known as the vegetable sponge, this being simply the fruit washed free of the outer skin and the inner pulp and seeds, a closely woven network of soft tough material remaining. In some of the colonies the young fruits of the several kinds of *Luffa* are a favourite vegetable. They are simply boiled and used as we use a Vegetable Marrow.

Use of the word "alba."—There are many Latin words signifying some special characteristic in a plant that are loosely employed and made to convey a wrong meaning. No word is more abused or more often used especially in respect to Orchids than "alba." It seems a custom to tack "alba" to the name of three out of every six flowers that show a trace of white. This is misleading and confusing. The other day an Orchid was labelled *Sobralia xantholeuca alba*, in which there was scarcely any true white, and in one description was given as primrose, an incorrect definition, but showing how absurd "alba" was applied to such a flower. There is a *Cattleya Mendeli alba* which has no right to the name, and other instances might be given. Those trying to effect an alteration in the naming of Orchids will do well to alter such names where they have no right to be given. "Alba" is a good commercial word. It flavours of something good, and hence its indiscriminate use.

Flowering Begonias as bedding plants.—It seems impossible to overrate the value of these for bedding purposes. The new types of recent years—short, stocky, vigorous growers and free bloomers which have been introduced in previous years—are well adapted for employment in this way. In the matchless flower garden at Heckfield Place, Mr. Wildsmith has this season somewhat largely employed single-flowered Begonias, and not only are they highly effective, blooming freely and displaying rich masses of colour, but they stand the wet weather remarkably well. I was at Heckfield on Sunday, the 21st of July, and in addition to frequent heavy showers of rain, a thunderstorm burst over the gardens early in the afternoon, and the heavy rain fell in torrents, completely saturating everything in a few minutes. I went on to the ter-

race garden soon after the storm ceased, and I was astonished to find the *Begonia* flowers looking as fresh and bright as ever under the gleams of sunshine that followed the course of the storm, while semi-flowering subjects presented to view a woe-begone appearance. The small specimens of *Retinosporas* used in the winter arrangement of the beds were left in them in spring, and it was among these the *Begonias* were planted. The combination is excellent; the golden *Retinosporas* with their vari-coloured green-leaved congeners go well with the *Begonias* and compel admiration.—R. D.

Tropæolum speciosum.—I think I never before saw a finer specimen of the gorgeous Flame Nasturtium than is to be found growing against the north wall of the gardener's cottage at Highfield, Heckfield, Hants. This plant has spread itself to a considerable width, and has reached nearly up to the eaves of the roof, and then falling over somewhat to the front, there is revealed to view a brilliant mass of colour. Mr. Davidson, the gardener at Highfield, informed me that he planted the *Tropæolum* four years ago, and that it has thriven marvellously. Soil and position alike appear to suit it. The site of the gardener's cottage is a somewhat elevated one, but the spot is cool and moist. This fine species is apparently finding its way into English gardens in the south. I think an impression prevailed at one time that this *Tropæolum* required the cool, moist district of the north of England and Scotland to bring it to perfection.—R. D.

NOTES FROM THE PARIS EXHIBITION.

THERE are about 5000 Roses planted in beds in the garden of the Trocadero, at the Paris Exhibition, and it was said that the general appearance when in bloom would be veritably fairy-like. Unfortunately, the summer was very hot, the trees grew very little, and what flowers appeared were on short growths and very fugitive. Since the first bloom, however, there have been cloudy weather and cool showers; the trees have made fresh growth and are now blooming a second time, and the appearance, although not quite fairy-like, is much more satisfactory. There are fewer flowers, but they are better formed, well coloured and shown off by healthy green. Now is a good time to see the value of the different kinds for late blooming.

Some beds of florists' flowers are well worth noticing. A large bed of seedling Carnations has been a mass of many colours, but amongst them are very few sterling novelties. One specially noted is a strong growing variety with lemon-yellow coloured flowers. A bed filled with Cockscombs is at the present time the most conspicuous in the ground. The foliage resembles that of *Mangold Wurtzels*, and the combs are each 12 inches to 18 inches broad, by 4 inches to 6 inches thick, crimson, pink, and yellow. Near this is a bed of yellow and red *Celosias*, very showy. A fine arrangement of foliage is produced by a bed of *Amaranthus tricolor* and *bicolor ruber*, surrounded by the dark melancholic *ruber*. *Zinnias* have done very well. *Dahlias*, *Balsams*, and *Montbretias* of various kinds are coming into bloom and will soon make a grand display. A charming effect is produced in a bed filled with bushes of *Bouvardia Humboldti*, between which have been planted *Montbretias*; the graceful spikes of orange-coloured bloom rising from amongst the white are very beautiful, besides which, in the evening the flowers of the *Bouvardias* scent the air with a delicious perfume.

A bold mound of shrubs has for centre a group of Silver Maples about 12 feet high; surrounding these are two rings of the purple *Prunus Pissardi*, 6 feet and 3 feet high; then a hedge of light yellowish green *Spiræa opulifolia aurea*, 2 feet high; around this *Cornus sibirica elegantissima*; Sage, green and white, 1½ feet; and finally, a border of dark purple *Coleus*.

Good showy border flowers are *Xeranthemum annuum album*, single white *Immortelle*; *Coreopsis coronata*, clear yellow; *Scabious*, dwarf, compact growth, pale blue; *Statice Bidwilli*, lemon-yellow; *Phlox Drummondii*, dwarf, vermilion, very bright; *Pentstemon heterophyllus*, blue; *Lobelia cardinalis* Queen Victoria, rose coloured, on dark foliage.

R. J. G. R.

ELVETHAM PARK, WINCHFIELD,
HANTS.

In the accompanying picture the artist evidently had a greater desire to make the church at Elvetham a more prominent object than the beautiful terrace garden from which the view is taken, and that he has succeeded in so doing the merest glance at the picture will show. The church, although about 400 years old, is yet in perfect repair, and forms the boundary to the east side of the flower garden, a very small portion of which is well shown in the foreground of the picture. The whole terrace is a perfect plateau, raised to the level of the ground-floor rooms of the mansion, the whole being supported on the south and west by a retaining wall that is so completely covered with rare climbers in variety

natural manner as to completely destroy all formality. The following description of the planting of two of the beds will serve to show the style of planting generally. Eucalyptus and tall Heliotropes are used as standards, and the edging of Lobelia and variegated Alyssum, Pentstemons, variegated Pelargoniums, and Heliotropes fill out the bed. No. 2 bed has for standard plants Abutilons and Eucalyptus, and is edged with variegated Pelargoniums, the mixture of plants being Calceolaria amplexicaulis, Salvia patens, and Henry Jacoby Geranium. The general effect is, I consider, unique. In plots in the outlying portions of the pleasure grounds are fine clumps of the best kinds of herbaceous plants; some of the clumps of the Japanese Anemones measure over 1 yard across,

Plums the same. Strawberries, Gooseberries, and Currants immense. Mr. Jones, the gardener here, having visions of the requirements in the scented plant line for the furnishing of the rooms of the mansion in winter, has this season devoted one of the quarters of the kitchen garden to the preparation of the plants, and their appearance shows that the attention bestowed is of the right kind. There are immense batches of sweet-scented Geraniums, Bouvardias, Aloysia citriodora, and others, of which I failed to take note. These will all be potted up towards the middle of next month, and be placed in close pits till established, after which more airy treatment in the houses will give the finishing touch to the preparation of the plants for the decora-



Elvetham Church, Hants, from Lord Calthorpe's garden. Engraved for THE GARDEN from a photograph by F. Mason Good.

as to make it one of the finest features of the garden. Escallonia macrantha, Magnolias, Clematisses, Wistarias, Roses, Pyrus, &c., commingle together in such natural and wild profusion, that one is compelled to stop and admire. The front of the mansion, which lies to the extreme left of the picture, is covered with creepers, that are allowed to ramble in the same natural way, and Lord Calthorpe having a great fondness for sweet-smelling plants, Chimonanthus, Wistarias, and sweet-scented Clematisses are the climbers used; in addition to which, during the summer season, every nook and corner under the windows are filled with Heliotropes, scented Geraniums, the scented Verbena (Aloysia), Roses, Violets, and Wallflowers. The flower beds are of immense size, and though of formal design, they are planted in such a loose,

and the various sections of Pæonies are also well grown. The various kinds of Conifers are fairly well represented, and some of the smaller spiral growing kinds too well, because they present such a formal appearance. An avenue of Irish Yews and variegated Maples (Acer Negundo variegata) has a terribly funereal appearance. One of the two plants should be taken away, but even then the sombre aspect would be too marked for the limited extent of the ground on which they are planted.

THE KITCHEN AND FRUIT GARDEN.—This lies low, and being in close proximity to water, the crops, which are frequently seriously damaged by late spring frosts, appear to have escaped this year, as all vegetable crops are first-rate, and there is a fairly good crop of both Apples and Pears. Peaches are a moderate crop;

tion of the rooms of the mansion throughout the winter.

PLANT HOUSES are not numerous, and I should think hardly equal to the demands made on them. The most recent addition is a structure of handsome proportions—a half-span, 60 feet long and 16 feet wide, in two divisions, one as a plant stove, the other for Orchids. The inside arrangements are complete with slate staging resting on angle iron supports which are strong and durable, and at the same time have a neat appearance. Amongst the collection of Orchids the following are in good form: Aerides odoratum, A. suavisimum, Angræcum eburneum superbum, Ansellia africana, Cattleya Mendeli, C. Mossiæ, C. Trianae, and many other varieties, Cymbidium Lowianum, C. eburneum, Dendrobiums in variety, Epidendrum atropur-

pureum, *Lælia* in variety, *Vanda suavis*, and *V. teres*. In the cooler section the following were noticeable: *Disa grandiflora*, *Odontoglossum citrosum*, *Roezli*, *Coelogyne cristata*, *Maxillaria venusta grandiflora*, *Harrisoni*, and *Pilumna fragrans*. Of stove and greenhouse plants that are grown in quantity, but few others than such as have sweetly-scented flowers are considered worthy of cultivation. The several varieties of *Jessamines* have a first place, and next follow *Eucharis*, *Stephanotis*, *Gardenias*, *Francisceas*, &c. *Mignonette*, *Tuberoses*, *Pinks*, and *Violets* in frames have of course to be grown in quantity.

FRUIT HOUSES consist of vineries, Peach, Fig, Cherry, and Apricot houses. There are excellent crops of Grapes, including Muscat of Alexandria and Hamburg, the latter superbly finished. Lord Calthorpe has a great antipathy to the late thick-skinned Grapes, and therefore only one or two Vines of *Alicante* are grown, and, as a matter of course, the Grape season at Elvetham is but a short one. Peaches and Nectarines are done well; the specimens of *Belle-garde* and *Royal George* at the time of my visit (middle of July) were marvellously fine, as were *Rivers' Early* and *Violette Hâtive* Nectarine. Of Figs, *Brown Turkey* is the only variety Mr. Jones cares about, *Negro Largo* and *White Marseilles* being uncertain croppers. Cherries do well. Four trees of *Bigarreau Napoleon* and *Elton* were loaded with as fine fruit as I have ever seen. W. W.

CHRYSANTHEMUMS.

E. MOLYNEUX.

MANURES FOR CHRYSANTHEMUMS.

CHRYSANTHEMUMS need a change of food; therefore those who are in a position to apply stimulants in variety stand a better chance of success. Soot I consider an almost indispensable agent to the growth of *Chrysanthemums*; therefore, I place it first on the list. It gives a dark colour and robustness to the foliage which are pleasing, especially as they indicate thorough health. Soot is most easily applied in a liquid state. The best way to prepare it is as follows: Place at the rate of one bushel in a bag to 100 gallons of water; the bag should be sufficiently fine in the mesh, so that the soot does not wash out into the water.

Of all manures most easily obtained, especially by growers residing in the country, animal manures are depended upon most largely. Local circumstances must be considered in obtaining these as well as other stimulants. Various kinds of liquid manures, such as the drainings from the cow houses and stables, are excellent; perhaps the former is the better kind to use, as it is cooler than the latter. In some instances the liquid from the places named cannot be collected in tanks direct; a very good substitute then may be had from a heap of mixed manure. The best plan is to throw clean water over the heap, and allow the water to soak through the manure and drain into a pit at the side of the heap. Sheep manure, where it can be had direct from the fields, makes a capital stimulant applied in a liquid form, so also do the droppings from deer or cow manure made in the same way. Fowl's manure may be treated in the same manner, and is most efficacious as a stimulant. Manure of the kinds named should be used in the same manner as that described for soot, as the qualities beneficial to the plants are in this manner extracted without the inconvenience of solids. The varieties of artificial manures extend over a wide range, are very simple of application, and decidedly efficacious

if used according to the directions given with each. But in many cases care is not sufficiently exercised; experiments are tried, disappointment follows, the vendor is blamed for the manure not doing impossibilities; whereas in many cases it is the manner in which it was applied that is at fault. The chief of ammoniacal manures which promote quick growth are sulphate of ammonia and nitrate of soda, but these if applied injudiciously, more especially in a wet season, often cause a failure. Phosphatic manures (bones in different forms) contribute to firmness, and are quite safe to use; indeed some growers depend mainly upon bones for the growth of the plants from the start to the finish. Guano finds favour with some growers, and is, when of good quality, very stimulating; a 4-inch potful to 36 gallons of water, kept thoroughly stirred when being used, is a safe quantity. Nitrate of soda used judiciously to strong growing varieties when the pots are full of healthy roots has a quick effect upon the foliage and growth of the plants. Should the plants not appear to be making free growth, nitrate of soda quickly excites the plants, and prepares them for other food. Half a teaspoonful powdered finely and watered in once or even twice in a season is sufficient for a plant growing in a 10-inch pot. Should the season promise to be a wet one nitrate of soda must not be used, as there would be a greater difficulty in maturing the growth. Plants moderately furnished with roots, owing to their being weak-growing varieties, or through ill health, should not have any nitrate, otherwise the leaves are certain to be burnt around the edges, thus causing a serious check to growth by a partial, if not a total, loss of many fine roots. Sulphate of ammonia in careful hands is an excellent manure, perhaps unequalled as a stimulant, but it must not be used unwisely. My experience of it is, that it imparts colour to the leaves of the plant and richness to the blooms, which is not excelled by any other manure. The cultivator should be guided by the state of the weather at the time of application, and also by the state of the roots of the plants; indeed, this latter is the all-important point to consider. Sulphate of ammonia should not be given to the plants until they are well furnished with roots. Used in a liquid form is the correct way to apply it. Many people are afraid to use it as a stimulant because they think it makes the blooms damp, which it assuredly does, but it is when used injudiciously; for instance, too strong doses often kill the roots, not only on the surface, but halfway down the soil in the pots. Especially is this the case when the sulphate is laid on the surface in a dry state and watered in. If plants are not thoroughly well supplied with roots, sulphate of ammonia should not be given them at all, as it will do more harm than good in that manner. The best way to apply sulphate of ammonia is by dissolving a quarter of an ounce in 1 gallon of water—weak liquid manure from the farmyard tank is better—commencing as soon as the flower-buds are swelling freely, increasing the strength gradually until half an ounce is reached to each gallon of water, to be given once a week. The advantage of chemical manures is their easy application, and each cultivator of experience has his own particular kind. For the beginner printed instructions accompany each kind. In the case of animal manures it is difficult to define the quantity to use for making liquids; a safe guide is to use the liquid about the colour of brown brandy.

How to feed the plants is the next consideration we have to make. At the outset I would say avoid excessive use of any kind; much

better it is to give liquid manure weak and often. I have seen plants killed by a too strong dose of sulphate of ammonia, and so I have with one of guano, and I have seen nearly all the leaves turned suddenly yellow by the misuse of soot; therefore I can speak with confidence on this point. We commence with soot water, just giving it to the plants every time they need water for nearly a week, then withhold it for a time, when it is again used, this time with liquid manure from the farmyard tanks, or from that made from sheep's manure. After the buds are formed and swelling freely, stimulants should be given regularly, varying them constantly, as a change of food is desirable. Whatever sort is used it should not be given more than three or four days at a time. During a spell of wet weather it is not possible to use liquid made from animal manures; a little of any of the artificial manures should be sprinkled on the surface of the soil. By this means the plants receive nourishment; whereas if liquid manure were entirely depended upon, the plants would not be in a state to receive intervening waterings. In the case of weak-growing kinds stimulants should be given to them in a slightly weaker state than to stronger kinds. Over-feeding brings on premature bud-formation or malformation of the petals, caused by forcing the large outer petals too quickly and not allowing the centre of the flower-bud to fill up by degrees as it should do. When the soil in the pots is approaching dryness is the proper time to apply the stimulants. When the flower-buds are forming in the points of the shoots, a check temporarily to the growth takes place. At this time feeding the plants should cease for several days, as undue excitement to the plants is not desirable at that stage, but as soon as it can be determined that the buds are swelling again, stimulants may be given. There is also a difference of opinion amongst cultivators as to the proper time when feeding the plants should cease, and dependence placed solely on clear water for the finishing of the blooms. Some say that directly the colour of the petals can be seen is the correct time to cease feeding, as stimulants take away the colour of the flowers. My experience is in direct opposition to this theory, as that is just the stage when the plants need assistance to develop the blooms thoroughly. Continue to feed the plants until the blooms are three parts expanded, then cease to use stimulants, as it will be found that plants in that stage do not require water nearly so often as those which are in a more backward condition. From the time that the blooms are three parts developed the plants will have sufficient energy bottled up to unfold the blooms to their utmost capacity without artificial aid.

Weak growing varieties.—There are several varieties of constitutionally weakly growth which cannot be dispensed with if exhibition blooms are desired. The finest blooms it is possible to obtain from some sorts that are decidedly weak in growth—for instance, *Jeanne Délaux*, one of the most telling sorts in a collection of cut blooms—strengthen a stand considerably in the opinion of good judges, who take into consideration the difficulty there is in cultivating these weakly growing sorts to the highest perfection. The difficulty in their growth is that they do not make roots so quickly as stronger growing sorts. Feeding these weakly growing kinds cannot be carried on in the same manner as in the case of the stronger growing kinds. One great mistake that should not be indulged in is that of placing the plants in pots which are too large for the amount of roots made. Pots 8 inches in diameter are large enough to flower these sorts in. The soil should be of a lighter description than for the bulk of the stronger growing sorts, and it should not be pressed so firmly

into the pots. If all the weakly growing sorts are stood by themselves during the summer more regular attention can be given to them. They do not require water to the roots so often as others which grow more robustly, as if this is done there is a possibility of making the soil sour. At no time should these weakly growing varieties have water applied to the roots unless they require it. Stimulants should be given in weaker doses and less frequently than is requisite for the ordinary growing sorts. Especially should weak growing sorts be kept free from insect pests, which are more liable to attack them than the stronger growing kinds. For the advantage of those who have not gained experience of the delicate growing kinds, I will name a few of those which are desirable kinds for cultivation and which require a special course of treatment. *Incurved*.—Lady Carey, Mr. Bunn, Beverley, Mrs. W. Shipman, Princess Beatrice, Nonpareil, Lady Slade, Cherub, Lady Hardinge, Sir Stafford Carey, Le Grand, and Perle Precieuse. *Japanese*.—Jeanne Délaux, Criterion, Golden Dragon, Margaret Marrouch, Martha Hardinge, Balmoreau, M. Ardene, Mr. John Laing, Bronze Dragon, and L'Adorable. *Anemone varieties*.—Mlle. Cabrol, Fleur de Marie, Mme. Clos, and Margouline.—E. M.

NEW VARIETIES.

To the Chrysanthemum cultivator of experience there is always a craving after novelties or new kinds. Most persons like annually to try a few plants of the latest additions to an already overloaded collection of varieties, and unfortunately, many sorts when they flower, instead of being improvements on existing kinds, are often inferior. When a few varieties, which have been recommended by someone who has reasons to suppose that some, if not all, will turn out acquisitions, can be taken in hand each year, then the pleasure in cultivating new kinds is rendered somewhat of a certainty. In cultivating new sorts it is well to place them by themselves, so that a special watch upon the various phases of their growth may better be obtained. Every cultivator should make himself thoroughly acquainted with their habits of growth, including the form of the leaves, colour of the stems, and the manner in which the various breaks are formed. All this will be useful information for another year's practice, should the variety prove itself worthy of extended cultivation. Each sort has something peculiar to itself either in form of growth or in some other way, and is quickly noted by the watchful cultivator. All side shoots or suckers which can be obtained should be inserted with a view to increase the stock later on should the variety be deemed worthy of second trial. I do not mean that all the cuttings should receive the same treatment as those of well-known and tried kinds.

Fortunately, the new kinds on trial this season show a disposition to a dwarf and sturdy habit of growth, which is of the utmost importance. It is the extremely tall growth of some varieties which it is necessary to obtain to see the best results that renders the production of large blooms unpopular. It is not always the size of the individual flowers which is despised; it is the great height to which some varieties grow which renders them both so unwieldy to manage and house. Some varieties grow to a height of 12 feet before they produce a bloom at all. What is wanted is sorts like *Avalanche*, for instance, which will produce flowers either large or small as desired, and not grow more than 4 feet high, and in many instances from 2 feet to 3 feet only. This variety is, perhaps, the most sturdy grower we have, and carries abundant foliage right down to the top of the pot under ordinary cultivation. Other varieties at present point to this style of growth, and my earnest wish is that more of the same character will follow.

E. M.

Is the "jumper" injurious to Chrysanthemum buds?—Mr. Molyneux (page 52) says "this fly in the young larva state, as 'cuckoo spit,' secretes itself in the points of the shoots, and quickly causes the young leaves to turn up." Permit me

to ask Mr. Molyneux if he has any doubts on the matter, as for many years I have grown several hundred plants, and though carefully watching the action and movements of the "jumper," have hitherto felt inclined to consider him harmless? I may be wrong, but, in any case, he is not a serious enemy, for the first shower of rain, or, in its absence, the first quick syringing washes him and his frothy surroundings away. Mr. Molyneux is such an accurate and close observer, that I am inclined to think he may be right, but there can be no harm in your inviting the opinion of other growers. Black aphid is the only insect pest I notice among Chrysanthemums just now, and tobacco powder quickly routs him. No earwigs so far.—W. J. MURPHY, *Tramore*.

STOVE AND GREENHOUSE.

MONTBRETIAS IN BLOOM.

AMONG the plants that have successfully engaged the attention of the hybridist within the last few years must be placed the Montbretias, many of the newer forms of which are now in bloom, and very beautiful they are either in the open ground or when grown in pots for greenhouse decoration at this season. The oldest of these hybrids is *M. crocosmiflora*, the result of a cross between *M. Pottsi* and *Crococsmia aurea*, which was raised some years since by M. Lemoine, of Nancy, who has since that put into commerce many other new varieties. A coloured plate of three most select Montbretias was given in THE GARDEN, May 28, 1887, in which their beautiful blossoms were well shown. The best of those that I have at present seen, all of which are hybrids from M. Lemoine, would include *Etoile de Feu*, bright orange-red with small yellowish centre; *Bouquet Parfait*, large rich yellow centre with the edges and tips of the petals orange-red; *Gerbe d'Or*, rich golden yellow; and *Solfaterre*, more of a sulphur tint. This last is remarkable from the fact that while its blossoms are the lightest coloured of any, the leaves are of a peculiar blackish green, much deeper in tint than those of any other variety. *Phare* has the upper part of the petals orange-red, inner part rich yellow, the partially expanded buds being bright orange-scarlet towards the tip; *Pyramidalis*, buff-salmon with an orange shade rather lighter in the centre. *Pottsi grandiflora* seems to be stronger growing and with larger flowers than the typical *Pottsi*. Planted out in good loamy soil, these Montbretias will grow and spread rapidly, their Couch-like rhizomes being pushed out in all directions. The plants are quite hardy. There is one drawback in connection with them, and that is the fact that many of the leaves turn yellow and brown at the points before the flowers open, and this of course greatly detracts from their appearance. Where the soil is light and sandy they are far more liable to injury in this way than where it is of a more holding nature, and consequently this should be borne in mind when planting them. The finest foliage and flowers are borne where the ground is fairly moist throughout the summer, and where the plants are so situated as to be slightly shaded during the hottest part of the day. If grown in pots for the greenhouse these requirements should also be borne in mind, and in that case, a good way to treat them is to plunge the pots in a bed of coal ashes, where they will be somewhat shaded, till the earlier flowers commence to open when they can be removed under glass. On no account must they suffer from want of water, and liquid manure occasionally will also be of service. They are easily increased by division, for the rhizomes make rapid progress, and where favourably situated seeds are often ripened, that germinate readily and grow away quickly afterwards.

H. P.

Double Petunias.—These are certainly very showy and extremely useful where a greenhouse or conservatory has to be kept gay at all seasons. Still, at their best, they are somewhat heavy in appearance, which might, however, be obviated if raisers would pay more attention to the lighter-

built semi-double flowers. The weight of the flowers destroys their value for outdoor culture, as the least shower causes the blooms to become over-weighted and droop, while the single flowers are in no ways affected by it. Great numbers of Petunias have been sent from the Continent within the last few years as new varieties, but I fail to find any improvement in them. A packet of seed, provided it is saved from a good class of flowers, will often give more satisfactory results than a long list of named varieties.—H. P.

Hæmanthus puniceus.—Most of the species of *Hæmanthus* produce remarkably showy blossoms, and this variety is no exception to the rule, for just now it supplies a very bright bit of colour in the greenhouse. The flowers are borne in large, densely packed heads, their colour being orange-red, with yellow stamens. It is by no means difficult to grow, the compost best suited for it being good open sandy loam, lightened, if necessary, by a little leaf-mould. The temperature of a warm greenhouse is at all seasons sufficient for many species of *Hæmanthus*, and care must be taken not to over-water them during the winter season. They flower best when encouraged to grow as rapidly as possible, and then rested afterwards. Another species that will succeed well in a greenhouse is the *Natal Blood Flower* (*Hæmanthus natalensis*), which has this great advantage, that it flowers during the dull days of autumn and winter.—T.

Mandevilla suaveolens.—The large, pure white *Convolvulus*-like flowers of this plant render it at this season of the year one of the showiest among greenhouse climbers, for though the individual blooms do not remain long in perfection, a succession is kept up for a considerable time. One thing to bear in mind is that this *Mandevilla* must not be planted where a climber that will be effective during the winter months is desired, as at that season it is quite bare of foliage as well as flowers. To be seen at its best, this *Mandevilla* requires to be planted out in a prepared border, as if confined in a pot it can seldom be induced to thrive. It is a native of Chili, and in this country the protection of a cool greenhouse is all that is needed for its well-doing, except to keep the foliage clear of red spider, which are very partial to it and quickly disfigure the leaves. A liberal use of the syringe is the best way to keep this pest in check.—H. P.

Swainsona Osborni.—One might search most gardens without finding a single representative of this genus, yet all the Swainsonas are very pretty flowering greenhouse plants. Among the best is *S. Osborni*, which seems to vary somewhat in habit, for while a few may be induced to flower well when not more than 1 yard high, most of them are of a rambling style of growth, and are well fitted for furnishing a rafter in a greenhouse, or for some similar purpose. The bright green pinnate foliage is very light and elegant, while the flowers, which are borne in large racemes, are Pea-shaped and of a bright pink hue, blotched on the upper petals with a deeper colour. The Swainsonas may be struck from cuttings, or seeds are sometimes produced, and if sown as soon as possible after they are ripe they will germinate readily. The genus *Swainsona* is nearly allied to the *Clianthus*, and one of the finest specimens of *C. Dampieri* I have ever seen was grafted on to a seedling *Swainsona*.—H. P.

Cyperus Meyenianus.—Under the name of *Cyperus distans* this species has been, within the last few years, grown in considerable numbers, especially by Messrs. Low and Co., and though perhaps for general purposes not equal to the older *C. alternifolius*, yet it is very distinct therefrom and well worth growing for the sake of variety. *C. Meyenianus* is somewhat in the way of *C. laxus*, but the foliage has far more substance, the leaves at the base being quite Sedge-like, while the inflorescence is far more compact. All of them are plants of easy culture, the principal consideration being to supply them well with water, while such subjects possess the great advantage of being quickly grown, so that where employed for decoration and injured thereby, others are readily grown on to take their place. All of the

above ripen seeds, from which, as well as by division, young plants can be quickly raised. The seed should be sown soon after ripening, as if kept too long it takes a considerable time to germinate.—H. P.

WORK IN PLANT HOUSES.

BOUVARDIAS.—To have the plants forward enough for blooming in the autumn and winter, it is requisite to strike the cuttings about the beginning of the year. But in private gardens the work is very often put off until spring, through which, unless the plants receive some heat during the summer and every attention is given them, when the autumn comes round they are far too small to carry the amount of bloom that should be forthcoming. The larger they get, provided the growth is proportionately strong, the more flowers they will bear, and the longer time they will continue to bloom. Plants that were struck late should now be large enough for the final shift; 6-inch pots will be big enough, as the time in which they have to grow is short. As advised for the earlier struck stock, give them good rich soil composed of turfy loam, with about one-third of rotten manure and leaf-mould added, and some sand. If the plants have had proper attention as to stopping, they should now have enough shoots to furnish them sufficiently, as a moderate number of stout branches are much preferable to a thicket of puny weak ones. Not a day should be lost in pushing the plants on. The cold pit or frame treatment, which, with careful husbanding of the solar heat by closing the lights early in the afternoons, answers for early stock, will not be sufficient for these late examples, unless the weather for the next six weeks is unusually bright and hot. Fire-heat, with a moderate amount of air on during the early part and middle of the day, shutting up in good time with a free use of the syringe at the time that the house is closed, will yet do much to bring the plants to a useful size. When pushed on in this way it is necessary that they should be kept nearer the glass than if they are grown more slowly. In addition to liberal treatment with rich soil, a dressing with Clay's manure should be given in about three weeks after the plants are potted. Earlier struck stock that have now been some time in the pots that they are to bloom in must be placed far enough apart to allow the requisite amount of light to reach them on all sides. Overcrowding is a mistake with all plants, but in the case of things of this nature it defeats the intention, as a limited number that are well managed, with sufficient room for the light and air to play through the branches will give more bloom than a larger quantity that have been grown under less favourable conditions. The pots will now be full of roots, so that they will require manure water once a week. When the weather is very bright, a thin shade is necessary during the middle of the day.

POINSETTIAS.—Late struck cuttings should be pushed on. Get them into the pots in which they are to flower without delay; 6-inch will be large enough for this late batch, as much may be done to keep them growing freely by the use of manure water, or by concentrated manure sprinkled on the surface of the balls. Plants that were struck early and such as have been grown on from last year's stock after being cut back will soon have attained as much size as necessary, in which case they may have more air and less moisture in the atmosphere. The plants both large and small must have enough room so that they can stand clear of each other, as if crowded the flower leaves will disappear before the plants bloom. This has a weakening effect and interferes with their appearance.

EUPHORBIA JACQUINLEFLORA.—As has already been shown, when treating of this fine winter bloomer, it is never seen in its best form unless the plants receive much more assistance with manurial stimulants than is usually given them, or than is generally supposed that a comparatively spare-rooted subject such as this *Euphorbia* would bear. Much depends as to the size which spring-struck stock or those which have been grown on from last year's stools attain on the way that they are treated during

the next six or eight weeks. With a brisk stove-heat and a liberal use of the stimulants named, the plants will grow apace. They must have plenty of light by keeping them with their tops close to the roof of the house or pit in which they are grown, lowering the pots gradually as the heads extend. In this manner the growth gets hardened. Under the conditions advised the robust character of the plants is such as to enable them to bear more liberal feeding than as usually managed they are capable of.

EUCHARIS AMAZONICA.—When treated under the system of short periods of growth and of rest, this most accommodating plant often flowers three times in the course of twelve months, but it is a question if the plants will long continue to maintain a healthy state under such high-pressure treatment. By what I have seen in several places recently where this *Eucharis* has been largely and for some years successfully grown, it is evident from the condition of the stock that though free from the destructive mite, the plants feel the effects of the severe ordeal which the frequent change from a hot and moist to a cool and dry state subjects them to. With generous treatment in not allowing the bulbs to remain too long overcrowded in the pots; with enough, but not too much heat during the periods of growth; and by avoiding the extreme dry state of the roots, which when put to rest the plants are frequently subjected to, they will remain in a vigorous condition for an indefinite time. Plants that bloomed before midsummer and that are wanted to flower again about the end of the year should now be making growth, and should be encouraged to keep on until the end of September. Weak liquid manure ought to be given frequently. Whatever is used as a fertiliser, I should recommend a little soot being put in the water as well. If soot in moderate quantities was more used to this and other bulbs which are subject to attacks of the mite, I think that less of this destructive pest would be met with. I know of no insect which affects plants below the soil that will remain where soot is much used. By many this *Eucharis* is preferred to any other white flower, and where as a consequence large quantities have been grown, to lose it is a serious matter. Much has been said about getting rid of the enemy where it has attacked a stock, but in most cases, if not in all, it has appeared again. Where the stock is large and the plants are badly affected, it is a question whether destroying the whole and starting afresh with a clean lot is not the best course to follow.

ÆSCHYNANTHUS.—Amongst the different flowering stove plants suitable for growing in hanging baskets the *Æschynanthuses* hold a leading place. Their natural drooping habit of growth and the little difficulty which there is in keeping them within a reasonable size are much in their favour. The various sorts bloom at different times, from early in the summer to autumn, but the time of their coming in depends somewhat on the amount of heat they get. Two of the best are *Æ. grandiflorus* and *Æ. splendidus*; the last named is a hybrid, and bears the finest flowers of any of the kinds. Its form of growth is more inclined to be erect than that of the others, but, nevertheless, it makes a good basket subject. As soon as the early-flowering plants are out of bloom, the shoots should be shortened to within 8 inches or 10 inches of the collar; it is necessary to do this every year after the blooming, or the branches get long and unmanageable. The late flowerers will now be showing bloom; weak manure water once a week will assist them. Cuttings of the plants that are headed back may be put in. Any portion of this year's shoots will strike, but the leading points, consisting of about four or five joints, are the best, as they will grow away more quickly than those made from the older wood. The best and quickest way to proceed is to put five or six cuttings together into 6-inch pots, in which they may be allowed to remain until they have made plenty of roots, after which they can be moved all together into larger pots. By this means much time will be saved in getting the specimens up to a useful size. The pots should be drained, and three

parts filled with a mixture of peat and sand, the top all sand. In an ordinary stove temperature covered with propagating-glasses, shaded, and the atmosphere kept moderately moist, the cuttings will root sufficiently in two or three weeks to admit of the glasses being removed. When 2 inches or 3 inches of growth have been made, pinch out the points of the shoots; this may be required to be repeated towards the end of the year. The plants must not be stopped much later than this, or it will interfere with their flowering, and, if all goes well, the cuttings struck now and grown on, several together in the way described, will bloom well next summer.

CURCUMAS.—The singular and distinct character of the flowers of *Curcumas* is such as to make them deserving of a place wherever there is a warm stove. Unless there is the means of giving them a brisk heat there is not much chance of their being seen at their best. Whilst they are in bloom they may be kept somewhat cooler than during the time they were making growth. By this means the flowers will keep fresh longer, but on no account must the plants be too cool, for being mostly natives of the hot parts of India they will not bear keeping too cold. This, at least, is what I have found in their cultivation. As soon as the flowers get shabby the plants should be put back in the stove, where they must remain until the tops die down. During this time give enough water to keep the soil fairly moist. As the tops die off gradually let the roots become dry.

AMARYLLIS.—The cultivation of these plants is now mostly confined to the deciduous varieties, amongst which so much improvement has recently been made by the raising of seedlings. Where the bulbs were started soon, the growth will now be fully matured. Nothing that tends to keep the leaves alive and healthy should be left undone, as the longer they retain their vitality the stronger the bulbs get. This is a matter of the first importance with scarce varieties, as the quicker the plants gain size and strength the faster they will increase. A good washing with the syringe from time to time, with the object of keeping the leaves free from red spider, will be well rewarded. This pest not only weakens, for the time being, any plant that it is allowed to infest, but it also injuriously affects the colour of the flowers of many things the season after the leaves have been attacked by it. Nothing that can be done should be omitted to assist the plants that flowered late, and were consequently late in making their growth, so as to help them to get their leaves well matured. Use a thin shade when the weather is bright and give plenty of air, with enough water to the soil to keep the roots healthy.

MEYENIAS.—Both the white and the purple-flowered forms of *Meyenia* are desirable plants. They occupy little room, as they do not attain a size larger than can be accommodated in an 8-inch pot. They are profuse bloomers, the flowers coming in during the autumn. So free are they that every bit of shoot will bloom. Cuttings that were struck in spring and have had the requisite attention as to stopping and been kept in an ordinary stove temperature will now be nice bushy plants, ready for moving into the pots in which they are to remain until they have flowered. Loam with some leaf-mould, rotten manure, and sand is a suitable compost to grow them in. Give them a light position, with shade in the middle of the day when the weather is sunny. Use the syringe freely once a day. *Meyenias* are not much subject to insects, except red spider, and this can easily be kept down by water applied overhead. As soon as the flower-buds are formed cease syringing, as if the water lodges for any length of time about the buds it sometimes causes them to drop. T. B.

Dwarf Cannas.—The *Canna* is annually becoming more popular, and many of the new dwarf kinds make really handsome plants, either for planting out or for pot culture. The deep green or bronze leaves are always ornamental, and the flowers have been wonderfully improved both in shape and size. Many of them remind one of

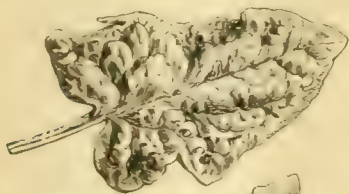
those of a *Gladiolus*, and some of the deep crimson colours are most telling. The plants continue to bloom all the summer in an intermediate temperature. A half dozen good sorts are *Revol-Massot* (reddish crimson), *Paul Bert* (deep crimson), *Victor Hugo* (orange-scarlet), *Louise Chrétien* (yellow), *Lutea splendens* (pale yellow), and *Gérard Andran* (red).—G.

Pelargonium Ardens.—In the race for novelties the merits of some good old plants are liable to be overlooked, a remark which truthfully applies to this *Pelargonium*, for while many so-called new varieties are put into commerce that differ little, if at all, from plenty of others in cultivation, we have this most distinct and showy form quite ignored. For brightness of colouring, however, it is unsurpassed by any of the garden varieties in the section to which it belongs. It is of neat, yet shrubby growth, with hairy leaves that are somewhat scented, while the flowers are of an intense crimson-scarlet colour, blotched with blackish maroon. This is said to be a hybrid between *Pelargonium fulgidum* and *P. lobatum*, raised a great many years ago. Several of the original species and early hybrids are very beautiful, and though the flowers may not possess the size or regular markings of those of the show plants of the present day, a collection of them would not only be interesting, but also very beautiful.—H. P.

KITCHEN GARDEN.

SUMMER AND WINTER SPINACH.

WHEN only the ordinary round-seeded or summer Spinach is sown, the supply not unfrequently fails long before July has expired, and for this reason alone the *Victoria* or *Improved Round*, and which I believe to be synonymous with *Vilmorin's new Long Standing* (see illustra-



Late Seeder or Long Standing Spinach (one-sixth natural size).

tion), ought to be more generally grown. In Messrs. *Vilmorin's* catalogue, the latter is described as having "very thick large leaves; its principal character is to run to seed two or three weeks after the other sorts;" while of the *Victoria*, it is stated in Messrs. *J. Veitch and Sons'* catalogue that "It is a very fine variety for summer use, with thick dark green leaves, remaining fit for use about ten days longer than the ordinary round." In each case the merits of the variety are under rather than overstated (a rare exception, I admit), for not only is it very much superior to the ordinary round-seeded, but it remains in a serviceable state upwards of three weeks longer. It is late in running to seed, and even after the stems have run up con-

siderably it is possible (we are doing it now, in fact) to gather a quantity of medium-sized leaves from them, these being much preferred to the tops of *New Zealand Spinach* (see cut). The *Victoria* or *Long Standing* ought then to quite supersede the old form for the summer crops, and is well worthy of a trial for autumn sowing. It will be sown extensively here, and I see no reason why it should not prove hardy



Viroflay Giant Spinach (one-sixth natural size).

and otherwise maintain its superiority during the winter. The monstrous *Viroflay* (see cut) is somewhat disappointing, and I much prefer the *Victoria* or *Long Standing*. Large Prickly-seeded or *Winter Spinach* (see cut) has long been the favourite for autumn or rather late summer sowing, but as a matter of fact it is neither hardier nor more serviceable than the ordinary round-seeded Dutch. Those therefore who may have a quantity of the latter in stock may well sow it either in preference to or in connection with the Prickly-seeded, and it will not be the fault of the variety if a failure occurs.

Where a considerable variety of choice vegetables is required daily throughout the winter a good supply of Spinach is well-nigh indispensable. In many gardens it is no easy matter to secure a good breadth of winter Spinach, but in every case the attempt should be made, as it is very certain its value as a vegetable is fully appreciated in every establishment. Summer



New Zealand Spinach (one-twelfth natural size, branch one-fourth natural size).

Spinach can be grown almost anyhow, at any rate till very hot weather sets in. It is quite a "catch crop," and the usual position assigned it is mid-way between rows of *Peas*, the seed being sown as often as that of the latter. *Winter Spinach*, however, requires very different treatment. Not only must this be sown in a good open position, but I find that the soil must undergo a sweetening or pulverising process before

the seed is committed to it. At the present time a fairly large breadth of ground intended for Spinach is the only vacant quarter in the garden, and nothing has been grown on it since it was cleared of spring *Broccoli*. Being given a moderate dressing of stable manure in preference to the colder farmyard manure, and laid up roughly to all weathers, it first became as hard as the road, and then when well soaked

with rain it crumbled to pieces at the touch of a fork. A fortnight ago the surface was lightly forked over, and it has since been stirred with flat hoes. About the first week in August a liberal dressing of soot and lime will be applied and well hoed in preparatory to sowing the bulk of the seed. This may seem a lot of trouble to take with the ground, especially to those who experience no great difficulty in preserving the young plants, but we are, or shall be, repaid for our trouble.

Good summer cultivation not only ensures a good seed-bed, but it also rids the soil of various insect pests that prey on either the tops, stems, or roots of the plants. Were we to sow Spinach in close succession to some other



Large Prickly or Winter Spinach (one-sixth natural size).

crop, the ground would be lumpy and insect-infested, and the consequence would be the loss of the greater portion of the plants before they attained a serviceable size.

In any case, it is advisable to sow seed in quantity. If all comes up evenly and few subsequent losses occur, so much the better; but, on the other hand, if many gaps are observable, these can be made good by transplanting from some of the outside rows that are broken up for the purpose, and in the end a good bed of Spinach may result. Some err in sowing too little seed, others in not taking sufficient trouble in preparing the ground, and still more in being too late in what they do. Much naturally depends upon the state of the ground, or whether in a well-warmed state owing to the summer being hot, and also upon the weather that follows upon sowing. As a rule, the first important sowing should be made not later than the first week in August, and another a fortnight later. There is little danger of the plants being too forward from the first sowing, but it is always advisable to be on the safe side, and this rarely happens if the principal or only sowing is

delayed till the end of August or early in September.

The ground ought to be moderately rich and thoroughly broken down, surface dressings of soot and lime, as already alluded to, being freely applied and hoed in. Rather shallow drills should be drawn not less than 12 inches apart, and if the sowing is not long deferred, 15 inches is not too much. If at all dry the drills ought to be well moistened just prior to sowing the seed thinly and evenly, this being covered with fine soil, brought if need be from the frame ground. It is sometimes necessary to dust over the seedlings with soot and lime to preserve them from slugs, but as a rule their principal enemies are grubs that prey on the underground stems. These are not easily dislodged, prevention, as usual, being better than cure. Frequently hoeing among the rows and stirring the soil between the plants with a pointed stick destroys a good many of them, and also encourages a more rapid growth of the plants. The seedlings ought to be only lightly thinned out at first to prevent undue crowding, and eventually left about 6 inches apart. If there are any gaps in the rows, some of the thinnings, when of good size, may be dibbled out where they occur, and not unfrequently these thrive equally as well as those undisturbed. During the early part of the season it is not advisable to gather the leaves too closely, as this has a weakening effect, and besides they may be more in demand later on, or when little growth is going on.

W. IGGULDEN.

PACKING TOMATOES.

CONSIDERING the enormous quantity of Tomatoes now grown for sale both in market gardens and private establishments, the packing of them is a far more important question than the majority of growers seem to think. This is particularly so in the case of those in charge of private gardens, who, in nine cases out of ten, having had no practical experience in market work, pack their Tomatoes in such a manner that the returns are considerably lower than they should be. A glance through Covent Garden or any other principal market in the metropolis, to say nothing of large provincial towns, will corroborate this fact. The difference between the market grower's method of packing and that of the private gardener is conspicuous. The grower for market has a certain method which is carried out in a systematic manner, never varying in the least during the whole Tomato season; while the private grower's consignments may generally be recognised in the market by the outward appearance of the packages, consisting of almost every conceivable shape and size. Some may think that as long as the Tomatoes arrive in good condition it matters very little in what sort of packages they are consigned. This, however, is a great mistake, as anyone with experience in the markets will bear me out in. At the present time there are growers who send their regular consignments to various markets throughout the kingdom, and these are eagerly looked for by buyers. Not that perhaps their fruit is in the least superior to that of others, but because it is packed in a systematic manner which at once catches the eye of the buyer. As insignificant as it may appear to the inexperienced, if a particular or special tint of paper be always used in packing, and provided the fruit is of fairly good quality, there is generally a demand for that brand. Many growers have learnt the importance of this during the present season, and their goods, tastily packed, are always sought for, while those of others consigned in a slovenly manner are sold at prices which leave a very small margin when all expenses are paid.

In packing and consigning Tomatoes to market, the kind of package to use should be first considered. With private gardeners it is a common practice, when sending a few Tomatoes, to pack the fruit in shallow boxes, one layer in each, in a

similar manner to Peaches, though packed with less care. This method, while answering well for private purposes, is quite unsuitable for market work, for several reasons. In the first place, it is too expensive, and, secondly, the fruit cannot be easily examined by would-be buyers upon its arrival in the market. Then, again, many send their Tomatoes to market in half-bushel or bushel baskets, but this, it is needless to say, is not the most conducive to satisfactory results. When sent thus, the fruit, to arrive in good condition, must of necessity be gathered before it is ripe, for if otherwise, the major portion of it would be crushed and bruised during transit. In either case its value would be considerably reduced. Of course, where the fruit can be brought direct into the market by the grower's own conveyances, as from the neighbourhood of Bexley and other parts of Kent, the bushel, or half-bushel, so far as conveying the fruit is concerned, is as good as anything, but even in these cases it would repay the grower to consign his goods in small fancy packages, as by so doing, higher prices, as a rule, would be realised, since small packages are much easier to sell than large ones.

From the Channel Islands, as is well known, enormous quantities of Tomatoes are arriving nearly all the year round, though in largest consignments, of course, at the present time. The bulk of these are packed in precisely the same manner and in the same sort of packages. These are baskets of the cross-handled type, and generally made by the thousand in French reformatories. They are cheap, strong, and durable, but at the same time exceedingly light, and easily moved from place to place. Usually they each contain from 20 lbs. to 30 lbs. of fruit, and this, notwithstanding the loading into the holds of the steamers, the shaking up across the Channel, the unloading at Southampton, transferring to the railway trucks, and the journey to London, generally arrives in Covent Garden in a sound and excellent condition. Of course, to do this the fruit is consigned before it is really ripe, and this in a measure accounts for the Channel Islands Tomatoes realising lower prices than perfectly ripe home-grown ones. In appearance they are equal to best English fruit placed upon the market, though slightly inferior in flavour, caused by early gathering. The mode of packing these is extremely simple. First, two or three large sheets of paper are placed in the basket to cover the bottom, sides, and ends, and then the fruit is put carefully in until the basket is nearly full to the rim. One or two sheets of paper are placed over the top and laced with twine, and the packing process is complete.

From Worthing, in Sussex, where thousands of feet of glass are now being devoted to Tomato culture, not to mention the acres of outdoor Tomatoes, a somewhat similar mode of packing is used. In this case, however, the method of packing differs slightly, hay being used instead of paper. A layer of clean, sweet hay is first put in the basket, then follows a layer of Tomatoes, and so on alternately until the basket is full, finishing off with hay and lacing over with twine, the same as in the previous case. It will be seen at once that this is a cheap and easy method, and, as a rule, the fruit, although perfectly ripe, arrives at its destination in good condition.

It may be urged that in the height of the busy season, when so many tons of fruit have to be packed and consigned to market, it will not pay to send it in small packages. First, the number of baskets required would be enormous; and secondly, the time occupied in packing small quantities would of necessity be greater than preparing a few large consignments. This I admit, but it has been proved that the majority of salesmen find it much easier to dispose of a consignment of small packages than large packages in small numbers, both consignments containing say the same weight of fruit. Even in the busiest season this method may be adopted with advantage; whereas during the winter or early spring, when almost any sample of English Tomatoes will realise a good price, it is ob-

vious that if nicely and attractively packed in small fancy baskets the prices would be even higher.

The French growers long ago saw the importance of packing tastefully, as the huge consignments of fruit of all kinds that reach this country from France amply testify. Seldom do they use large packages for any kind of fruit. Most of the Tomatoes that come from France are packed in small flat boxes and willow-work squares, fancy paper shavings being generally used for the purpose of preventing the fruit getting bruised. Home growers will do well to make the subject of packing, not only Tomatoes, but all kinds of fruit, a special study.

C.

POTATOES.

IN regard to our Potato breadths, we are just now existing in a state alternating between hope and anxiety. The breadths universally look remarkably well, could indeed hardly have looked better at any time, and we are here at the end of the third week in July without any evidence of disease. Then the tubers in all the earlier kinds are large and plentiful, and cook well. The great heat we experienced through June served in a wonderful way to force growth both of plants and tubers, so that whilst in May, Potato growth generally was late, since then there has been such acceleration that we are now in relation to growth and tuber-production as early as in any previous season. So far all is hopeful. The cause for anxiety is found in the now unsettled condition of the weather, which is broken and stormy, with occasional cold wind or heavy thunderstorms, and heavy falls of rain. These things tend not only to a lowering of the atmospheric temperature, but also to considerable cooling of the soil, and violent changes of temperature in the soil, especially whilst the Potato plants are full of growth, are dangerous to health and productive of disease. This atmospheric disturbance may be but temporary, and if so no great harm will have been done. On the other hand, we have to set against it the fact that the rains have now thoroughly established the late breadths of Potatoes, and they can hold out very well without a drop more of moisture for the rest of the season. A month of warm weather would suffice to give us one of the finest and cleanest Potato crops we have had for several years, with the consequent result that Potatoes would be exceedingly cheap, but all the same excellent. Nevertheless, a large and healthy crop of tubers would tend greatly to strengthen the confidence in Potatoes as a profitable crop which last year's distressing attack of disease greatly shook. One marked feature of the season, so far, has been much less bloom than usual. This is due, perhaps, to imperfect ripening of the tubers last year; that is, however, a matter of no moment, as there does not seem to be any useful connection between bloom and tuber-production, except the remote one that bloom is needful for the production of seed. Even in that respect there is no great need for bloom, for just at present there are hundreds of seedling varieties of Potatoes in the country not yet in commerce, so freely have seedling varieties been raised, and at Chiswick, at the present moment, there are, perhaps, 150 varieties all new growing for trial, so that a pause in new Potato production for a few years until we have thoroughly proved what we have will do no harm. Amidst our wealth of varieties of Potatoes, and we have scores of first-class sorts with the merits of which the great mass of growers have never been acquainted, the small number of varieties grown for market is remarkable. Practically, throughout the whole of this Potato-growing district the chief kinds are Beauty of Hebron and Magnum Bonum. They almost always give good crops, they realise fair prices, and they satisfy the requirements of the growers. Some Early Rose are yet grown, also some White Elephant, but the two kinds first named form the chief bulk of sorts. Presently we shall see the white Beauty take the place of the pink one, no doubt, but even with many better sorts it will be hard to displace Magnum Bonum from its position as the chief main crop

variety. Growers have confidence in it, for it has, without doubt, proved to be, through some evil report and diverse seasons, a very good disease-resister, so that confidence has been inspired which cannot easily be shaken. The next four weeks can make or ruin our Potato crop.

A. D.

Bedfont.

KITCHEN GARDEN NOTES.

THE POTATO DISEASE.

A LONG spell of wet, close weather at this time of year is invariably conducive to the spread of the dreaded Potato disease (*Peronospora infestans*) and its allies. Last year, in spite of the general unfavourableness of the weather, not much of the disease was apparent in this district before the first week in August, but this year the additional warmth would appear to be even more favourable to the increase or preservation of diseased germs or resting spores, as in some gardens whole breadths of Potatoes were affected by it as early as the middle of July. As yet we have not found much disease in our comparatively large open quarters, but in the more confined cottage gardens the case is very different. The varieties of American origin, notably Beauty of Hebron, are badly diseased, one quarter of the tubers lifted being already touched by it. This variety is still popular among cottagers, and on all sides they were congratulating themselves upon both the great weight of the crops and also the unusually good quality of the tubers, and it is, therefore, already a very serious matter with them. Luckily, very few have discarded the disease-resisting, if ugly, Scotch Champion and the equally serviceable Magnum Bonum, and neither of these is as yet affected by disease. Let the weather be what it may during the next few days, the more delicate early varieties are almost certain to be badly diseased this season; but if there is a change for the better soon, there will yet be abundance of Potatoes, the crops promising to be among the heaviest on record. As usual, very much uncertainty exists as to the advisability of early lifting as a preventive of disease, and, to a certain extent, my advice on the subject must be of a negative character. In all southern or warm districts, at any rate, all the Ashleafs and other early and second early varieties ought by this time (July 24) to be sufficiently matured to admit of their being lifted and stored at once. If the foliage is only slightly diseased, and but few of the uppermost tubers similarly affected, then all may be lifted and stored with advantage, as the disease will, in this case, be more or less anticipated. When, however, it is found that in addition to much of the foliage being diseased a great percentage, or say one quarter or more of the tubers are touched by it, lifting had better be delayed for a few weeks longer. The foliage, however, ought at once to be drawn away from the ridges and burnt, as this is the principal medium by which the spores are either spread or communicated to the tubers below. When a diseased crop of Potatoes is lifted and stored early, many tubers that are only slightly affected escape notice, or it may be they take the disease while resting on the surface of the ground, and in the end the very unpleasant duty of sorting over heaps of decayed and decaying tubers has frequently to be carried out. Whereas if the haulm is drawn and the crops left in the ground, these will, in a sense, sort themselves, and can be lifted in drier weather, the sound ones being stored and the rest mixed with quicklime rather than given to the pigs, as too often happens. All that are still growing vigorously ought to be left undisturbed for some time longer, though there is no necessity to wait till the haulm has decayed. The tubers do not increase in size after the haulm falls about the rows and ceases to be active, but they are then undergoing the ripening process, which takes places almost as well when they are out of the ground as it does when they are left undug.

LETTUCES.

Latterly it has been almost impossible to preserve quite young plants from the small black slugs, and this, seeing how important the late crops are in many places, is much to be regretted. Any of

the Cos and more tender Cabbage varieties sown from the middle to the end of July, and duly thinned and transplanted, will usually attain a serviceable size and keep good well into the autumn. Those, therefore, who, fortunately, have raised and saved a considerable number of plants should attend well to these, and advantage ought to be taken of showery weather to transplant as many of them as possible. Lettuces, unlike Endive, thrive best in warm or moderately hot weather, and for the later sowings, or those made at the present time, a warm or raised sheltered border will be found the best site. The quick growing or more hard Cabbage varieties, such as Tom Thumb, All the Year Round, Early Paris Market, White Chautigny, and Golden Queen are the best for these late crops, and ought principally to be sown. After having tried sowing both in drills and broadcast and on newly dug and undug ground, I have arrived at the conclusion that the most satisfactory results attend sowing broadcast on undug, and therefore, as a rule, warmer ground. The surface of the ground should be made quite fine and level, a liberal dressing of soot being stirred in with a flat hoe, and after it has been watered, if at all dry, the seed may be sown thinly broadcast and covered lightly with sifted soil. Thus treated the seed germinates quickly, and being well within sight there is much less likelihood of the seedlings being left to the tender mercies of slugs. Supposing we have an ordinarily favourable autumn, a very serviceable lot of well-blanching Lettuces should be obtained from a comparatively limited area.

RIDGE CUCUMBERS AND VEGETABLE MARROWS.

The hot sunny weather experienced in June favoured a strong early growth of these, and the Marrows under various systems of culture are especially productive. The heavy rains and sunless weather we have lately been favoured with are leaving their mark on the Cucumbers, most of the plants having already changed to a sickly hue. It is also noticeable once more that Marrows rooting in a mass of rich manure are growing much too rapidly, and are by no means productive in proportion. Those put out on well-manured open ground, or on slightly raised beds with only a limited quantity of manure underneath, do not grow nearly so rapidly and are far more fruitful than their apparently more favoured brethren on the manure heaps. Stopping the haulm in the case of luxuriant plants will not increase their productiveness; in fact, they are more likely to be most fruitful when allowed to ramble thinly and unrestrained. It is very unwise to leave a few fruit to attain a great size, as these are of little value and greatly impair the naturally free-bearing habit of the plants. We frequently remove any moderately large fruit that may have been overlooked for a few days, whether they are required for home use or not, and the plants are all the better for being thus favoured. In reality, quite small fruit are the most delicious, and these only may rightly be designated Vegetable Marrow. The long varieties ought to be cut when about 6 inches in length, and from 7 inches to 8 inches in circumference at the thickest part, these being cooked and served whole. Pen-y-byd may be similarly treated when about the size of a tennis ball, and it is also of superior quality when nearer fully grown than most other varieties.

SEED SAVING.

It is to be hoped the old legend that if it rains on St. Swithin's Day it will do so more or less for the next forty days will not be verified this season, or seed-saving will once more be a difficult matter, and two failures in succession would be little short of a national disaster. I have my doubts about the policy of saving many seeds in private gardens, especially seeing how cheap and reliable the bulk of those purchased proves. In some instances, however, it is advisable to save as many seeds as circumstances permit, and I am afraid there will be special need of it this summer. Gardeners have a decided advantage in saving Peas and runner Beans, as these, particularly those sown moderately early, have a much better chance of ripening good sound seed than is the case when the same varieties are

grown in the open fields. It is the earliest and not the latest formed pods that should be saved, as these only yield seed of the best quality. A portion of the rows ought therefore to be left to furnish seeds in preference to saving more than are wanted from all the rows to the great detriment of their continuous productiveness. Small birds, notably sparrows, are the greatest enemies to seed-saving, and fine fish nets only will keep them away in many gardens. Abundance of Broad Beans might easily be saved this season, and as Kidney Beans are fairly early and most productive, these also can be saved in quantity, quite new, sound seed being the best for sowing in pots in the autumn and during the winter. If Broccoli, Cabbage, or Cauliflower seed is being saved, the seed-bearing stems ought to be well supported by stakes, otherwise they are liable to break down, and in addition must be netted over wherever small birds are troublesome. It is a rather difficult matter to keep strains of any member of the Brassica species from becoming mixed, and that is one reason why I prefer to purchase all the seed of these required. Lettuces duly staked up ought to yield seed freely this season, and we invariably save seed of Early Paris Market in quantity, more of this being sown than of any other variety grown. Onions and Leek stems required to be staked, and these again promise to yield a good crop of seed. Seakale and Asparagus seed is early, and with favourable weather it will harvest well. In each and every case it is a mistake to allow the seed-pods to hang too long on the plants or stems, as much of it may be lost by their bursting unexpectedly, or it may be greatly injured by rains. Directly it has commenced to harden or colour, the pods of Peas and Beans may be gathered and laid out thinly on mats or paper in a sunny, dry position under glass, while the stems of Broccoli, Cabbage, Cauliflower, Turnips, Lettuce, Onions, Leeks, Seakale, Asparagus, Parsley, Carrots, Beet, and any other somewhat similar vegetables should be cut and laid out thinly on sheets of paper, so that the seed may become properly ripened before being cleaned and stored. The seed ought to be thoroughly dry before being placed in bags, or otherwise it will become mouldy and useless. The seed will keep best suspended in bags in a dry living room.

W. I.

Experiment with Potatoes.—I have now growing in my garden two rows of Potatoes, fifteen in each row, ten still in pots under glass, and eight shoots coming up from the tuber which was removed from the pot in which it is growing on Monday last for the seventh time. I take out the tuber each time when I perform this operation, and it seems as firm and vigorous as ever, although the eight shoots that it is now producing will make forty-eight in all. I intend to go on taking off the shoots as long as it will produce any, and when it ceases to do so and the crop of its produce in tubers has been taken up I will send you an account of the experiment with all necessary details.—CHAS. BOYS, *Wing Rectory, Oakham.*

Turnip Chirk Castle Black Stone.—Valuable as the Early Milan is for early sowing, equally so is the subject of this note for late use. I quite agree with all that "W. I. M." says in its favour in THE GARDEN of July 20 (p. 58). Having grown this for several seasons I can speak in the highest terms of it, and would recommend everyone to sow it for late use. It may be sown as late as any variety with every prospect of success. I observed "W. I. M." made no mention of the way in which the bulbs become buried in the soil. This is the cause of its standing so late in spring in the open without being injured. It has but few leaves, and although black outside, the flesh is tender and white. This and Orange Jelly are two of the best Turnips.—JOHN CROOK, *Forde Abbey.*

Early Potatoes in the south of Ireland.—While staying here (Tramore), one of the popular marine health resorts, I was rather surprised to find all the early Potatoes dug out before mid-July, and inquired of some of the market growers when they were planted; the stalks were certainly

yellowish and seemingly ripened. They told me January and February were the usual months for planting, and, in reply to further inquiries, assured me that neither here nor in any other place in the vicinity of the sea does frost do the Potato crop any harm, no matter how early planted. I am not aware to how far inland the equalising warmth of the Gulf Stream in winter extends, but if the belt of land was considerable, and that it could without risk be planted with early varieties of Potatoes in January, to ripen from the middle of May to the middle of June, before they could be had elsewhere, commercially, the fact might be of considerable importance.—W. J. MURPHY.

PEAS FOR MARKET.

THOUSANDS of men, women, and children have, during the last two months or more, been engaged in picking Peas for the London markets, and the crops on the whole have turned out fairly well. The earliest sowings appear to have been more satisfactory than those made at the turn of the year, as the young plants were well above ground before ungenial weather came to stop their growth. Peas do not mind cold weather when once they are well above ground; it is the germinating period that is most critical for them, and if at that time heavy rains or melting snow are followed by hard frosts, the chances are that much of the seed perishes. This was the case with a good many breadths sown in February. The snow melted and made the ground so cold and wet that a great proportion of the seeds rotted. Of the very large number of Peas now in cultivation none are so largely grown in this district as the old Kentish Invicta. It cannot be said to be a good quality Pea, but it has points of merit that render it a favourite with growers for market. It is hardy, and that goes a long way towards securing popularity with those who grow Peas in open fields, and the pods swell up quickly. I have no doubt that American Wonder will in time take a high place among market Peas, but the drawback with this, as with some other good, but comparatively new kinds, is that the seed is yet dear. No Pea grower cares to give much more than 10s. per bushel for seed; it would not pay to do so, as owing to the large area of land now under cultivation with this vegetable, the prices are not sufficiently high to warrant a greater outlay. It is, however, a pity that the generality of Pea growers should be content to confine themselves to so few kinds, for however good and reliable these may be it is reasonable to assume that there may be better among the comparatively untried kinds. I have more than once urged some of the market growers here to try some of the newer kinds on a small scale, and then if any of them should look promising, save seed themselves instead of buying. In the course of several seasons enough seed would be obtained to give any variety a fair trial. It is, however, difficult to get these men to depart from the old beaten track. Now and then one does do so, and he is sure to find his reward.

One large grower who sends two or three truck-loads of Peas every morning to London makes a point of giving any promising kind a trial, and he usually has about a score of varieties in cultivation. Having such a large area of land under cultivation, he, of course, does not much feel the effects of any one kind not turning out quite so well as it should do; but it is noteworthy that this man is one of the first in the market, though not enjoying greater advantages in the way of favourable situation than his less enterprising neighbours. When a man can send Peas to market in considerable quantity at a time when they are making 10s. per bushel, he is more than repaid for any reasonable outlay incurred in the trial of improved kinds. Those who grow but a few acres have, of course, to be wary of change, for it is a serious matter for them if a breadth turns out badly. Tall growing kinds are, of course, useless for market culture, as staking is out of the question, and they would take up too much space in proportion to the quantity of pods produced. An old Pea that yet finds favour among market growers is the Forty-fold, and Day's Early Sunrise is also a favourite with some, but its pro-

ductive powers seem to be more affected by soil and situation than most kinds. To a certain extent this is the case with all Peas, so that those who grow for profit should be careful how they discard old tried kinds for such as may not do so well, however satisfactory they may be in some other place.

The great struggle among Pea growers is to get a crop into market at the earliest possible date. I doubt if there is any other vegetable that so quickly falls in price as Peas. A week's genial weather will reduce famine prices down to quite a low level. The grower who is so favourably situated that he can forestall his neighbours in the London market by one week is a lucky man; a few acres of Peas will be a little fortune to him. I know an individual who is invariably one of the first to gather, and this year his first pickings realised 25s. per bushel. This high price lasted one week only; the following week they made 15s., then 10s. per bushel, and all at once the price came down to 6s. per bag of 2½ bushels. It will thus be seen how important earliness is in the case of this vegetable, and how necessary it is that growers should be on the look out for a kind that may give them some advantage in this way.

It cannot, however, be too well understood that to gather early, the seed must be got in soon enough to allow of the plants being well above ground before they can be subjected to the vicissitudes of winter. It is useless to expect to be among the first in the market if sowing is delayed until February. In the case of early crops, however, the element of uncertainty must always be reckoned with. It is not only an inclement winter that has to be taken into account, but the frosts in May that frequently cut off the bloom wholesale. Pea crops are notoriously uncertain, and the early ones most of all. J. C. B.

FERNS.

W. H. GOWER.

GIGANTIC FERNS.

(ANGIOPTERIS.)

UNDER this name I particularly wish to call attention to some of the Ferns included in the Marattiæ, which, although Ferns to all intents and purposes, differ in many details from the plants which are usually grown under this name. As young plants they are very ornamental; they increase at the base, forming stout root-stocks, but they never rise upon an arborescent stem, and require considerable space for the development and spread of their fronds. The finest and largest plant which I have ever seen was under my charge for some years, and it measured upwards of 30 feet in the spread of its fronds. This was a plant of great age, and was named *Angiopteris evecta*, and to the genus *Angiopteris* I will here confine my remarks. De Vriese, a Dutch botanist at Leyden, made a study of these plants, and wrote a treatise on the genus, making many species, but Hooker reduces them all to the original plant, *A. evecta*. As to the correctness of this latter view I will not here open a discussion, but I can say for certain that as cultivated plants the kinds here enumerated are quite distinct and worthy of note, be they species or varieties. All of the plants are handsome, forming as they get old remarkably stout stems to develop the fronds upon. These plants produce a splendid tropical effect in a fernery, and are easily grown if their requirements are studied, these being principally heat and moisture. The soil in which I have grown these plants well is an admixture of loam and peat, with a fair amount of river sand. Although these plants enjoy an abundant supply of moisture to their roots, it must not be allowed to become stagnant, as if this occurs the large fleshy roots soon rot away and the plants assume an unhealthy appearance. All the forms of this

genus are found in the islands in the Indian seas or adjacent islands, and it may therefore be justly imagined that they enjoy under cultivation a large amount of heat. One species or variety is, however, found in Sikkim, but this kind does not object to heat by any means.

ANGIOPTERIS EVECTA was the species established by Hoffmann, a German botanist, so long ago as 1793. It is therefore the typical plant of the genus, and all the others resemble it in growth; the fronds, which are spreading and leafy, rise from between two fleshy appendages or plates, and they vary from about 3 feet to 6 feet in length. When they are fully grown, the length of each of the fronds varies from 6 feet to 20 feet. The fronds are bipinnate, the pinnules being each from 3 inches to 6 inches or more in length, and an inch or more in breadth. They are deep shining green above, beneath paler green; the sori are arranged in a double row on the vein, and form a sub-marginal transverse band. It is found in the Pacific Islands and in Ceylon.

A. BRONGNIARTIANA.—In this form the pinnæ on young plants are each 2 feet long, the pinnæ being about the same size as those of *evecta*, deep green on the upper side, very much paler beneath; the pinnæ are also more closely set than in the typical plant. A bold handsome plant from Java.

A. TEYSMANNIANA.—This is another handsome form from Java. The pinnæ on young plants are upwards of 2 feet long; the pinnules are closely set, narrower than those of *evecta*, as many as twenty-four pairs of pinnules being set upon the stem, which is of a deep plum colour; the colour is bright shining green above, paler beneath.

A. PRUNIOSA is a very handsome kind, equal in size to the last, the pinnules broader and closely set; the colour on the upper side is deep shining green, beneath they are of a decided bluish-white, which gives it a very distinct and handsome appearance. Java.

A. CRASSIPES.—This form I have not seen for many years. It is equally as large as the typical plant, but the pinnules are narrower. It is very handsome; the name is Wallich's, and I am told it comes from the Indian mainland.

A. ASSAMICA, as its name implies, comes from Northern India, where it is said to attain a gigantic size. Its pinnules, however, as grown by me, were very narrow, and the sporangia were quite marginal, not sub-marginal.

GARDEN FLORA.

PLATE 712.

WALDSTEINIA TRIFOLIA.

(WITH A COLOURED PLATE. *)

THE plant of which a coloured illustration is given on the annexed sheet belongs to a small group of rosaceous plants closely allied to the *Agrimonia*s and *Avena*s. The genus contains four species which, with the exception of *W. trifolia*, are only to be found in botanic gardens. Two of the species, *W. fragarioides* and *lobata*, are confined to North America, and used to be known as *Comaropsis* and *Dalibardia*, both of which names have now been changed to *Waldsteinia*. The remaining two are distributed over Central and Eastern Europe and Northern Asia. From the latter locality comes the form called *W. sibirica*, which, however, I believe to be only a variety of *W. trifolia*. In the plant represented we have certainly the best and by far the showiest of this little group, though until recently a rather scarce plant. I know of only one figure having been hitherto published, and that is an uncoloured one in "*Linnaea*," vol. xiii, fig. 6. It was found and

* Drawn for THE GARDEN in the Broxbourne Nursery, April 27, 1889, by H. G. Moon. Lithographed and printed by Guillaume Severeys.

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described by Rachel, and was said to be one of the rarest plants of its district in Eastern Europe. About its cultivation little need be said. I find it one of the easiest to grow of all dwarf rock plants. No position comes amiss to it, and ordinary garden soil is all it requires. In habit it may be said to resemble the Strawberry, and this should be borne in mind when planting. I have seen it in gardens, trailing over rocks or amongst old roots or stumps, a sheet of the loveliest golden blooms during April and May, relieved here and there by little patches of its shining soft green three-parted foliage; and I have also seen it on a level patch, where it looked common-place, and not flowering, or rather not showing its flowers as it would in such a position as that described above. It may be increased to any extent by division, which may be done any time between autumn and spring. The other European species is *W. geoides*. D. K.

FRUIT GARDEN.

STRAWBERRIES IN SMALL POTS.

OPINIONS vary as to the size of pots for Strawberries. Some good growers of my acquaintance assert that 6-inch pots are none too large if good fruit is desired; whereas, on the other hand, many advocate pots of a smaller size. At one of the meetings of the Royal Horticultural Society some Strawberries which had been grown in $4\frac{1}{2}$ -inch pots without the aid of any manure were exhibited. These were of large size, good colour and excellent flavour. This is a point worth considering by all who are responsible for the forcing of a large number of Strawberries. In the first place, 1000, 2000, or 5000 plants in $4\frac{1}{2}$ -inch pots will require but about one-third of the standing room the same number of plants in 6-inch or 7-inch pots would—a most important point where space is limited. Then again, considerably less soil in potting would be needed, to say nothing about the cost of the pots. Therefore taken all round, there are advantages to be had by adopting the “small pot” method of culture. One thing is certain, that by growing plants in small pots there is less danger of having that soft succulent growth which, as all practical growers are aware, is by no means conducive to success. Firm growth and well-ripened crowns are essential if success in Strawberry forcing is desired. But the question arises, Can all varieties of Strawberries that are generally forced be grown in $4\frac{1}{2}$ -inch or even 5-inch pots? On this point it would be interesting to hear the opinion of some of the leading growers. Personally, I see no reason why they should not. The only obstacle I see is the danger of the roots suffering from drought during the months of April and May. In the case of early forcing, of course, considerably less moisture is requisite to keep the plants in a thriving condition than during the months just mentioned; therefore, for that purpose small pots may be used with safety. Some years ago when living with a famous Strawberry grower, who advocated the small pot method, but at the same time practised both, I had exceptional facilities for judging the merits of each plan, also the adaptability of the various kinds for small pot culture. Black Prince, a favourite for early work, and generally ripe by the end of January, did remarkably well in $4\frac{1}{2}$ -inch pots. The only difficulty we experienced with this kind was mildew, to which it is very subject. This, however, may be checked by a timely application of sulphur. La Grosse Sucrée, an excellent kind for early forcing and producing fruit of good appearance, but second rate flavour, generally came in about March, and did well in small pots. Following this, and likewise doing well in $4\frac{1}{2}$ -inch pots, came Keen's Seedling, of good flavour and size; but when not fruited until April plants in 6-inch pots produced decidedly the best results. British Queen also did best, it must be admitted, in 6-inch pots; while President, Sir Joseph Paxton, and Vicomtesse Héricart de Thury all did best in large pots when

not fruited until May. V. H. de Thury, however, did fairly well in small pots when used for early work. Judging from these trials, I have come to the conclusion that, with care and attention as regards keeping the plants duly supplied with moisture while the fruit is swelling, equally as good Strawberries can be grown in $4\frac{1}{2}$ -inch or 5-inch pots at any period of the forcing season as those in sizes an inch or two larger. Then as regards the question of manure or stimulant of any kind; this is a sore point with some growers in private places. That judicious applications of liquid manure during the swelling period materially assist the fruit as regards size few will deny; but whether it is deteriorating to its flavour or not yet remains doubtful. One well-known grower with whom I am acquainted has a great antipathy to the use of manure for his pot Strawberries, and strictly forbids the use of same by any of his subordinates. He, however, is an advocate for large pots, and this being the case, stimulants are not so urgently needed, inasmuch as the greater amount of soil answers the same purpose. But where the roots are crammed into a $4\frac{1}{2}$ -inch pot, stimulants in some form are undoubtedly of great benefit. C.

PEACH AMSDEN JUNE.

THE value of fruit, as of most other perishable things, to a large degree depends on its keeping properties, provided the first essential point is present, viz., flavour. It is often a cause of anxiety to a private gardener when he has a large tree of Peaches ripe and the demand is slow (or it may be the family is absent from home) to know how to keep all, or a portion, of the fruit for future use. I think all will agree with me that Peaches if kept after a certain stage of ripeness have little or no flavour. This difficulty is not so much felt in large establishments, where there are many houses and a large number of varieties and trees grown. It is in small places, where probably there is only one house, and often only two or three trees. These often are kinds that follow close on each other in their period of ripening. In such instances there is often a glut. It is in such cases that early kinds are found most serviceable. Thanks to the raisers of new kinds, the season is now much prolonged. This is most observable in the variety under notice. At Bridehead House Gardens, Dorset, there is a large unbeated Peach house in two divisions facing south, with a low fruit trellis and trees planted on the back wall. This house is on a sharp pitch, there being no front lights. Recently (end of June) I had an opportunity of seeing and tasting Amsden June Peach from this house. Some fruit gathered on June 28 I saw put on the scales, and to my surprise each fruit averaged 5 oz. in weight. The colour and flavour were also good. I do not say that the flavour was equal to that of a Royal George or a Noblesse. This could not be expected. It must be confessed that a Peach from a cold house at the end of June, and weighing 5 oz. and of fairly good flavour, is not to be despised. Mr. Birkenshaw informed me that he could keep a continued supply from this time onward till the late kinds are over. I ought to add that the tree these fruits came off was planted six or seven years ago. All the trees in these two houses are in the best of health and clothed to the ground. J. CROOK.

Furde Abbey.

Summer pruning of fruit trees.—I do not agree with those who advise the summer pruning or shortening of the young shoots on fruit trees in July or early in August. In many cases when done at that time almost every young bud left on the shoot sprouts and produces a tuft of more young shoots that are not favourable to the fertility of the tree the succeeding year. If no shortening is done until the end of August the young wood is hard by that time, and the buds so firm that few of them will start into growth again, but quickly mature into substantial bloom buds. I am induced to send you this important note from observations made in our own garden and many others besides.—J. MUIR.

Pear Marie Louise d'Uccle.—I have seen this Pear, which does not appear to be much grown, doing very well as a standard. It is not a strong

growing kind, the branches being slender and having rather a weeping tendency, and its slow growth may be one cause of its not being more largely cultivated. I cannot say whether it is fitted for growing in exposed situations, for the trees that I am acquainted with are in a fairly sheltered garden. If I were planting an orchard, I should, however, give it a place.—J. C. B.

GOOSEBERRIES.

THE remarkable show of Gooseberries made at the Westminster Drill Hall on the 23rd ult. by Messrs James Veitch and Sons and by Messrs. G. Paul and Son proves that we have in cultivation a great wealth of varieties of this popular bush fruit. The first named firm had 118 dishes, all of fine quality and very clean, and all distinct; whilst the latter firm had about forty sorts. Messrs. Veitch and Sons also had branches cut from the stock bushes of many kinds showing their fruiting qualities. So profuse indeed were the berries placed on some of these sucker shoots that it may be made a question worthy of consideration whether the method of cultivation adopted at Slough to secure cuttings and layers may not also be worthy of copying for the production of fruit. I drew special attention last year to a very fine collection of Gooseberries shown by the Messrs. Veitch, but it was not so large and representative as was the collection exhibited on the 23rd ult., although the more recent one had the berries hardly so ripe. The earlier sorts were, however, thoroughly ripe, and one variety, one of the earliest and most delicious of all, Wilmot's Early Red, was quite over, no fruits being left on the date in question. In making a selection of sorts suitable for the dessert, for ordinary kitchen use, and for market and exhibition purposes, I have to remember that I made a somewhat similar selection last year, and may on the present occasion submit some somewhat diverse kinds. Last year we had not a good season for hardy fruits, and this season so many more kinds have fruited that the range of selection has been wider. However, I have been aided by Mr. Morle in the selection, and his opinion as that of one of the most experienced of hardy fruit growers merits every consideration. Among small-fruited early kinds—for most of this section are early—selected chiefly if not absolutely for flavour, I favour, besides the one previously named, Red Ironmonger, Red Champagne, Early Red Hairy, Keen's Seedling, and Red Warrington as all first-class coloured varieties. It is worthy of note that high flavour and moderate size are thus allied, whilst the bigger the fruits the poorer the flavour. Here this feature runs through nearly all fruits, yet, oddly enough, popular favour is more freely bestowed upon mere dimensions as a rule than upon flavour. If we turn to the green varieties the same thing is observed; indeed no coloured kinds can excel the delicious little hirsute greens, such as Early Green Hairy, Pitnaston Greengage, and the Hedgehog. There is yet another odd feature in relation to Gooseberries, and it is that flavour and hairiness seem invariably to run together. Turning to the yellows, which again are small, hairy, and rich in flavour, the best are Rumbullion, Stella, and Yellow Champagne. Some have a liking for the old Golden Drop, but, sweet as it may be, it has to give place for flavour to those named. Here are a dozen varieties, selected purely for their dessert qualities, enough to satisfy all possible requirements. Ordinary bushes, cordons, wall-trained trained trees on north walls, and espaliers would in various aspects enable this selection of Gooseberries to be spread over a long season. For kitchen or market use heavy croppers, and when ripe not bad flavoured, the following half-dozen reds are of the very best; Lancashire Lad, the great Middlesex market Gooseberry; Companion, very fine; Rough Red, wonderful cropper; Lord Derby, very fine and free; Highlander; and Saxley Hero, also a great cropper, and excellent in flavour. The selection is not so large as is that for dessert purposes, but it is large enough for all ordinary purposes. When in market gardens of twenty acres in extent only Lancashire Lad and Crown Bob are found grown, it would seem certain that six fine succes-

sive kinds of kitchen sorts are enough for any ordinary garden. The exhibition Gooseberries are many; indeed the bulk of sorts grown seem to be made up of varieties notable for size of berry. Some of these are, when ripe, mere bags of water. Some are fairly good; when grown solely for the purpose of producing green fruit for tarts early, the question of flavour does not arise, as intense acidity dominates all else, but the earlier the berry develops size, the more useful it is for marketing. A selection of six of the large red kinds includes some specially early berry-producers, and comprises Marlborough, Clayton, Forester, Bobby, Duke, and Lord Derby. Again, turning to greens, Surprise, Telegraph, and Keepsake are fine. Of yellows, Leveller, Railway, and Candidate, and of whites, Antagonist, Lady Leicester, and King of Trumps rank amongst the best. We shall not probably see these large-fruited varieties grown largely in the south. They seem to owe their popularity chiefly to the Gooseberry shows of the north, whilst in the south they will be, or are, grown because of early berrying. That we grow so largely green berries serves somewhat to discount the practice of growing the small-berried, high-flavoured sorts, as it is very doubtful whether, under existing conditions, their growth could be made to pay. In private gardens, however, where the production of fruits for dessert is one of the chief labours of the gardener, all the best small-fruited Gooseberries should find a place; indeed, without them in their proper season, the furnishing of a liberal and varied dessert daily must be a matter of extreme difficulty.

A. D.

FRENCH V. ENGLISH METHODS OF PEACH TREE TRAINING.

IT must not be supposed that what is now termed the extension system of training the Peach was unknown to the last generation of English gardeners. Fifty years years ago my father grew Peach trees in this way, and one of the first lessons I ever received in fruit culture was that the hard cutting back of young trees was a grievous error. I was taught that the great point to keep in view was to cover the allotted space as quickly as possible, cropping moderately the while. This would throw such vigour into the trees that later on heavy crops might be taken without danger of overtaxing their strength. Over-cropping young trees, if only for one or two seasons, will probably affect the quantity and quality of the produce during the whole period of their existence. Be this as it may, it is certain that the way to secure longevity with fruitful vigour is to favour a growth that shall be free from checks of any kind until the tree has come to a mature age. As regards the unfavourable comment made on the French method of training Peach trees in a recent number of THE GARDEN, I fail to see why, if a man so desires, he should not gratify the eye, by forming trees that are perfect in regularity and symmetry of form. The French always study effect, and from some experience of French gardeners, I believe that they have a keener sense of beauty of form than their English brethren. I can well imagine the wonder and disgust of the French Peach grower who saw for the first time the naturally trained trees, mentioned at p. 1. Of all cultivated fruits, the Peach is that most loved of the French gardener, and he spares neither time nor labour to endow his trees with beauty and fertility. It must not, however, be assumed that this training for form is carried out at the expense of productiveness. I have seen Peach trees in French gardens on open walls perfect in the regularity of the disposition of their branches, yet full of fruit from the base upwards. The French Peach grower who could not produce such trees would not be thought of much account. The whole matter as between the symmetrical trees of the French and the naturally grown or extension trained trees, as it may be preferred to call them, of our own gardens is simply this: the formation of a Peach tree on a plan that exacts perfect regularity of growth involves loss of time. There must be a regular patient course of pinching and pruning until the desired form is obtained. While

the vigorously trained tree is having the framework of its future shape slowly built up, the naturally grown one is rambling almost unchecked over the wall. In the course of time the symmetrical tree will bear excellent crops, but its earlier years are to a certain extent lost. As far as the training of the Peach in this country is concerned, I do not think that there is any likelihood of the French method being adopted. We have not a climate that admits of the preservation of the Peach for a lengthened period in any particular shape. The dying out of branches is so incidental to Peach culture in this country that the most ardent admirer of symmetrical trees would not care to run the risk of having the labour of years quite marred by the effects of an inclement season or two. I am, of course, referring to open-wall culture. Under glass one should be guaranteed against climatal influences, but I think that the effect of an artistically trained tree is only fully apparent on our open walls. Like an oil painting, there must be a certain space between it and the spectator before its points of excellence are fully brought out. Many trees, too, are trained near the roof, and this position does not admit of the display of symmetrical training. I do not doubt but that in a past era of hardy fruit culture, Peach trees were commonly trained on open walls in this country, as in France at the present time. I remember that some years ago the late Mr. Barnes, of Bicton, when on a visit to Paris, on being shown some well-trained Peaches and illustrations of notable specimens of them, did not appear to be much impressed thereby. The remark he made was that we used to grow them in just the same way in this country, "but," said he, "we can't do it now; our climate has changed." This I know to be the case, for here in Surrey, tons of Grapes, not sour, half-ripened fruit, but sweet and luscious with the tinge of yellow on the berries that distinguishes a well-ripened, open-air-grown Sweetwater, were taken from cottage walls and roofs, and now, alas! the Vines cannot be kept alive.

Then we had hot summers with fine, dry autumns, in the genial influence of which fruit ripened and wood matured. We have also to take into account what a revolution cheap glass has worked in English gardens. In olden days there was perhaps but one glasshouse in a large walled-in garden. It was natural that the gardeners of that period should make the wall fruits the objects of a loving care that has since been diverted into another channel. No doubt the Peach then was one great test of a gardener's proficiency in fruit culture. Even at the present time one may occasionally meet an old garden with a remnant of the old-fashioned gardener's skill and care in tree training. Such instances like the old heavily timbered glass-houses of the same period seem to form a connecting link, every year becoming weaker, between the gardening of a past generation and that of our own time. It is, however, the longer-lived Pear that reminds us still of the good old gardening work, and some aged trees are—at least they were a short time ago—to be found in the old forcing gardens at Hampton Court. I do not know when they were planted; perhaps at the same time as the famous old Vine; and, like it, they are the worse for wear. I remember some years ago showing them to a Frenchman, and he at once made comparisons between the English fruit growers past and present, and not to the advantage of the latter. But he added, "it is probable after all that they were formed by a French gardener." Whoever did train them was master of the art, but I believe that thirty years ago the artistic training of Pears and Apples on walls and espaliers was much more in vogue. I must own to a great partiality for a symmetrically trained fruit tree. The presence of such trees in a garden seems to indicate that a master-hand has to do with them. This liking may be due to having lived for some time where such trees were abundant; but I do think that if young gardeners would give more thought to the details connected with fruit trees on open walls our gardens would gain in interest. It must, however, be admitted that the large quantity of tender plants required for bedding and the demand made by the

glass department generally often leave a gardener but little time to bestow on wall fruits.

J. C. B.

WORK IN FRUIT HOUSES.

FIGS.

EARLY trees from which the first gathering was made in May will now be ripening up the second crop, and although the fruit may not be so large, the superb quality independently of quantity will satisfy the most fastidious connoisseur. Although the Fig will stand any reasonable amount of heat the fruit at this season should be ripened pretty well if not entirely under solar influences, and the more liberal the ventilation the longer will it keep after the skin begins to shrink and shrivel. Pot trees, as a matter of course, will have been kept well plunged, top dressed and regularly fed with generous liquid, and, provided the foliage has been copiously syringed, the several insect pests should hardly gain headway during the ripening period. If they are they must be kept in check, first by allowing the roots to run freely over the rims of the pots into the moist plunging material, and second by picking very close at least once a week, and giving the trees an overhead deluge in the evening. As pot trees cannot be expected to carry more than two crops, all latent fruits or figlets should be rubbed off as they are too forward to stand and too backward to ripen. When the crop is gathered, trees which do not require potting may remain undisturbed for the present, but they must not be allowed to dry off until the point buds are set and embryo fruits the size of swan-shot are perceptible. Then as these will swell and respond to early forcing, the trees may spend a month in front of a south or west wall in the open air, or after lifting to check the roots which have escaped through the apertures, they may remain on the pedestals with a full flow of top and front ventilation. Trees, on the other hand, which require a shift into larger pots should be turned out when thoroughly moist, root trimmed and transferred to others a size or two larger the moment the last fruit is gathered. A fresh growth of wood being objectionable, if not fatal to successful forcing, the best place for these trees is a very mild plunging bed in a house or pit, from which the roof lights may be removed until September. Under this method of keeping the heads cool and the pots in an old declining bed, watering will be reduced to a minimum and new roots will fill the fresh compost by the time the leaves fall in September.

Trees trained upon fixed trellises, like those grown in pots, must be divested of all intermediate fruit that will not ripen by the middle of August, and properly matured wood forming the keystone of success, all exhausted, useless, or pointless shoots and branches after that date may be removed, not only to let in light and air, but also to reduce the labour of temporary cleansing. Brown scale, red spider, and mealy bug are quite at home in the Fig house, and being terribly tenacious, a check by the use of the syringe or engine is all that can be hoped for until after the leaves fall. Hot water at a temperature of 120° syringed over the trees after sunset produces a most decided check upon these insects and does no harm to the foliage, and the same may be said of Gishurst compound, Tobacco, soot, and sulphur water, but paraffin, Fir tree, and other oils should be used with great caution. When trimmed and cleansed, the trees should be well hosed with pure water early the following morning, and in due course loosely tied down to keep the points clear of the glass and equi-distant from each other. When the wood is ripe, houses with fixed roofs must be well ventilated and kept as cool as possible, or the lights being portable they may be removed for a month for repairs and painting.

Trees in late houses now swelling up or ripening their fruit must be kept moderately moist at the roots, and the stems, walls and floors freely damped on bright mornings. No water, however, should touch the fruit or foliage, as an excess of moisture, especially when the lights are closed, is sure to tend to spotting. Late trees which produce

one good crop of fruit, and that principally by the aid of solar heat, should not be pinched, as second growths rarely ripen. The shoots, on the contrary, should be kept thin upon the extension principle, and when they reach the extremities they may be cut out to make room for others intended for succession. The secret of success, unaided by fire-heat, consists in keeping the young growth short-jointed, by no means gross, and evenly distributed. Full crops of fruit keep old extension trained trees right, sometimes for years, but young ones require biennial, and not unfrequently annual, root-pruning. Trees showing a suspiciously strong shoot should be root-pruned by the end of September.

MELONS.

Good plants of some free-setting variety may still be put into 14-inch pots for giving a supply of late fruit, the most important provision being the means for giving plenty of top and bottom heat by means of hot-water pipes when the crop is swelling and ripening. Fermenting leaves or tan for some considerable time will be ample, and the plants will make a cleaner and healthier growth without than they will with the aid of drying fire heat; the plants, moreover, being on solid pedestals, or glazed drain pipes capped with sods of heavy turf, the bed can be turned and renovated very often without disturbing the roots, which, by the way, will not ramble away from the medium through which all the liquid must pass on its way to the dark, warm regions below.

The best compost for late Melons is strong, friable loam, old lime rubble, a dash of soot, and perhaps a few handfuls of bone dust, but on no account should it be rich enough to force gross foliage or vines which cannot be pronounced healthy, woody, and wiry. The pots at this time of year should be liberally crocked, and the harder the dry compost is rammed the greater the certainty of success, as very little water can be held in suspension. The pots may be plunged within a few inches of each other, and each lateral must be pinched at the first joint until the female flowers show, when these may be allowed one leaf beyond the fruit, or they may be divested of their points close home the moment the sex of the flower is perceptible. Many growers leave one or more joints beyond the fruit, but this really is not necessary, as a second lateral will be well on its way by the time that the flower is ready for fertilising. Two fruits to a plant are ample, and these, if possible, should be set in the same forenoon, a few hours even being quite sufficient to give one or other the lead. When set and the size of hens' eggs, feeding may be commenced by pouring clear, weak liquid over the rims of the pots, also by charging the evaporating pans and damping the surface of the bed, but on no account must it reach the collars of the plants or touch the foliage. Late Melons may be well syringed when shut up with strong solar heat up to the flowering stage, when wetting the foliage should be discontinued altogether, and canker being the greatest enemy, each leaf from base to summit should be most carefully preserved from damage by breakage.

Frames.—Melons in frames having had a good time throughout June, the fruit should now be well advanced, if not actually ripening. When grown upon conical hills or sharp ridges upon which moisture cannot lodge, and the vines are allowed to ramble over the surface of the bed, each fruit should be elevated upon an inverted pot to keep it clear of woodlice and water when the compost is flooded with warm stimulants. It is not a good plan to expose the swelling Melons to the full influence of direct sun; but once they have attained full size, solar heat and light should reach them indirectly through the openings in the old leaves. If the main vines are thinly trained, a few laterals will assist the fruit and keep the plants in health, but once netting sets in the removal of all young growths must form a piecemeal operation, and no more water must touch the fruit. Flooding the extremities of the bed in like manner must gradually give way to drier conditions about the roots, and a sharp top and bottom heat being the talisman which gives flavour, the linings must be kept well up to

the mark. Liberal ventilation, another important factor, by this means can be maintained, not by pushing one light up and another down to excite a cutting draught, but by tilting all of them very freely along the south front, especially when the wind, so prevalent this season, is blowing from the north. If all has gone well and the very common error of over-feeding has been avoided, the fruit of medium size, most decidedly the best, should send forth its delicious aroma some days before it is fit for cutting, but when the stalks begin to crack and the vinous juice to escape, they should be cut and placed in a dry airy room until wanted for use. Melons vary considerably in the ripening stage, some varieties being fit for use within a few hours after they are detached, whilst others go on improving for several days, hence the advantage of sticking to one or two really good sorts and learning to a nicety when they are fit for the table. An old hand has said all Melons are good when properly grown, but this assertion I doubt, as certain varieties which I could name have bad habits which the best of cultivators cannot overcome.

ORCHARD HOUSES.

Peaches and Nectarines in early houses, to which moderate fire-heat has been steadily applied, will now be pretty well clear of fruit and in the best possible state for potting. If space is limited and the earliest batch potted three weeks ago are growing freely, room may be made by transferring them to a warm south border, where they can be plunged to the rims and lightly mulched to economise labour in watering. A thoroughly moist condition of the soil being so essential to root-growth, and at the same time tempting to worms, each pot should be placed upon two bricks, a few inches apart, to prevent them from entering through the apertures. When properly arranged, room being allowed for moving amongst the trees as well as for letting in sunlight and air, the syringe must be liberally plied about 6 o'clock on fine evenings. The next batch of trees requiring larger pots may then be shifted and treated precisely as the preceding, both as regards syringing, careful watering, and possibly shading. This, however, unless the balls are considerably reduced, will hardly be necessary, especially where the house is not too freely ventilated and the foliage is nicely syringed night and morning. If any of the older early trees in full-sized pots have got into an unsatisfactory state and reducing is considered necessary, they may now be taken in hand, as new roots will form in fresh compost almost immediately. We sometimes pare down the balls, pick out all the crocks, and return the trees to the same sized pots, when by keeping them close and moist they hardly feel the check, provided they are lightly shaded. Another and still better plan, especially when the old balls are sour and bad, is soaking in tepid water and washing out the whole of the inert compost. The roots, thus relieved of an incubus and slightly trimmed, may then be placed in much smaller pots, the compost, pure, rather dry loam and bone-dust, being well worked and shaken in amongst them. Very firm potting, of course, is necessary; but in cases of this kind the potting-stick must be carefully used until the pots are nearly full of compost and the roots are out of danger. What is termed "jumping" the pots sharply upon the bench and steady ramming will then do no harm; but the best of all rammers is flooding the soil home with tepid water.

Late houses, in which the fruit is swelling very fast, should be well syringed soon after 6 a.m. and again after the ventilators are closed, about 4.30 in the evening. Pure soft water equal to the mean temperature of the house should always be used, and the evening bath below as well as above the leaves should leave no dry spot for spider to rest upon. The top-dressing, mixed some weeks ago and kept dry, may now be placed on the pots little and often at short intervals, and lest surface moisture prove misleading, each tree should be thoroughly watered before the house is closed for the afternoon syringing. Some trees in extra large pots may not require a thorough soaking every day, but the majority of them will, and medium-sized pots well filled with roots will take two waterings

within the twenty-four hours during hot, dry weather. The first supply after fresh top-dressing is applied may be pure, but very mild stimulants, consisting of clear diluted liquid guano and soot water, may be given once a day afterwards. Size and quality being of more importance than quantity, the fruit upon each tree should be thinned with a liberal hand, all gross laterals should be pinched, not only to let in light, but also to husband the sap, and the house should be liberally ventilated. Under this generous treatment spider cannot live, and aphids will have an uncomfortable time, but in the event of the latter spreading, a safe remedy will be found in mild fumigation. Smoking when the foliage is damp being useless, if not dangerous, the trees should be well root-watered, but left without the afternoon bath when this operation is decided upon. Night air after light fumigation may be omitted, but the trees must be well syringed before the sun strikes the house the following morning, and on no account must early ventilation be neglected. As the fruit upon the earliest trees lays on colour and shows signs of softening heavy syringing and night damping must be reduced, but by no means suddenly discontinued, and more fresh air, if that be possible, may be admitted. I have often suggested keeping early, midseason, and late varieties in sections; those who have adopted this arrangement will now find their management greatly simplified.

W. C.

Woodlice in Melon frame.—I have some Melons netting nicely, but the heating material is infested with woodlice. How can I prevent them from attacking the fruit when ripening? Is there anything I could rest the Melons on that these pests dislike? I think it would be useless to try to eradicate them, as I have a brisk heat. Would it be of any use to spawn the bed with Mushrooms after the Melons are cut?—T. R. D.

*** Woodlice in frame containing Melons* which are now beginning to net may be greatly reduced in number by trapping before the fruit is ripe. Procure a few small dry flower-pots, put a slice of raw Potato in each, cover with a pinch of Moss, and lay them on their sides in the frame. Go round every morning with a jar of boiling water, transfer the woodlice from the dry ambush to the jar, relay the traps, and persevere. Also, lay small heaps of Lettuce or Cucumber leaves about in the frames where hot water will not reach the roots or foliage of the Melons. Examine these heaps every night, and pour boiling water over the lice when feeding. Woodlice may be prevented from doing much harm by placing each fruit upon an inverted flower-pot resting rim downwards in a saucer filled with water; or in lieu of the saucers of water, when the ripening fruit requires dry heat, each pot may be capped with a square of glass a few inches larger than the pedestal. Woodlice enjoy heat, a dry ambush, and solitude. Therefore, by reversing these conditions as much as possible they will be discomfited. Every effort should be made to catch and kill them, as they may attack the stems and foliage after the wholesale nibbling of the fruit has been made impracticable. With reference to your second query, as to growing Mushrooms on the spent Melon bed after the fruits have been cut, see THE GARDEN of July 27, p. 73.—W. C.

Chinese floating gardens.—In a recent number of the *China Review*, Dr. Macgowan describes the manner in which floating fields and gardens are formed in China. In the month of April, a bamboo raft, 10 feet to 12 feet long and about half as broad, is prepared. The poles are lashed together with interstices of an inch between each. Over this a layer of straw an inch thick is spread, and then a coating 2 inches thick of adhesive mud taken from the bottom of a canal or pond, which receives the seed. The raft is moored to the bank in still water, and requires no further attention. The straw soon gives way and the soil also, the roots drawing support from the water alone. In about twenty days the raft becomes covered with the

creeper (*Ipomœa reptans*), and its stems and roots are gathered for cooking. In autumn its small white petals and yellow stamens, nesting among the round leaves, present a very pretty appearance. In some places marshy land is profitably cultivated in this manner. Besides these floating vegetable gardens there are also floating Rice fields. Upon rafts constructed as above weeds and adherent mud were placed as a flooring, and when the Rice shoots were ready for transplanting they were placed in the floating soil, which being adhesive and held in place by weed roots, the plants were maintained in position throughout the season. The Rice thus planted ripened in from 60 to 70, in place of 100 days. The rafts are cabled to the shore, floating on lakes, pools, or sluggish streams. These floating fields served to avert famines, whether by drought or flood. When other fields were submerged and their crops rotten, these floated and flourished; and when a drought prevailed they subsided with the falling water, and while the soil around was arid advanced to maturity. Agricultural treatises contain plates representing rows of extensive Rice fields moored to sturdy trees on the banks of rivers or lakes which existed formerly in the lacustrine regions of the Lower Yangtze and Yellow River.

ORCHIDS.

W. H. GOWER.

DENDROBIUM LOWI.

THIS is a beautiful species belonging to the nigro-hirsute section. It was sent home from Borneo some thirty years ago by the present Sir Hugh Low to his brother, the head of the firm at Clapton. It has seldom been introduced since, but having seen the plant, I think in two collections at the last Royal Horticultural Society's exhibition, reminds me of it. It has been so seldom seen in our gardens, that few occasions have occurred to record its existence. Its colours are so rare for the group to which it belongs, that it is worthy of all care and attention, although it is what may be called an uncertain plant from a cultivator's standpoint. It is recorded as growing on trees on the mountains of North-western Borneo, at some 3000 feet elevation, so that I feel disposed to think the difficulty which has been experienced in growing it in England is the same as with a great many other tropical Orchids: they have been kept in too hot a temperature and in too close an atmosphere. It, moreover, is one of a set of plants which dislikes much material about its roots, a fact that is not sufficiently recognised by Orchid growers at home. As the plant has, however, again appeared in our collections, I trust that there exists sufficient skill amongst our growers to maintain and retain it in a living state in this country.

It is a plant with slender stems, each a foot or more high, and furnished with short black hairs. The scape issues from the opposite side of the stem to the leaf, and bears from two to five flowers. These blooms are long-spurred and rich yellow, somewhat resembling the flowers of *Tropeolum polyphyllum*. The petals are broader than the sepals; the three-lobed lip is also yellow, bearing from the base to within a short distance of the edge of the front lobe six raised lines, which are fringed with long crimson hairs; the spur is long and conical. It appears to be a free-flowering plant, and is worthy of all commendation.

Odontoglossum vexillarium superbum.—This is certainly the finest form of this grand species which I have yet seen. I have seen it flowering in the Burford Lodge collection, and I recently noted it in great perfection in Mr. Tautz's beautiful collection at Shepherd's Bush, where the species is largely grown and in numerous varieties.

The variety *superbum* is not so remarkable for size as for its exquisite colouring, the sepals and petals being of a lovely rosy pink, the lower sepals having one or two short lines of dark reddish purple; lip white at the base, over which is spread a large triangular blotch of dark reddish purple, leaving a marginal belt of white between the purple and the intense deep rose colour of the limb. It is still a very rare form.—G.

Disa grandiflora at Dangstein.—There are at present at Dangstein, the residence of Mr. C. T. Lane, twelve plants, in 8-inch and 10-inch pots, of *Disa grandiflora*, bearing in all thirty-three spikes and buds, ranging from four to six flowers on a spike, and in one instance seven. The spikes vary from 2 feet to 3 feet in height. There are two distinct varieties of *D. grandiflora*, one being of a more intense scarlet colour with lighter veins. I have staged the plants in a group, and they will remain in flower for some time to come yet. I am told by visitors that it is somewhat rare to see *D. grandiflora* flower so well as it does here, hence my writing to you.—C. B.

Thrixspermum unguiculatum.—J. Mackintosh sends flowers of an Orchid sent him by an officer in the Indian army, and now in Burmah, supposing it to be a new *Phalenopsis*, but although resembling the members of that family considerably in growth, and thriving under similar treatment required by those plants, it is not one of them. It is a rare plant in cultivation, and exceedingly beautiful; sepals and petals pure white and fleshy; lip also thick and fleshy in texture, three-lobed, side lobes erect, white, streaked with crimson, front lobe small, yellow, with a few crimson spots. The plant thrives best in a hanging basket. It flowers freely, its greatest fault being that the individual blooms remain in beauty only for a short time. It must be grown in the hottest house, given water liberally when growing, and not allowed to become dry in the winter season.—H.

Lælia grandis (W. Marshall).—The flowers sent represent a fine form of this species, sepals and petals about equal, with wavy edges, and of a uniform rich, deep nankeen colour; lip large, creamy white, the front lobe beautifully veined and suffused with magenta-rose, with a stain of orange in the throat. It is a beautiful species, and has been very rare in cultivation, but a large quantity of it was imported by Mr. Sander, of St. Albans, some time last year, and I recently noted a fine lot of large specimens in that establishment, so that we may reasonably expect some varieties to produce even superior flowers to those received from Mr. Marshall. The plant comes from the Bahia district, and therefore enjoys considerable warmth and more moisture during the growing season than the majority of the family.—G.

Dendrobium transparens.—This is an old species, and some very fine specimens are now flowering in Mr. Williams' nursery. I have usually flowered this plant in the spring months, and was surprised to find it in full beauty in the middle of July. It is a slender-growing plant, attaining a height of from a foot to 18 inches, and produces its flowers in the greatest profusion in pairs and in threes from the stems which were made the previous season. The flowers are white tinged with rose or mauve, the lip in addition bearing two eye-like spots of deep purple at the base. I have grown this plant in hanging baskets and also in pots, and in either position it will thrive well if it is kept warm and moist when growing. After growth is finished and the stems yet hard the plant should be removed to a cooler house, and exposed to the full sun, and kept quite dry. This will cause all the leaves to fall. Through the winter it should be kept dry, but not allowed to shrivel. Treated thus a fine display of bloom will appear in due season.—W. H. G.

Warscewiczella Wendlandi.—This is one of a set of plants which have been found somewhat difficult to manage, or rather we appear to expect too much of them. It does not form pseudo-bulbs, and it is apt to lose its leaves, but with a moderate amount of foliage the flowers are truly charming.

I recently noted a plant of this species bearing five blossoms; each measured about 4 inches across, the sepals and petals spreading, yellowish green, white at the base; lip large and deeply frilled at the edges, white, with a broad central band of bluish violet, upon which are several longitudinal stripes of deep purplish violet. In addition to the charm of its colour the flowers are deliciously fragrant. The warm end of the *Cattleya* house suits this plant well; it enjoys light, but not sunshine, and it should be kept moist all the year round, and during the period of growth abundantly supplied with water.—W. H. G.

Lælia elegans prasiata.—This is one of the beautiful dark-flowered forms of the species, and it is now flowering with Mr. Williams at Holloway. It has some resemblance to the famous variety *Turneri*, and for which it is frequently sold, but it is quite distinct. The plant in question is a strong growing form of *L. elegans*, the flowers each 5 inches or more across, in shape quite typical, sepals and petals deep rose colour, the latter much the darker, and the former having a tinge of green running through them; lip three-lobed, the side lobes white, the ends turned upwards and rich crimson, middle rich bright crimson with darker veins; here the very great difference between it and *Turneri* is apparent. It is a superb variety, and it is exceedingly curious that amongst the variations of this species nearly all the late-flowering forms are dark flowered, whilst the earlier kinds have light sepals and petals. It requires strong heat to grow it well.—W.

Zygopetalum Burkei.—I was surprised to see a flower of this rare plant at this season of the year, but I suppose the spike was produced from an abnormal growth, as the only occasion upon which I have previously seen this species was in the month of November. It is a slender-growing plant, and for its introduction we are indebted to the Messrs. Veitch, of Chelsea. It has narrowly oblong pseudo-bulbs, which bear upon the summit a pair of narrow leathery leaves. The scape bears four or five flowers, each of which is about 2 inches across. Sepals and petals are nearly equal, green, with numerous longitudinal streaks of deep brown; lip large, with a spreading obovate lobe in front which is pure white, the basal part streaked with crimson. I am told by the sender that he finds it requires very strong heat and an abundance of moisture. It is a native of Demerara.—G.

Epidendrum nemorale majus.—This is a Mexican species of great beauty and rarity. It has been in some manner confounded with *E. verrucosum*, which is very different in habit and possesses far less beauty. *Epidendrum nemorale majus* was cultivated by the far-famed Loddiges, of Hackney, which is sufficient proof that it is not of recent introduction, and a plant which I recently saw in flower gave sufficient indication that the species has lost none of its loveliness. The spike grows from 1 foot to 3 feet in length and is much branched, producing a large, drooping panicle of blooms. The flowers are of a rich, rosy mauve hue, the lip becoming pale in the centre of the large middle lobe. It is a plant which likes to be kept cool, but well exposed to the light. After flowering, it commences to grow, and continues to do so through the winter months, during which time it must be watered carefully. When its growth is finished, the spike, or spikes, begin to push up, and to support these a slight increase in the water supply up to the time of flowering is necessary, the only rest which the plant obtains being immediately after blooming.—W. H. G.

Dendrobium Hookerianum (J. Grenfell).—This is the name of the flower sent. It is not *D. fimbriatum oculatum*, to which, however, it is nearly allied, but from which it may be easily distinguished by its habit of flowering upon the stems bearing leaves, and not on the old leafless ones, by its larger flowers, which have the deep maroon colour at the base of the lip divided into two eye-like spots, and also in the much deeper fringe to its lip. The beautiful flowers are of a rich golden-yellow, and this, no doubt, caused Reichenbach to

name the species *D. chrysotis*, he being in ignorance that it had been previously named by Lindley, in 1859, in honour of its finder, the present Sir Joseph Hooker, who found it, in 1848, growing on trees in the valleys of Sikkim, at elevations of from 1000 feet to 5000 feet above the sea level. The first plants which came into cultivation were imported from Assam, a neighbouring province, but at first it appeared to be difficult to grow. I myself have also imported large quantities of it from Assam, but the plant has never become plentiful in cultivation. J. Grenfell's plant would appear to have flowered early in the season; it is generally two months later in blooming. It requires strong heat and moisture.—W. H. G.

Thunias at Holloway.—These plants are very gay and showy just now with Mr. Williams—T. Marshalliana, with its light coloured flowers, and T. Bensoniæ, with its large deep-coloured blooms, being very effective. There is also a very distinct and pretty hybrid flowering here—T. Wrigleyana, named by its raiser in honour of a famous grower of Orchids in Lancashire. I believe the same plant was afterwards raised by the Messrs. Veitch, of Chelsea. It is a plant of exquisite beauty; the sepals and petals are soft creamy white, with a tinge of mauve colour, the lip being beautiful purplish mauve, veined with purple, the throat orange-yellow, the raised lines on the disc fringed with deep orange-coloured hairs. Another beautiful variety which I saw this season with Mr. Goodhart, of Beckenham, was *ionophlebia*, a form of Marshalliana, and very beautiful. Thunias are deserving of general cultivation, and may be easily increased by cuttings of last season's growth. They grow freely and flower profusely. The blossoms are large, richly coloured, and last a long time in full beauty, whilst being deciduous the plants do not occupy much space during the winter.—W. H. G.

SHORT NOTES.—ORCHIDS.

Cattleya Gaskelliana alba (F. B.).—The flower received is a variety of this species, and not of *C. Mendeli*. It is a superb variety, the whole flower of the purest white, saving a deep yellow throat, the petals and lip beautifully frilled. One point of distinction in this plant is that it flowers from the young growth as soon as mature. *C. Mendeli* blooms from the growth of the previous season.

The Golden Chain (Dendrochilum filiforme).—This exquisite gem is now in great beauty in Mr. Tautz's collection at Shepherd's Bush. A beautiful specimen is bearing fifty of its delicate chain-like spikes of golden yellow flowers. This name, we believe, was given it in the first instance by Mr. Keynes, of Salisbury, and it is a most appropriate one. It is a great pity we cannot have more good English names for Orchids in addition to their Latin ones.

Scuticaria Hadweni.—A rare plant, having much the appearance of the more familiar *S. Steeli*. The scape is longer and the flowers distinct. The sepals and petals are yellowish-green, blotched within with deep chocolate; lip white, stained towards the base with pale yellow and streaked with reddish-purple. We recently noted this species flowering in Mr. Williams' nursery at Holloway.

Dendrochilum latifolium.—In habit of growth this is similar to *D. glumaceum*, but stronger; it has graceful, pendent racemes of flowers, which, however, are more remarkable for their grateful Vanilla-like odour than for beauty of colouring. The flowers are small, sepals and petals yellowish green, and the small lip dull orange. We recently noted this flowering with Mr. Williams at Holloway. It requires a warm house, as, like most of the species, it grows wild in the Philippine Islands.

Houlletia odoratissima.—This is a beautiful member of a family of Orchids, whose cultivation was considered at one time very difficult. This was in the days when the cool treatment of Orchids was not understood or believed in. It is only within the last few years that this genus has been treated in this manner, and consequently it is only now that we can enjoy these singular and beautiful flowers, which in this species smell like Violets. This plant I recently noted flowering with Mr.

Tautz at Shepherd's Bush and Mr. Williams at Holloway. The spike is erect, bearing numerous flowers, each nearly 3 inches across; the sepals and petals reddish purple, more or less streaked with lines of a deeper hue; the peculiarly shaped lip is white, stained with yellow.—W. H. G.

FLOWER GARDEN.

JAPANESE ANEMONES.

THESE charming Windflowers, of which there are at least three distinct kinds at present in cultivation in our gardens, are deservedly great favourites with all who love and own a garden, not only for their great and lasting beauty, but also on account of their being at their best during the late summer and autumn months, a time when such flowers are much needed to brighten up our flower beds and borders. They are absolutely hardy, and may be planted in the most exposed situations without the slightest fear of harm. They are also extremely useful for cut-

sport from the common type. It originated in the garden of M. Jobert, at Verdun-sur-Meuse, from a tuft of the old *A. japonica*, with red flowers. From this plant a root-branch produced pure white flowers. This is indeed a handsome variety, and deserves all that has been said in its favour in our columns. The flowers are of the purest white, of good substance, well carried above the ample foliage, and last for many weeks in perfection.

The great beauty of these Japanese Anemones is that they never require a stake or any support whatever to mar their perfect form and symmetry. This is no small point in their favour, seeing how ridiculous plants can be made to appear when supported by young saplings thrice the strength of the stems they support. These three forms have now been naturalised in the wild garden, and appear as much at home as our own native Windflower. Indeed, there can be no reason why they should not be planted together, flowering, as they do, at different seasons, and being so much unlike in outward



The white Japanese Windflower (*Anemone japonica* Honorine Jobert).

ting, and would be very useful where there is a heavy tax in this direction. The flowers, which are of good substance, last a long time in water in warm rooms, and, above all, the display is almost certain whether the season be a dry or a wet one. The type, *A. japonica*, is perhaps the least desirable of the three, though in point of colour and free-flowering qualities it equals, if not surpasses the other two. It is a native of damp woods on a large mountain called Rifune, in the neighbourhood of Niah, Japan, and was first introduced to this country by the indefatigable Fortune while travelling for the Royal Horticultural Society. It was undoubtedly a great acquisition. The only fault to be found with the type is the ragged appearance of the flowers when fully open. The variety called *hybrida*, said to have been raised at Chiswick between the Japan Anemone and the nearly allied Himalayan *A. vitifolia*, produced several forms, but only one seems to have been retained in gardens. It has large regular flowers of a soft pink tint, and is one of the handsomest autumn flowers we grow. There is another variety in much request called *Honorine Jobert*, said by Froebel to be a

appearance. They will not, however, stand being often disturbed, and are never better than when left entirely alone. They may be used very successfully for greenhouse decoration, simply keeping a good stock in the reserve garden, and when in bud choosing those only that give greatest promise, the length of the flowering season with a little management lasting two months. Our woodcut represents a huge group, which indeed is the only way this plant can be seen to the best advantage and fully appreciated.

D. K.

Compact bedding Lobelias.—“J. C. C.” evidently is to be condoled with in not having hitherto met with a strain of blue compact Lobelia which comes true from seed. That there are such to be found I have ample evidence here, for out of hundreds of plants not two are otherwise than true in character. However, I have found in previous years some strains not so good, but it is a matter of hard and continuous selection, and all that is looked for will come right in the end. We have in flowers accomplished far more wonderful things than in securing a *bona fide* strain of compact blue Lobelia. I should like to get some plants of the white

Lobelia of the west to which "J. C. C." refers. If this white *Lobelia* be better than the variety I have grown as White Queen, it must be a remarkably good one; still with all its merits I fear it has the same fault of reproducing blue-flowered sorts from seed rather than white ones. If that radical defect on the part of all white *Lobelias*, so far as my experience of them goes, could be cured, it would indeed be a great gain. It may be said that bedding *Lobelias* are so easily increased by propagation, that the defect is of little consequence; but such is not the case; indeed, myriads of persons not blessed with glasshouses depend for their bedding plants largely upon seeds raised in a frame or other shelter. To all these, any good strains of bedding plants which come true and readily from seed are welcome boons, as in that way they can cheaply make their gardens gay.—A. D.

Rudbeckia laciniata.—The most conspicuous feature in the herbaceous flora of North America is found, perhaps, in the great number of autumn-blooming plants of the natural order Compositæ. No foreigner visits any part of this continent during the months of September or October without being struck by the great masses of colour produced by our *Asters*, *Golden-rods*, *Sunflowers* and other plants of their order. There are among them many subjects which are admirably suited for cultivation in herbaceous borders, or for naturalisation in less carefully kept parts of the garden; but although sometimes found in the best European gardens, they have never yet received in this country anything like the attention which they merit. One of the best of these plants for the garden is *Rudbeckia laciniata*. It is an old inhabitant of gardens, having been cultivated by Tradescant, the gardener of Charles the First, as early as 1640, and is sometimes, although not very often now, found in collections of herbaceous plants here. A well-grown plant forms a stout mass of dark green and rather coarse foliage, sometimes 4 feet high, by nearly as much through, and covered during the month of September, year after year, without any care or attention, with long-stemmed, terminal heads of bright yellow flowers, which light up the herbaceous border or the margins of a wood-walk as few other plants are capable of doing. *Rudbeckia laciniata* is a widely distributed plant, being found from Canada to Florida, and as far west as Montana and New Mexico. The *Rudbeckias* are confined to North America, and twenty-one species have been distinguished. They all, with one exception, have bright yellow ray-flowers, and elongated dark brown or nearly black discs. They are all worth a place in the garden.—*Garden and Forest*.

Early-sown Wallflowers.—It is the rule in this part of Middlesex to sow Market Red Wallflower seed so early as February if the time be dry and favourable, so that very large plants are ensured for early winter blooming if a suitable chance offers for planting out. That depends in a measure upon the clearing off of other crops, but hard Wallflower plants are wonderfully tenacious, and are difficult to kill by drought. But in our stiff clay soil early planting is attended with some risk. The plants get so gross and large that severe weather will kill them wholesale, and I have seen breadths of fine plants, big as bushel baskets, literally decimated by March. The very early planting enables early cuttings of bloom to be obtained; but all the same, because the growth is so sappy the plants are more tender than are those planted later. Many of our growers plant early—that is, in June—for securing early flowers for bunching, and the small plants left in the seed-beds for lifting as plants in the spring. Many thousands of plants are sold in that way, and they go off amongst the very earliest of spring roots. Sowings have been made in the autumn. The plants stand in the seed-beds during the winter, and are planted out in April, but they have been killed wholesale early in the winter. Possibly on dry gravelly soil such harm would not result; but our soil is very retentive of moisture, and the Wallflower dislikes a saturated soil. Even in the spring, after the plants have bloomed well, the seed-stems will die off wholesale because of the

wet state of the soil. A course of treatment which would succeed on gravel may be productive of disaster on clay; indeed, it often takes years of experience to master the peculiarities of soils.—A. D.

THE WATER FAIRY FLOWER.

THE following letter received by Mr. Burbidge from Mr. Barton, of Hong-kong, regarding the cultivation of the Water Fairy Flower in China, will, we hope, be of interest to the readers of THE GARDEN:—

"As a lover of Daffodils I have read with much interest in THE GARDEN of March 2 your notes on the only form cultivated in China, the Water Fairy Flower, and as you express a wish for some further information as to these I take the liberty of addressing you on the subject, more especially as I think I can meet your desire for a larger importation of the Chinese *Narcissus*.

"Before leaving England, three years ago, I grew a small collection, and was therefore much interested to find on coming out here that it was still possible to grow Daffodils, though on a limited scale and under different conditions.

"All that you write as to the Chinese history and culture of the plant is correct (including the story of the brothers), as far as I have been able to ascertain. Chinese inform me here, however, that they do not as a rule, call the whole species 'Grand Emperor,' but they would refer to one particular spike or bloom in these terms, just as we should say, 'that is a champion Strawberry,' indicating one special goodness.

"In addition to the fact that the Chinese for the most part grow the bulbs in water, the leading distinction between their culture and ours appears to be that in China they are universally grown as annuals, the bulbs always being thrown away after blooming, and new ones bought for the next year. Various attempts have been made at different times to grow them a second year, but always, as far as I know, without success. In South China the chief and I think only farm is in the interior, not many miles from Foochow, at a place called Po Tin, and this, I believe, is the scene of the legend to which you refer. The property is still in the hands of the family mentioned in the legend, and the Chinese declare that the bulbs will not grow anywhere else, but this is probably a fiction, and one of a thoroughly Chinese kind.

"As to the culture on the farm, I have been able to obtain no information, but considering the enormous quantity grown in China and around, there must be some rapid mode of propagation, remembering that no bulb is grown a second year after being sent out.

"From the freedom with which the best bulbs bloom, and the number of flowering centres on each bulb, I am inclined to think that the blooming must be retarded for two or three years, so as to throw the whole strength of the bulb into the flower the year it is sent out.

"The most curious feature of the Chinese culture, however, is one to which you do not refer, and of which you may possibly not be aware. Their plan is as follows: they select the strongest bulbs having three or four flowering 'breaks,' and cut away the whole of the outer coatings of the bulb right down to the base, leaving the centres containing the embryo flower-stalks surrounded only by a thin coating. If large specimens are required, two or three bulbs after being so treated are fitted together with cotton wool wrapped round the upper side of the base, and worked together into a circular form; the points of the incipient flower-stalks now curl inwards, rather like the claws of a crab, and the

plants are placed in shallow wooden trays in about an inch of water and put into the sun.

"The effect of cutting away the outer coatings of the bulbs is to stimulate rapid growth of the flower-stalks or rather very rapid development of the flowers, which are borne on stalks varying from 2 inches to 6 inches, and as the growth is rapid, all the flowers come out at once. Just before this time the plants can be removed into any suitable bowl or china ornament, and a pretty and attractive room decoration is obtained. I do not think such a frequent change of water as you mention is necessary; the bulbs treated as above bloom in about twenty days after being put into the water, and it may be changed two or three times. In addition to this mode of growing, thousands are grown in shallow pots half filled with water, the bulbs not being cut.

"They do exceedingly well, moreover, massed in borders in the garden, and I had a fine display last January grown in this way.

"There are only two kinds that I have yet come across—the single *Tazetta* and double-flowered (much resembling the double Roman), and they are grown and sent out indiscriminately. With none of the home kinds to compare with I should not like to hazard an opinion as to which of the various kinds the single form most resembles."

HOLLYHOCK FUNGUS IN NEW YORK.

THE parasitic fungus that especially attacks and injures the Hollyhock plant is known to mycologists by the name *Puccinia malvacearum*. It was originally described in 1852 from specimens obtained in Chili. It attacks not only Hollyhocks and other species of *Malva*, but also plants of various other genera of the Mallow family, such as *Althæa*, *Modiola*, and *Malope*. It is possibly native in Australia as well as in South America, as it was found there in 1865. It was unknown in Europe till 1869, when it appeared in Spain. Four years later it was observed in France and in England, and in two or three years more it had spread to nearly all parts of Europe. In some places its attacks were so severe and its ravages so great, that the cultivation of Hollyhocks was abandoned. Fortunately, the fungus was not an inhabitant of this country. But in 1886 its advent in Massachusetts was recorded. It had been introduced with some seeds of *Malope* brought from Europe. Whether measures were taken to prevent its spread I know not, but I have seen nothing more concerning its appearance in this country.

But it has now appeared at Geneva, in this State, as is shown by specimens received from that place a few days ago. The fungus attacks the stem and leaves of the plant, and sometimes also parts of the flower and the young fruit. It forms small round reddish brown pustules on the leaves and somewhat elongated ones on the stems. These pustules may be few or many, according to the severity of the attack. They usually occur on the lower surface of the leaf, but sometimes a few are seen on the upper surface also. A slight suffusion of grey sometimes overspreads them. A small yellowish spot and often a little pit or depression mark the upper surface of the leaf directly over the place of each pustule beneath. Sometimes with age these pustules fall out, leaving a perforation or hole in the leaf. Each pustule is composed of a dense mass of oblong spores which stand upright, closely packed side by side, each one being supported by a slender pedicel. These spores have power to propagate the disease, spreading it from plant to plant. They may continue to develop through the season, and in plants kept within doors they may be developed during the winter.

It is obvious that to stop the spread of the fungus we must either destroy the spores or prevent their germination. It would be well for those who cultivate Hollyhocks to examine their plants frequently, and if the fungus should appear on them

to take immediate measures to destroy it. If the attack is slight it may be sufficient to burn the few affected leaves, but if severe it would be better to burn every diseased plant, that the spores may be destroyed. Then as an experiment, it would be well to spray all unaffected plants with the Bordeaux mixture, which has been found effectual in preventing the germination of other parasitic fungus spores. If taken in hand at once it may be possible to stamp out the disease, but this will scarcely be possible after it has become established in many places.—*Country Gentleman*.

NOTES ON HARDY PLANTS.

Species of Pinks from seed.—I earnestly wish I could find a remedy for the grub, which breeds in seedlings of most of the Caryophyllaceæ, and especially in the alpine species of Pinks when very young. The pest shows itself with me even before the rough leaf fairly appears, and unless the seedlings are looked after at the earliest signs of the grub, the destruction is very rapid. The first symptom is frequently to be observed in the seed-leaf being irregularly lined with grey, which is actually a burrowing of the grub. Numbers of transplanted seedlings are sadly attacked, and the grubs have grown from one-eighth to two-eighths of an inch in length. Hitherto, I have practised nothing but hand-picking, for it is quite clear that one grub finds its way from one plant to another. I notice that the earlier transplanted batches are least attacked, and consequently I have an impression that seedlings when transplanted as soon as the first pair of rough leaves can be seen are the better for it. I may, however, be wrong in this, and should be most happy to discover a remedy.

Pontic Milk Vetch (*Astragalus ponticus*).—This is a gorgeous plant. In all my garden rambles I have never met with it, and I cannot understand why a plant so long known should be so little employed. Evidently it is perfectly hardy, having stood out with me two winters. My specimen is 3 feet high, the whole plant having a grey-green hue, clothed especially on the stems, which are as thick as a man's finger, with a dense coat of silky hairs. The leaves are 6 inches to 16 inches long, graduating from bottom to top; the leaflets are in pairs, opposite, short and evenly arranged. At the axil of each leaf there nestles a cluster of soft yellow flowers in the shape of a bird's nest, charmingly toned by the copious furnishing of long silky hairs. These dense spikes of blossom are as large as a man's fist. My specimen has three stems, and they spring from a woody crown. Last year the same plant had even larger foliage, but it did not flower. I grew it on a dry sunny bank. Still there is a good depth of soil, quite 3 feet; it had no protection whatever during winter. I have grown plants before under the same name, but I do not think they were correct, and I purpose saving all the seed I can secure from the present specimen, as the plant seems difficult to propagate in any other way.

Campanula Zoysi.—Two little tufts of this are now in lovely form. They are of fair size and weighed down with their singularly shaped flowers. They seem to revel in the present brilliant weather on a sloping bank fully exposed. I know this plant is kept with difficulty through our English winters, and I ought to say that my present plants were kept in pots in cold frames somewhat dry until March, when they were brought out. The plant is easily propagated by dividing the roots, but I have always found it better when dividing plants to prevent their flowering, and make the divisions in early summer.

Oriental Poppy (*Papaver bracteatum*) from seed.—This kind is evidently as variable as other Poppies, and this accounts for the difficulty one used to experience a few years ago in securing the true type. I have raised three batches of seeds, and among all that have yet flowered I have not found a typical form. There are, however, many that are very beautiful, and though a written description might not convey an idea of their being very distinct, they prove to be so when seen growing. During last winter I bought Poppy plants that had

wonderful descriptions, and all but one having flowered, I feel free to give my opinion, and it is that they are not worth garden space. They are all evidently crosses of the bracteatum and orientale types, but in the best cases not superior, and in others very inferior, to the supposed parents. I think it would be well for the raiser to try again, as I feel sure from what I see in my own batches that better results are to be had.

Rosette Mullein (*Ramondia pyrenaica*).—I feel convinced that we have not yet learnt how best to grow this plant. The general method seems to be to place it facing to the north, to give it as little sunshine as possible, and plenty of moisture. But plants so treated that I have met with both at home and abroad cannot compare to the magnificent clumps grown fully exposed on the rockeries in the gardens belonging to Canon Swayne. There the plants were flourishing in positions differing in no way from those of ordinary alpine plants. The rockeries were not much raised, but the plants were placed on or near the top, as well as at the bottom. There might, of course, be something different in the conditions of these gardens to affect this plant, and the principal ones which occurred to my mind were that the subsoil is a deep chalk, and that all water artificially applied must essentially be impregnated with lime. Then the garden is very flat, and only a few feet above the level of the river flowing at the foot of it. There can be no doubt we have something yet to learn about the culture of this plant, because, when flourishing as I saw it, the plants become immense clumps, and the foliage twice the size of anything I ever saw before. For my own part, I had become satisfied with plants set between stones horizontally and facing the north, where they are growing nicely and keep verdant all the winter, but Canon Swayne's *Ramondias*, which I saw in early spring, simply astonished me.

Polygonum sphærostachyum.—This is, doubtless, a lover of sunshine, for only in brilliant weather do flowers come forward. With plenty of moisture and sunshine, two-year-old plants will blossom, but the strongest plants fail when these conditions are absent.

Scarlet Alum Root (*Heuchera sanguinea*).—Three good properties belong to this plant: rich colour, long duration of blooming, and freedom of the plant from slug attacks. Whoever saw any portion of this plant eaten by slugs, even during the slug plague of 1889? One specimen here has been in fine bloom for seven weeks. The flowers are rich and effective, both in the border and for cutting.

Cheiranthus versicolor.—Where this is well grown, and especially where a few chalk chips are employed, it proves a most attractive flower. There is a charming medley of colours that defies description. Like other Wallflowers, it is liable to injury from late frosts, but it is rarely killed. It is always better to start cuttings afresh every year, if for no other reason than to secure compact plants.

White Crowfoot (*Geranium pratense album*).—I do not mean the double variety, a form I never saw. The reason why I make a note of this common plant is, that several specimens, forming a bold patch, have been allowed to flower in their own wild way during the past few weeks, and everybody who has seen them has been struck with the beauty of the group, and no less beautiful were the leafy stems, nearly 3 feet long when cut. The flowers, which are of the purest whiteness, are both large and abundant compared with those of the wild purple type. I think that, at any rate, it is a plant well worth cultivating either in the wild garden or for cutting. J. WOOD.

Woodville, Kirkstall.

Gaillardias.—These are really most useful plants for pot or border culture, but in the latter position they are the most effective and produce the greatest number of flowers. Amongst a few of the very finest I have seen are maxima, a very large flower of an intense deep crimson with rich yellow border; William Kelway, bright crimson

with golden border; and Buffalo Bill, a very large quilled flower of a rich bright yellow hue, with a deep crimson-maroon centre. These and other kinds of the same genus are now flowering in Mr. Laing's nursery.—W. H. G.

FLOWER GARDEN NOTES.

I HAVE for several seasons practised the mixture of small Conifers and summer bedding plants recommended at p. 36, although in my case the Conifers are larger than those noticed by "W. W." They are, in fact, plants that have become too large for the winter decoration of pans, vases, boxes, &c., and after serving their turn in large flower-beds for about three seasons they make room for another batch, and are themselves transferred to the shrubberies or any vacant spots in the pleasure-ground for which they may be suitable. One or two such beds in which they find a place this summer are severally filled with a centre plant of Lawson's Cypress, 5 feet in height, four each of *Thujaopsis dolobrata* and *Cupressus erecta viridis* about the same height and filled in with Glare of the Garden Dahlia and the Sweet Tobacco, a double row of Warrior Geranium as an edging completing the bed. I am not partial to this edging, but if the Dahlias are brought sufficiently close to the edge to cover the ground the abrupt rise from the Grass is sometimes objected to. Another bed has a centre plant of *Thujaopsis*, eight of *Retinospora plumosa*, eight of the small white Marguerite, and is filled in with Amaranth Geranium (pink), whilst yet another has nine plants of *Cupressus erecta viridis*, and is covered with Henry Jacoby Geranium, dotted liberally with Hyacinthus candicans, which should not be disturbed after it has become established, as old plants that remain in the ground flower freely, and the individual spikes are fine. A large bed that will, I think, be a prominent feature presently has a large clump of Pampas Grass as a centre, surrounded by alternate clumps of Rose of Castile Fuchsia and standard Heliotrope, with a broad edging of Jefferson's white Viola. The Pampas would doubtless look better on Grass, but the bed happens to be in a position where a bit of colour is very acceptable. Another large bed has nine plants of *Acacia lophantha*, and is filled with Mangles' Geranium and a purple Verbena. The latter is an established seedling, and I find it more useful than Purple King, for although this old variety is better in colour, it is of indifferent growth and very subject to mildew. A rather difficult border to deal with is one standing out on turf. It is some 40 yards long by 4 yards wide, and in this case it is not easy to avoid stiffness and formality. I have planted it this year at intervals with *Acacia lophantha*, Eucalyptus, and Sweet Tobacco, filling in with blocks of crimson Beet, scarlet and purple Verbenas, Heliotrope, Ageratum, Lady Plymouth and Flower of Spring Geranium. Whilst on the subject of the flower garden, I may say, in answer to the editorial query as to *Lilium candidum*, that it has been better with us this summer than for several seasons. There was a touch of disease in the foliage, but it did not affect the flower-buds, and we have had some very good spikes. All the inmates of the herbaceous border have done well this summer, Carnations being particularly fine. The old crimson Clove seems a special favourite, and is at present more in demand for button-holes than any other flower. Are there two varieties of this? I have often been asked the question, but have been unable to answer it. I think the comparatively new early scarlet flowering Carnation Grenadin is not so well known as it deserves to be. It is wonderfully free and very useful for cutting, whilst in the herbaceous border it looks well in company with some of the Violas or the dwarf Veronicas. What a lovely plant is *Spiræa filipendula*. I have noticed a special characteristic of it this season, viz., the extraordinary freedom with which it flowers from very small autumn divided plants. I had occasion to move a clump rather late in 1888, and being anxious to make as much of it as possible split it into a quantity of tiny pieces. We have had quite a sheet of bloom from these and some really fine spikes. Alstro-

merias have been good this year; they are a class of plants not widely known, but are useful for dark vases and make charming nosegays with the addition of a little feathery foliage; the dark salmon shade seems to be a favourite colour this year. I have never found these plants suffer from removal, the only detriment being that the individual spikes are not so fine the succeeding year. The removal, however, when necessary should be carefully executed, and the crowns should have a mulching of half rotten manure as soon as they are placed in their new quarters.

E. BURRELL.

Claremont.

Montbretia crocosmiæflora.—This is a much superior plant to *M. Pottsi*. It is evidently hardier, as its vigorous growth testifies. In Mr. Marshall's garden, Belmont, Taunton, it is in the most luxuriant condition, sending up spikes of flowers 3 feet high. As the blooms are more numerous and larger than in the old variety, it is a telling plant in the mixed border. Perhaps I ought to say that in the garden in question the soil is fairly rich and well drained. *M. Pottsi* has had to give place entirely to the newer sort.—J. C. C.

Oenothera Fraseri.—Too much can hardly be said in favour of this beautiful plant. It has been flowering freely for several weeks and promises to continue yet for some time. We have two large groups which are literally covered with the bright yellow flowers. This profusion of bloom I attribute to the fact that the plants were freely divided and planted in fresh ground, and I am strengthened in this belief by the fact that some of the old tufts that were left undisturbed, though flowering, are blooming far less freely.—H.

Scabiosa caucasica.—I agree with all that "D." says in THE GARDEN, July 13 (p. 21), about the beauty and hardness of this plant, but I think his conclusions as to its free-flowering qualities are hastily drawn. "D." says, "in stiff clayey soils it flowers very sparingly." This is the opposite of my experience, for I saw a group of plants last year of this *Scabiosa* which flowered from June to November. The plants were growing in an exceptionally heavy soil, which was cold throughout the season by reason of the excessive wet. I believe *Scabiosa caucasica* to be a hardy plant of the highest merit and of the greatest use in the flower garden.—H.

Dressing Carnations.—The original mere placing of the petals a little into shape and flattening out the curled ones, not so objectionable on the whole, has developed into an art, and, given flowers of fair substance, the most expert dresser wins. But those who have followed up the dresser will have noticed that the *rationale* of using collars to the flowers is more readily explained. Were there no collars employed, both to grip the loosened petals and sustain them after they have been so severely loosened, the flowers would literally fall all abroad. In the finest show flowers it will be found on examination that from one-third to one-half of the small or crowded petals have been extracted, and when the calyx of the flower is pressed up it is found to be as limp as an empty bag. Literally the dressed flower is not of Nature's production; it is rather what the expert has made out of it. Of course, a flower must have been well grown to fit it for the dresser, as he cannot make a large flower out of a small one; but still, with all the larger petals pulled out as widely as they can be, the calyx being split for that purpose, a small flower may be nearly doubled in circumference, although it has its body literally taken out of it. I do not so much object to the dressing if all who exhibit practise it, and, therefore, none who show are deceived. It is the public, however, who are deceived, as they regard the flowers shown as being the ordinary production of plants which they and their gardeners having the sorts may easily produce in the same way. I should like to see some classes for undressed flowers, and it would not be difficult to detect the hand of the dresser if employed. The public would then see the flowers as Nature produces them, and compare with flowers the product of the expert. I think also classes for outdoor flowers should be added, as very nearly

all, if not all the show flowers are grown in pots under glass.—A. D.

THE WHITE LILY.

(*LILIUM CANDIDUM*.)

Now that the mysterious disease which sometimes attacks the beautiful *Madonna Lily* is attracting a considerable amount of attention, a word or two concerning the best time of the year to transplant the bulbs may be of some service, for I am aware that great numbers are every year shifted so late as to quite destroy any possibility of their flowering, and though immense numbers are every year sent to this country, I am assured by one of our largest importers that very few are disposed of during the first month or two, by the expiration of which time every one should be permanently planted, instead of which the demand for them will by then only have commenced. My experience of the imported bulbs is that they will flower beautifully the first season, provided always that they are planted at the proper time; but when they have spent some weeks or months on the shelves of a bulb warehouse, of course they are greatly exhausted and cannot be expected to flower in a satisfactory manner. In transplanting this *Lily*, the operation should be carried out directly the stems decay, which takes place soon after flowering, but where thoroughly established the less shifting about they get the better.—H. P.

It is very pleasing to find from the notes which appeared in last week's GARDEN that this beautiful *Lily* is still flourishing in some parts of the country. In this neighbourhood (West Suffolk) all that have come under my notice are badly attacked by the fungus, both in cottage gardens and in places where there are bulbs by the hundred. Two years ago I transplanted several into fresh quarters, and my experience with these last year agreed with that of Mr. Camm this year, for those removed flowered well and had no disease, although the established clumps were as badly affected as ever, and I fondly hoped that transplanting into fresh soil would ultimately bring about a cure; this year, however, the disease has affected all more or less, and very few spikes have come to anything like perfection, while the leaves all succumbed long ago. I took the precaution to transplant a goodly number last year, and found the bulbs perfect and without blemish. These grew remarkably well until May, and although some were not affected for weeks after the disease first appeared all now are alike. In spite of the advice and assistance given to gardeners by scientific men week after week, fungoid diseases seem to be terribly on the increase in gardens. Roses, to say nothing of mildew, are in many cases poisoned by the Orange fungus, some varieties being more affected by it than others. Hollyhocks suffer from a very similar thing, so that a good spike is a rarity, though plants may have been grown outdoors from start to finish, and the finish comes too soon; and last, but not least, our *Madonna Lilies* are in great danger of being lost entirely, for unless the disease can be stopped by some other means than burning and the plants make healthy growth again, the bulbs must get smaller year after year, and ultimately die altogether.—J. C. TALLACK.

Old-fashioned flowers.—Some of the oldest of our garden flowers are still as popular as ever, and I notice the following as being conspicuous in this locality at the present time. *Fuchsia Riccartoni* is very much used for planting in cemeteries, public parks, &c., where it attains enormous proportions. I measured one to-day close by where I am writing that was 15 yards in circumference and about 10 feet high. It was a mass of bloom, and although the flowers are individually small, yet they make a grand show when seen in such a mass. The common white *Jessamine* grows with surprising luxuriance. We have a plant that has covered a wall and lattice-work 40 feet in length and 9 feet in height, and it is now a complete mass of white flowers from end to end, and the perfume is almost overpowering. The plant is simply spurred in fairly close in the winter and in summer the long straggling shoots are out out, except at

the end where they are required to extend. Everlasting Peas make a fine display, and if they are supported in any way they are little or no trouble. Any old fences or stumps of trees may be made beautiful objects by planting these old favourites. The old crimson *Clove* is still as highly prized as ever, in spite of all new varieties of *Carnations*. Our light soil and perfect natural drainage seem to ensure long life to this class of plants, as in gardens where they do not get disturbed old specimens that tell of several years' exposure to rough gales may frequently be found.—J. G., Gosport.

The Gladioli at the present time (July 22) look as if they would be in flower fully a fortnight earlier than they have been for several years past. Of course a good deal depends on the weather. As I write the temperature is lower than it has been for some weeks past, and should this state of things continue it will make all the difference. As it is the plants everywhere are improving under the influence of the frequent showers, for they have had none too much water in many cases; but where they have had all the root moisture they require, the plants are in splendid condition. This, I think, plainly shows that the *Gladiolus* likes warmth and sunshine when the roots are well sustained. On the other hand, if they are not well nourished they do not dislike a partially shady place in such weather as we have had this season. Seedling plants raised from seed sown early in April on a warm border in the open are making fine growth. Having a bit of choice seed, I divided it, sowing some in a box of soil and the other in the open. The box was kept under glass until the end of May, but the plants in it are not nearly so strong as those in the bed in the open air. The spawn or bulbets that were planted at the same time are also making more progress than usual, so that altogether there is every indication at present that the display of *Gladioli* will be good in the autumn. I have never seen fewer deaths amongst the plants. Plants that have not yet had the surface mulched would still be benefited if a layer of half rotten manure was laid on at once.—J. C. C.

SHORT NOTES.—FLOWER.

The Burning Bush (*Dicamnus Fraxinella*).—When this was in bloom some of the readers of THE GARDEN gave their experience as regards the inflammable nature of the spikes of bloom. We had quite a flare up with ours on two or three nights. If any readers of THE GARDEN who have these plants seedling now will apply a match to the seed-pods, they will find that they are quite as inflammable as were the flower-spikes.—R. LLOYD, *The Gardens, Brookwood Asylum*.

The Evening Primrose (*Oenothera biennis*) naturalised.—Several colonies of Evening Primroses in the wilder parts of the garden are conspicuous and beautiful by day, but especially so in the evening, when the flowers are fully expanded. The plants grow freely in the rough, but rather thin Grass. The flower-spikes are tall, and a background of shrubs is an admirable foil to the soft yellow blossoms which open successively, but so gradually that several weeks elapse before all the flowers upon one spike have faded. When once established, these plants seed so freely that they give no further trouble, and as each year rolls round they charm us with their simple beauty.—A. H.

Lathyrus latifolius carneus.—Both *Lathyrus latifolius* and its pure white form are known and appreciated as two plants of the highest value and beauty. The one which bears the above name gives us a trio, for in vigour and free-blooming qualities it is equal to the two first-named kinds, whilst its colour is delicate and charming. The name *carneus* would imply a flesh-tinted Everlasting Pea, but really the colour is pink deepening into lilac, which wholly tints the two upper petals, whilst in the other portions of the flower it is a delicate suffusion overlying a white ground. Can anyone tell me the origin of this Pea?—A.

Phygelius capensis.—This is a handsome and somewhat shrubby perennial, much resembling a *Pentstemon*. It is not so much grown as it should be, but this may be attributed to the fact

that it likes a warm sandy loam and a hot position. It will, when properly placed, continue blooming for several months. Nowhere is it more at home than at the foot of a sunny wall. We have several plants in such a position, and they have developed into bushes each more than a yard high. The flowers are borne in a branched raceme, and one bush has about forty racemes upon it, these varying in length from 9 inches to 15 inches. In growth it resembles the common Fig-wort (*Scrophularia*), and the leaves when bruised have the same unpleasant odour, but the flowers are bright and showy. They are tubular and pendent, of a vermillion-red externally with an orange-yellow throat. Anyone wanting a bold, yet ornamental plant to fill a hot corner will find *Phygelis capensis* well worthy of their attention.—A. H.

TREES AND SHRUBS.

THE OLIVES.

THE different forms of the Oleaster or wild Olive (*Elæagnus hortensis*) are all remarkable for the silvery character of their foliage, and on that account they stand out most conspicuously where associated with other trees, and more especially when the slender branches are stirred by the wind, as then the intense silvery underside of the leaves is at times brought into view. The wild Olive is a native of a considerable district in Southern Europe, and is quite hardy in this country. It succeeds where the soil is of a sandy or gravelly nature better than many other trees or shrubs; indeed the same remark will apply to most members of the genus, evergreen as well as deciduous. At the same time it will flourish equally well in moister spots, and such being the case it is very appropriate for planting near the water, that is to say, not in such spots as the Alders and Willows delight in, but still near enough for the beautiful silvery foliage to impart an additional charm to waterside scenery. There are several varieties of the common Oleaster, but as far as their ornamental qualities are concerned there is but little to choose between them. Beside the European forms of *Elæagnus* there are a great many species and varieties natives of Asia, the majority of them being found in Japan. The nomenclature of these Japanese species is very confused, and this no doubt tends to prevent their being more grown, for they are very valuable shrubs, of quick growth, perfectly hardy, and as seen on the light gravelly soil at Kew would seem to flourish under such conditions better than the majority of evergreen shrubs. One of the most marked of the Japanese species is *E. longipes*, a quick-growing, sturdy bush, the foliage of which, however, is usually sub-evergreen in character. This produces its blossoms in such profusion about the early part of May as to deserve at least a passing notice as a flowering shrub. The individual blooms are something like those of a little Fuchsia, cream-coloured, and covered as well as the entire plant with curious ferruginous scales. They also emit a very pleasing fragrance. The blossoms are succeeded by bright red, oblong-shaped berries, which are dotted over with the before-mentioned scales. They are of a pleasing acid flavour, and might be turned to some use. These berries usually ripen about July, and are often devoured by birds directly they are ripe. The really evergreen species are very handsome shrubs, and well adapted for an isolated position on a lawn, as the long, flexible shoots, which are produced in so curious a manner, have a drooping tendency, and thus form large spreading bushes, furnished to the turf, and totally devoid of any stiffness or formality. They are quite hardy, and afford a

pleasing change from the limited number of evergreen shrubs that is usually met with in gardens. Among the most prominent of these Japanese species may be mentioned *E. pungens*, a spiny bush with undulate leaves, green above and silvery beneath. Of this there is a variety with beautifully variegated foliage, which is often seen protected by a wall, or in some such a position, through the notion that it is tender; whereas it is really perfectly hardy. *E. reflexa* has very dark green foliage, and the undersides of the leaves are of a brownish hue. The young shoots, too, are so densely covered with rusty coloured scales that they are quite brown, and present certainly a very distinct appearance. *E. glabra* forms a large dense bush, whose oblong-shaped leaves are of a rich green on the upper surface and somewhat rusty underneath. The form of this, in which the leaves are deeply margined with pale yellow, is very ornamental. One of the most strongly marked of these evergreen species is *E. macrophylla*, whose leaves are the largest of any and of a bright green above, while the undersides shine like silver, owing to their being thickly covered with silvery scales, the young shoots being clothed in the same manner. These Japanese forms of *Elæagnus* are readily propagated from cuttings, which is another point in their favour. Though with care they may be struck at almost any season of the year, the best results may reasonably be expected by putting them in at the present time. The cuttings should be about 6 inches long, formed of the current season's shoots, and should be dibbled into some sandy soil, where if protected by an ordinary garden frame most of them will root before winter. T.

Golden-leaved shrubs.—I do not know two more effective shrubs during the summer months than the Golden Elder and Golden Spiræa. At present some large plants which were planted among more sombre Coniferae, such as Austrian Pines, Black Spruce, and Scotch Firs, have a bright and picturesque appearance. They can be seen at a great distance, and though they grow to large trees in the course of a few years, they can be kept down to a few feet high. They stand severe pruning during winter, and can be used in any position.—C. H.

Small-leaved Mock Orange (*Philadelphus microphyllus*).—This miniature Mock Orange is not only an interesting, but also a remarkably pretty little shrub. It forms a much branched bush whose slender twigs are clothed with tiny leaves (about the size of those of the Box), and it flowers just as profusely as the larger kinds. Like them, too, the blooms are scented, but instead of the unpleasantly strong odour of the others, the perfume of this reminds one to a certain extent of that of a ripe Quince. It is well worthy of a place among the most select of small-growing shrubs, being perfectly hardy and by no means of slow growth. It has been employed by the hybridist, for last year M. Lemoine, of Nancy, announced as a new variety *P. Lemoinei*, which was described as a cross between *P. coronarius* and *P. microphyllus*, but after flowering I fail to see that it possesses any great merit.—T.

Spiræa grandiflora.—There is a small section of shrubby Spiræas remarkable for their pinnate foliage, and as flowering shrubs are valuable from the fact that none of them bloom till midsummer, while the latest (*S. Lindleyana*) will sometimes flower till the early autumn. The first of this section to bloom and by far the most uncommon is *S. grandiflora*, which is besides known under the names of *alpina* and *Pallasi*. This species is often confounded with *S. sorbifolia*, but it differs from it in several well-marked particulars. In the first place the foliage is of a much lighter tint, the individual blooms double the size and of a purer white, while the time of blooming is a fortnight or so earlier than that of *S. sorbifolia*. Both reach

the same height viz; 3 feet or 4 feet, and both are well worth a place among our ornamental shrubs. Lindley's Spiræa is altogether a larger grower, forming as it does in good soil a large specimen 10 feet to 12 feet in height, and when crowned with its large terminal branching panicles of blossoms it is really a magnificent object. Like the other members of the genus, these Spiræas delight in a cool moist soil, and they well repay liberal treatment. In pruning, the principal consideration is the removal of all weak and exhausted shoots.—T.

HONEYSUCKLES.

(LONICERA.)

LONICERA IBERICA, or the species which is known by that name in gardens, is the latest of the bush Honeysuckles in the collection to flower. It is a stout shrub, with upright branches covered with light grey bark, which separates readily into thin scales. The leaves are small, barely more than an inch long, dark, dull green, with a few scattered hairs on the upper and pale on the lower surface, which is densely covered, as are the shoots of the year, with a short pubescence. The flowers are bright yellow, an inch long, the corolla covered on the exterior with scattered hairs. The fruit is scarlet and conspicuous. This is a perfectly hardy plant, which, owing to the lateness of its time of blooming principally, has considerable value for the decoration of the garden. It is a native of the Trans-Caucasian country.

A number of the so-called Chinese Honeysuckles are now in flower. They all belong to one species, however, and are all—that is, all the plants found in our gardens—Japanese, and not Chinese. These plants have long been cultivated and are familiar in some form or other to all persons who have ever had anything to do with a garden. The true name of this plant is *Lonicera japonica*, and it was discovered a century ago by Thunberg at the time of his journey in Japan. The most familiar form of this plant, or rather the form which was until the last few years most frequently met with in gardens, is a slender climbing plant, with pubescent, reddish stems, dark green leaves, with rather conspicuous red veins, and long tubular, slender corollas, pale red on the outside, yellow on the interior, and always fading yellow. This is the *Lonicera flexicaulis* of many old gardens. There is an excellent coloured figure of this form in the "Dendrologia Britannica," t. 117, under the name of *Lonicera chinensis*. Another form of this plant differs from the first in the colour of the flowers only, which are white, fading to yellow, and in the absence of the red tinge on the stems and the veins of the leaves. This is sometimes known as *Lonicera brachypoda*. The showy yellow-leaved Honeysuckle which has appeared so generally of late years in gardens, and which is known as *Lonicera brachypoda* var. *reticulata* and as *L. brachypoda* var. *foliis aureo-reticulatis*, is merely a variety of this same species. Another form which has been generally distributed of late in American gardens as *Lonicera Halli*, so named because it was first sent to this country from Japan by Dr. Hall, is perhaps the most beautiful of them all. It flowers about ten days later than the other varieties; the leaves are broader, rather paler, and more densely covered with pubescence. It is a strong-growing plant, and will cover a large space in a single year with its flexible, twining stems. These various plants look quite different as they are seen growing side by side; they all have characters which unite them. The flowers are in pairs at the end of a long (or sometimes quite short) common peduncle, upon which just below the flowers are two large leafy bracts, which are almost identical in shape with the true leaves, although they are much smaller, and generally not more than half an inch long. The corollas have slender hairs of the same character upon their exterior surface. The fruit is black and the same in all; the flowers all fade yellow, and all possess the same delicious fragrance, which is most powerful in the evening; and upon all these forms, although rather more commonly upon the golden-leaved variety, a few leaves grow near the base of the stem,

with the margins deeply cut and lobed like those of a White Oak. *Lonicera japonica* has escaped from gardens to the woods in some parts of the Southern States, and has become well established, and practically naturalised. It is very largely planted in the Middle States, where it is found very useful for covering buildings or rocky banks, or any rough waste spots over which it is desirable to spread a thick mantle of brilliant foliage and fragrant flowers. Here in New England this plant is not quite hardy, and is often killed back during severe winters, but as it flowers on the branches of the year, this killing back only serves to develop the growth of stronger shoots and to retard a little the flowering time. Here the leaves fall in January generally, after having remained perfectly fresh and green during the autumn and early winter; further south the plant is evergreen, the old leaves remaining upon the branches until the appearance of the new crop in the spring. The branches keep on growing until stopped by frost, and as flowers are produced upon these new growths, the plants are generally in bloom all through the summer. *Lonicera japonica* is a widely distributed plant in Japan, Formosa, and in China, from Peking to Shanghai, and far into the interior. Its tenderness in this climate seems to point to a somewhat southern origin for the plants now in cultivation, and it would be an interesting and probably a valuable experiment to test plants of this same species raised from seed gathered at Peking or at some other northern station, where the climate resembles that of our extreme Northern States. *Lonicera etrusca* is in flower. It is a very pretty, slender, graceful plant. The flowers are delicately fragrant, with long, slender corollas, purple without and yellow within. It is a native of Southern Europe, and although a very pretty plant, is less desirable perhaps for general cultivation than the more robust and showier *L. Periclymenum*, the Woodbine of English gardens. — *Garden and Forest*.

The Elm-leaved Spiræa.—Amongst hard-wooded deciduous shrubs, *Spiræa ulmifolia* just now stands unrivalled. It is not new, neither is it common, and yet a fine bush growing in front of dark Evergreens on the lawn or in the shrubby border once seen is never forgotten. It is by no means fastidious as to soil; but that which suits it well is a deep friable loam free from stagnant water, and at the same time sufficiently moist to sustain it when flowering through the latter part of July and a good part of the hot month of August. A native of Siberia, whence it was introduced in 1790, this *Spiræa* grows and flowers in almost any situation and facing the coldest aspect; but nevertheless produces the finest flowers and in the greatest profusion when conditions are most favourable to the ripening of the young wood. The numerous drooping racemes of flowers, creamy-white in the bud and pure white when open, are a long time in reaching the perfect state, and during this progressive period are quite as handsome as when fully expanded. Although the flowers do not last very long after they are cut, they are well adapted for large vases and bowls, and are as graceful as they are uncommon when used for soft, yet bold decoration. If cut over when the flowers have faded, the buds upon each shoot have a better chance of ripening, the bushes are kept in shape, and the weakest bud produces a spray the following year. The shrub may be increased by slips inserted in sandy soil under hand-glasses about the end of August; also by layers and suckers. — *W. C.*

Carpenteria californica.—Where it is desired to increase this pretty and uncommon shrub, the present is a good time to put in cuttings, which are in no way difficult to strike if taken when in a suitable condition and given a moderate amount of care and attention. The strong leading shoots must never be selected for cuttings, but preference should be given to the weaker side branches, which root far more readily than the stout ones. The cutting should be from 4 inches to 6 inches long, and be cut off clean at its base. Remove also the bottom pair of leaves. Whether put in pots, pans, or boxes, the same principle should be followed, viz.,

supply ample drainage, then fill up with sandy soil which has been sifted in order to remove all the rougher particles. For this purpose a sieve with a quarter-inch mesh is very suitable, as it is sufficiently coarse to allow many of the smaller fragments to pass through, which tend to keep the soil open without interfering with the insertion of the cutting, as where the soil has not been sifted in any way it is often a difficult matter to close the compost around the base of the cutting. The cuttings should be inserted as quickly as possible (taking care that they do not flag), and after a thorough watering through a fine rose they must be placed in a frame (a very close one being selected for the purpose), and if in a partially shaded position so much the better. The light or lights must be kept quite close and shaded from the sun, when the cuttings will root in a month or six weeks. Being kept close and shaded, they will require little water. When rooted, a very good plan is to pot them off into small pots, and winter either in a frame or cool greenhouse. On the return of spring they may be planted out. A frame in a shady position may, during the summer months, be turned to account for striking cuttings of many subjects, such as *Euonymuses*, *Weigelas*, *Lilacs*, *Choisyaternata*, *Deutzias*, *Escallonias*, *Philadelphus*, and a host of other shrubs will strike readily in this way. Plants so obtained are greatly preferable to those that are grafted. — *T.*

A HYBRID CATALPA.

THE name *Catalpa* × *J. C. Teas* is suggested for a plant whose hybrid origin is probable. The history of the plant is briefly this: *J. C. Teas*, of Carthage, Missouri, while living in Indiana, in 1864, purchased a seedling *Catalpa* from Mahlon Moon, of Morrisville, Pennsylvania, who had raised it from seed procured from Japan by Hovey and Co., the Boston seedsmen. According to the statement of Mr. Teas, to whom I am indebted for the facts in the case, this tree, which proved to be *C. Kämpferi*, was planted in his nursery among or near plants of *C. bignonioides* and *C. speciosa*, the two North American species; and it produced in due time one pod of seeds which were quite unlike those of any *Catalpa* with which Mr. Teas was acquainted. The seeds were planted and gave rise to a tree almost intermediate in character between *C. Kämpferi* and one of the American species. The appearance of this seedling tree and its progeny suggests that the pollen from a flower of one of the American *Catalpas* had fertilised a flower of the Japanese tree. The American parent was probably *C. bignonioides*, although Mr. Teas is inclined to believe that it was *C. speciosa*. The latter flowers two or three weeks earlier than the Japanese species; whereas the former flowers contemporaneously with that species during the first week of July.

Whatever may have been its origin, the hybrid is an erect, vigorous, and rapid-growing tree, with the thin, scaly bark of the American species. The inflorescence, which is 18 inches to 20 inches long by 10 inches wide, is composed of 200 or 300 fragrant flowers about 1 inch long, the corolla slightly tinged with yellow in the throat, and handsomely marked with broad purple stripes. The fruit is from 12 inches to 15 inches in length and not more than a quarter of an inch thick in the middle. The wings of the seed are half an inch in length and one-eighth of an inch in width, and like the others of the genus are tufted with long white hairs.

The leaves of this tree are much larger than those of either of its parents, having when they first appear the velvety character and the purple colour peculiar to those of the Japanese plant, and the reddish spot at the insertion of the petiole with the leaf-blade which characterises that species. They more generally resemble those of the Japanese species in shape, colour,

and texture, while the pubescence which covers the lower surface is almost intermediate in character between that of the American and that of the Japanese species. The inflorescence is much larger than that of the American or of the Japanese plants, being fully twice as large as that of *C. bignonioides*, and more than three times the size of *C. Kämpferi*. The flowers are intermediate in size; in colour and in markings they most resemble those of the American species, although a tinge of yellow in the throat of the corolla points to their Japanese descent. The fruit of the hybrid is almost intermediate in size between that of the two parents, as are the seeds, which are perfectly fertile and often reproduce the original form in every particular. When, however, seedlings show a tendency to vary from the original form the variation is generally in the direction of the Japanese rather than of the American parent.

The hybrid is a more vigorous tree than either of the American or the Japanese species, and it grows rather more rapidly. It is too soon to speak of its value as a timber tree, as the largest specimens in the Western States, where this tree has been much more generally planted than at the east, are, according to Mr. Teas, only 40 feet to 50 feet high, with trunks which do not exceed yet a diameter of 18 inches. Of its value as an ornamental tree there can be no doubt. Its larger size and more rapid growth, its better habit and more showy inflorescence make it a far more valuable ornamental tree than the Japanese species; it is more hardy than either of the North American species, and although the flowers are smaller, the panicles and the number of individual flowers are much larger.

The best forms, from an ornamental point of view, are those in which the flower most nearly approaches that of the American species in size and colour; and as the seedlings show a decided tendency to revert, so far as the flower is concerned, to the Japanese parent, it will be necessary to perpetuate selected varieties by grafting. The great vigour of the seedlings of the hybrid will no doubt make these the best stocks for this purpose. Among a number of these seedlings sent to the Arnold Arboretum by Mr. Teas there is one in which the corolla is doubled.

If it is true that the plant is a hybrid, and there seems no good reason for doubting that it is, this tree illustrates in a remarkable manner the advantage in vigour and hardiness which the progeny resulting from the crossing of two species may obtain over either of its parents. The fact is doubly interesting, moreover, because hybrid trees, whose origin is known with as much certainty even as that of this *Catalpa*, are rare. Some fruit trees are doubtless derived from crosses of nearly allied species or distinct forms of a widely distributed species. Oaks, Walnuts and Willows, which are believed to be hybrids between related species, are not uncommon, and it has been suggested that some of the varieties of *Cinchona* which produce the most valuable bark may be hybrids. The origin of such plants, however, is always veiled in doubt, and I do not at this moment recall any other hybrid tree, with the exception of *Magnolia Soulangeana* and the other hybrids between *M. conspicua* and *M. obovata*, whose history is as little doubtful as is that of this *Catalpa*, which seems destined, whatever its economic value may be, to become a valuable ornament in the decoration of parks and gardens. — *Garden and Forest*.

Golden-leaved Acacia.—This is one of the most beautiful among golden-leaved trees. It is very pretty when standing by itself, and still more

conspicuous where associated with deeper-coloured trees. The light pinnate foliage of the common False Acacia (*Robinia Pseudacacia*) is always bright and cheerful throughout the summer months, but the golden-leaved form is even far more noticeable. One great merit is that the leaves of the golden variety do not scorch, however bright the weather, the only effect being to intensify the golden hue.—T.

PROPAGATING.

GLOXINIAS.—I have previously recommended that this beautiful class of plants should be obtained from seed, but any of exceptional merit may be selected and increased by propagating from leaves. For this purpose well matured leaves should be taken; they may be cut through the mid-rib as well as the principal lateral ribs at distances of about an inch apart. They may be laid flat on the surface of the propagating bed, which should previously be prepared by surfacing it over with some fresh cocoa-nut fibre refuse, with which a little sand may be mixed. After the leaves are placed on the surface a little dry sand may be put over each cut, the bed should be fairly moist, but no water used after the leaves are laid down. If the bed gets too dry a little water may be given, but this should be done without wetting the surface of the leaves. If kept close and in a moderate bottom heat, corms will soon begin to form at each cut. Gloxinia leaves, being very fleshy, are liable to rot off if not carefully treated. They will naturally decay after the corms are beginning to swell, but if premature decay appears, the affected part should be cut off and dry sand used to dry up the moisture. The young corms may be taken out of the propagating bed as soon as the leaves are well dried off or they may be left for some time. When taken out they should be put into pans of sand and just covered. The pans may be kept on a shelf in a warm house, and the sand should be kept moist enough to prevent the corms shrivelling. They may be kept in this way until they begin to start into growth, when they should be taken out and potted singly into small pots, treating them as recommended for seedlings. I may here again remark that Gloxinias are often grown in too much heat and over-shaded. When grown under cooler treatment and well exposed to the light they make better plants, and the flowers are of greater substance and last longer; the plants are also less liable to the attacks of thrips, &c.

BEGONIA REX.—These may also be propagated from leaves. They may be treated in a similar manner to that recommended for Gloxinias, or the leaves may be cut up into small pieces, and cut down to a point which may be inserted into the fibre. Begonias do not require so much warmth as Gloxinias, but are equally liable to damp if not carefully attended to. Instead of forming corms they make fibrous roots. When propagated from leaves they make very pretty plants. The varieties are now very numerous, and some have very brightly coloured leaves. If the plants are grown in an intermediate temperature and well exposed to the light the colour of the leaves will be much brighter. A.

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee was held at the Caledonian Hotel, Adelphi, W.C., on Friday, the 26th ult., Mr. George Deal presiding. After the minutes of the last meeting had been read, Mr. George Deal was unanimously re-elected the chairman of the executive committee for the ensuing year, this office being of annual appointment. There being a balance of £785 13s. 3d. at the bank, it was unanimously resolved that a further sum of £500 be invested in consols. It was resolved that 2500 copies of the annual report, balance sheet and list of subscribers be printed for circulation in the usual manner. Hearty votes of thanks were passed to the president, Sir Julian Goldsmid, Bart., M.P., for presiding at the annual dinner, to Mr. Hudson and others who lent assistance in de-

corating the dinner-table, and to all those who sent donations of fruit and flowers. Under the new addition to Rule xii., the committee unanimously resolved that forty special life votes (under section b), in accordance with the amended rule, be placed at the disposal of the sub-committee of stand-holders appointed to assist in carrying out the recent floral fête in Covent Garden in May, 1889, and that Mr. Assbee be requested to obtain the names of the persons selected to exercise the privilege conferred under the amended rule. A hearty vote of thanks to the chairman closed the proceedings.

A CHILDREN'S FLOWER SHOW.

I HAVE just tried the experiment of holding at Ealing a children's flower show pure and simple. For a few years past certain residents of Ealing have offered special prizes for bouquets of garden as well as wild flowers and Grasses made up by school children, and this exhibition took place in connection with the summer show of our local horticultural society, held in the second week of July. This arrangement, however, had its disadvantages; the other portions of the show quite overshadowed the display made by the children, and the very feature I desired should be prominent seemed to be to a great extent disregarded. Then there were some 200 or so exhibitors, and it was difficult to have them under proper control; and further, the children removed their bouquets at all hours so soon as they had received their prize money. Then, again, the registering of and the paying away of over one hundred prizes to the children on the show day proved too great a task taken in conjunction with other work.

It was these considerations which induced me to make an attempt to hold a special show for school-children, and it took place in our Victoria Hall on Wednesday, the 24th ult. There were three classes, one for a bouquet of wild flowers and Grasses and one for a bouquet of garden flowers, to be arranged by children attending the elementary schools receiving the Government grant in the parishes of Ealing, Acton, and Hanwell. Each bouquet had to be shown in a vessel containing water, and properly labelled with the name, age, and address of the exhibitor and the school he or she attends. In addition there was a class for a plate of flowers arranged by the exhibitors in the hall on the morning of the show. In the two first classes it was made a condition that the bouquets should be made up by the children without any assistance, but when this is done at home it is always open to conjecture whether it is the *bona fide* handiwork of the child. In order to test their capacity to arrange flowers the class for the plate was placed in the schedule. I may state that in the latter case a soup plate was provided for each exhibitor, the well of it full of silver sand made nice and moist; a side table was provided for the exhibitors to work at, and when their plates were completed an attendant carefully placed them on a centre table for the judges. There were ten of these plates—as many as I had expected to see, this being the first attempt—and nine of them were considered good enough to receive prizes.

In the class for a bouquet of wild flowers and Grasses there were 188 competitors, and many a long journey must have been made in search of the flowers. Alas! the inroads of the builder and road-maker, both of whom are so thoroughly utilitarian that they have no regard for natural beauty, are fast robbing us who dwell in the western suburbs of London of the haunts of wild flowers, and they are becoming scarcer year by year. From Alperton on to Harrow, and from Greenford to Hanwell, there are fields as yet untouched by the builder; but the wild flora is limited. Two boys who exhibited, harnessed their donkey to a cart and went on a circuit of twenty miles, getting on to Ruislip in quest of what they sought. I am glad to know both of them gained prizes. Of garden flowers we had just 50 bouquets; and, like the Grasses and wild flowers, they varied in size and build. Altogether, we awarded about 120 prizes. During the afternoon, the Rev. Professor Henslow,

M.A., gave us an extremely interesting and instructive lecture on "Wild Flowers, and what they teach." By some this was regarded as an innovation, but it answered remarkably well, and furnished an agreeable interlude. At six o'clock in the evening the prizes were distributed. Mr. G. Deal, who took a great interest in the children's show, presided, and presented the prizes. The whole of the children competing were seated on chairs below the platform of the hall. A sea of upturned eyes gazed anxiously as the names in the order of merit were called over, and the children came one by one on to the platform, received their awards, and passed down on the other side. The little ones among them were greeted with uproarious cheering. Some were four years old only. At nine o'clock the bouquets were all removed.

The most gratifying feature in our day's proceedings was the great amount of happiness we gave to the children. Whatever their lot in life, a brief period of supreme happiness appears to have been given to the prize-winners. How proud they all seemed to have won a prize. One source of regret was that the well-to-do people of Ealing, to whom I naturally looked for sympathy and support, stayed away. But the parents and friends of the children came up to our aid in goodly numbers. It is sometimes curious to notice how people will aid objects that have no relationship whatever to the district in which they reside, and which are of doubtful value; and yet cannot interest themselves in practical work lying near their own homes, and of which they can have personal knowledge. But it has always been so, and I venture to prophesy, will remain so, for human nature is a curious quantity, and its vagaries appear in great measure to be altogether beyond control. R. DEAN.

Ealing, W.

Death of George Sage.—We regret to announce the death of George Sage, a gardener well known to men of the old school, though unfamiliar to the younger generation. He acquired a good name for conspicuous ability in his profession, and was the first to introduce pot Vines in fruit for the adornment of the dinner-table. He was born at Hillingdon, in Middlesex, in 1824, and served at one time at Gunnersbury Park when Mr. Mills was in charge. From thence he went to Chatsworth, and in 1854 became foreman to Mr. George Eyles at the Crystal Palace. In 1858 he went to Ashridge Park, Great Berkhamstead, the seat of the Earl of Brownlow. Having served many years as head gardener at Ashridge Park, he was transferred to another residence of the same family, Belton House, Lincolnshire.

Death of the Rev. M. J. Berkeley.—Just as we are going to press we learn of the death at the age of eighty-six of this distinguished fungologist, whose "Introduction to Cryptogamic Botany" and "Outlines of British Fungology" are standard works of their kind. Since 1868 he has been Vicar of Sibbertoft, Northamptonshire. A readiness to impart that great knowledge he possessed of fungi to others, and a kindly disposition, made him many firm friends, who will sincerely deplore his loss.

BOOK RECEIVED.

"Le petit Jardin." Par D. Bois, Natural History Museum, Paris. J. B. Bailliere et fils, 19, Rue Haute-fueille, Paris.

Erratum.—In THE GARDEN, July 27 (p. 83), the English name "Plantain Lily" was by mistake applied to *Agapanthus umbellatus*. The Plantain Lily is *Funkia*.

Names of plants.—*J. Walters.*—Please send again, affixing the numbers to the specimens.—*J. T.*—1, *Veronica speciosa*; 2, *Sanchezia nobilis variegata*; 3 and 4, send again; 5, *Adiantum farleyense*; 6, send when in flower; 7, *Euonymus japonicus argenteo-marginatus*; 8, *Abutilon vexillarium*; 9 and 10, send again.—*Creus, Coe & Co.*—Black Bryony (*Tamus communis*).—*R. T.*—1, *Desfontainia spinosa*; 2, *Lychnis fulgens*; 3, *Polystichum sp.*; 5, *Monarda didyma*; 6, *Lysimachia punctata*.—*S.S.W.*—5, *Swainsonia galegifolia alba*; 7, *Veronica longifolia alba*; 10, *Polygala Dalmaissiana*.—*Chas. W. Linton, Stags.*—*Clematis Vitalba*.—*F. L. C., Arminster.*—*Xeranthemum inapertum*.

WOODS & FORESTS.

THE GROWTH OF COPPICING.

In many parts of the country, upon soils which will not grow the ordinary timber trees of sufficient size to make their cultivation profitable, coppicing may be substituted with advantage, and the annual income to be derived from this will, under proper management, be little less than that obtained from the periodical falls of timber upon superior soils. But in order to ensure the maximum of profit from such, the kinds of trees grown must be such as are suitable to the land, and also those for which there is a local demand. Thus in Kent, Sussex, Herefordshire, and Worcestershire, Hop poles meet with a ready sale; in the mining districts, pit-props; in hardware districts and in the potteries, material for making crates; and in the basket-making localities, Willows of various kinds. The subject of local demand is an important one; as compared with their market value, the materials obtained from ordinary coppices are too bulky to admit of long carriage either by road or rail.

Pure coppice of the best kinds, such as Ash, Spanish Chestnut, Red Willow, Red Birch, and Maple, is in the Hop-growing counties more remunerative than coppice with standards; but where the underwood is of an inferior kind, such as Oak, Beech, Hornbeam, Hazel, and the common kinds of Willow, a considerable admixture of standard trees may be reared with advantage. But under ordinary circumstances these should not occupy more than one-third of the wooded area, and their lower branches should, after every fall, be either pruned back close to the boles, or else considerably shortened to mitigate the effects of too much shade. Most of our common deciduous trees coppice freely—the Ash, Oak, Spanish Chestnut, Elm, Lime, Maple, Poplar, Willow, Hornbeam, Birch, Mountain Ash, Sycamore, Hazel, Alder, and, for a shorter period, the Beech. Some of these, such as the Lime, Willow, Aspen, Birch, and the White Alder, grow very freely from suckers. For pure coppicing the Spanish Chestnut is best adapted to sandy or gravelly land, Ash for a moist loamy soil, and Larch upon rocky slopes; upon a moist loamy or clay soil Chestnut stools very soon die out, and upon a deep good soil Larch grows too rapidly to be very serviceable.

By means of planting and subsequent layering, growths of coppicing may be carried over rocky surfaces where timber trees even of the smallest size are reared with difficulty, for as long as the connection with the parent stool is maintained, the layer will continue to thrive, even though its roots obtain little nourishment beyond what they find in the thinnest surface soil or among the crevices of the rocks.

The length of a rotation will depend to a great extent upon the kind of wood grown and the purposes to which the produce is to be applied, as well as upon the climate, site, and quality of the soil. The shorter the rotation, the sooner the stool is exhausted. When Osiers receive an annual cutting, the stools seldom last more than thirteen or fourteen years, though those worked upon a two or three years' rotation endure for nearly double that period. Standard trees cut down after the age of from forty to fifty years seldom leave a reproductive stool, though instances have been recorded in which they have shot up afresh even when more than a century old. With good management and careful cutting, however, a Chestnut plantation may last for a great number of years. From

nine to thirteen years is the common length of a rotation, but basket-makers' Osiers are cut at the end of the first and second years; Hazel for crates and hampers and for the cooper's use, at the end of the third; Ash and Spanish Chestnut upon good soils, at the end of the ninth or tenth years; and Oak, Hornbeam, Birch, &c., upon inferior soils, at about thirteen years old.

As coppice shoots are produced either by the adventitious buds which spring from the edge of the cut surface of the stool, or from the dormant or lateral buds which proceed directly from the medullary processes in the wood, and below the former, the method of cutting has a considerable influence upon the future crop. When the bark is torn from the edge of the stool's surface, the adventitious buds are destroyed, and heavy blows from a blunt instrument will also destroy the dormant buds, and even break off the finer fibres of the small stools standing in loose soils. To avoid this, the poles growing upon the smaller stools should always be cut off with the bill-hook, and everything under 6 inches in diameter with a light axe. All tools used in coppice felling should be of the best kind, and also be kept to a keen edge. No cutting should be permitted during frosts, and all blows should be directed upwards as far as practicable. Except in very wet situations, where the stools are occasionally partially immersed, they are best cut off as close to the ground as possible, in which case the dormant buds send up shoots from near the surface of the ground, or even below it, and these, in time, become well rooted in the soil, and at the next cutting considerably extend the area of the stool.

A.

Planting Gorse or Furze.—Land intended for Gorse seed should be prepared much in the same way as Turnip land, that is, deeply stirred and finely pulverised; it should also, where a quick growth is desired, have a dressing of good lime compost or a little well-rotted manure, though it is a plant that will eventually flourish even upon a poor soil. Where Gorse is intended to form a hedge, about 1lb. of seed to the 100 lineal yards may be sown upon the top of a well-worked ditch bank. This plant is more permanent if it be not allowed to seed, and the best time for trimming it is directly after the flowers are shed, generally about the middle of June.—A. J. B.

The Sweet (Spanish) Chestnut.—Of the durability of the wood of this tree the most undoubted proofs exist, as many of the oldest mansions in England have been built of it. Possessing all the strength, durability, and toughness of the Oak, the Chestnut has the advantage over it that it has a finer colour. As some people may have a difficulty in distinguishing the two species in old buildings, it may be well to remark that when a nail or bolt has been driven into Oak before it was dry, a black stain will be found round the head. This is not found to be the case with the Chestnut.

The Beech.—Beech is a wood which, from its hardness, closeness, and strength of grain, holds a prominent place amongst the trees of the forest. It is a wood, however, that when exposed to alternate dryness and moisture soon decays, but when kept entirely under water, or used for purposes where it is continually dry, it lasts well. It is not adapted for heavy cross strains, but is suitable for piles under water and all similar purposes. It is also a good wood for the turner, and is used in machinery and extensively for chair making. When in full foliage it is remarkable for its close shade and cooling qualities. The branches, and such parts of the tree as cannot be more usefully employed, will make capital firewood.

Constricted bark.—This disease is occasioned either through the action of the roots becoming too feeble for the proper support of the tree, or through very dry cold air playing upon the trunk and branches of a tree which has become exposed. It is occasionally shown by the bark becoming in-

durated and losing its elastic properties, whereby the sap vessels get confined and their proper functions suspended. In the Plane tree the outer layers of bark peel off; in the Oak they become torn longitudinally; and in the Beech stretched horizontally. When in this hide-bound state the trunks often become covered with Mosses and Lichens, and are preyed upon by insects. The only sure remedy is scoring the trunk, and perhaps the main branches, right through the bark from the top to near the roots. The operation may be safely performed about midsummer, and the relief given to the tree will become apparent directly. I have seen old Apple trees renovated by scraping or stripping off a considerable portion of the rough old bark, and hide-bound young ones instantly revive after scoring. By leaving the inner layers of bark uninjured, considerable liberties may be taken with the rough external coating.—A.

Creosoting timber.—I venture to say that if the value of creosote for preserving timber was better understood than it is, it would be more appreciated. I have now before me a proof of the good that results from creosoting fencing. About five years ago I enclosed a small plantation with a four-rail split Oak fence, and as this was my first experiment with creosote, I put in, as a test, a few lengths of sawn Larch and split Oak uncreosoted. The result now is that the creosoted fencing is quite sound and as clean as on the day it was fixed, whereas the uncreosoted portion is covered with Lichen and Moss, and the posts near the ground are producing a good crop of fungus, a sure indication that decay is at work. I find that wherever creosote is present no vegetable growth can exist. Whether in the case of heart-wood or sappy Oak creosote is equally valuable for preventing the growth of Lichen, Moss, and fungus, and it will also enable the wood to resist absorption of wet. The tank which I use for charging the timber with the creosote is made of the best boiler plate, and is 17 feet long, 5 feet wide, and 4 feet deep; this size will hold two lengths of rails at once; the creosote is kept simmering two nights and one day before the fencing is sufficiently pickled.

Covering for tree wounds.—It often happens that, either by intention, as in pruning, or by accident, trees are wounded in various ways. A common practice is to cover large wounds with coal tar, but this is objected to by some as injurious to the tree. Experiments go to show, however, that its use in covering large wounds is not injurious; but that, on the contrary, a callus readily forms under the tar on the edges of the wound, and that the wounded part is thus protected from decay. There is, nevertheless, another objection; for if the tar be applied a little too thick, the sun melts it and it runs down on the bark of the tree. This can be obviated by mixing and stirring, and thus incorporating with the tar about three or four times its weight of powdered slate, known as slate flour—the mixture being known as plastic slate, and used for roofing purposes. It is easily applied with an old knife or flat stick, and though it hardens on the surface, it remains soft and elastic underneath. The heat of the sun does not melt it, the coldest winter weather does not cause it to crack, neither does it peel off. The same mixture is also useful for other purposes in the garden. Leaky watering-pots, barrels, pails, shutters, sashes, &c., can be easily repaired with it and much annoyance and loss of time be thus avoided. It will stick to any surface provided it be not oily, and as it does not harden when kept in a mass, it is always ready for use. A gallon will last for a long time.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

THE FRUIT CROPS.

WE are enabled to publish, through the kindness of our many correspondents, the reports of the fruit crops for the year 1889. It needs no words from us as to their condition in this present unpropitious season, as the following accounts from all parts of the United Kingdom tell their own tale. We append first of all Mr. Coleman's remarks on the fruit crop:—

The terrible blank which our English orchards just now present to fruit growers and consumers means a loss of hundreds of thousands of pounds to the former, and the transfer of a still greater sum from the pockets of the latter to those of our transatlantic relations. A failure so general and so nearly complete falls with double weight upon the agri-pomological section of the community so recently and urgently encouraged by ex-statesmen and enthusiastic orators to plant fruit trees, and in due course realise profits ranging from £10 up to £120 per statute acre. And yet this third blow is not an unmixed evil, as all thoughtful men who believe that a living may be made are reminded that the brightest skill, backed by ample capital, cannot prevail when climatal conditions year after year are against them. The planting carried on last autumn with a rush will be slightly checked or confined to the most eligible sites, and capitalists will pause to consider before they invest upon the most suitable land which is not secured by a thirty years' lease, or, better still, by purchase. The jam factories now springing up, and the establishment of more markets, will benefit growers and consumers of soft fruits. Hybridists may help them by raising sterling varieties, and keeping back the inferior sorts whose short lives are ushered in by puff and hysterical nonsense, and raisers of Apples, Pears, and Plums may benefit generations unborn by giving us a succession of sorts in flavour equal to Cox's Orange Pippin, Marie Louise, and Coe's Golden Drop, which the most delicate invalids can eat cooked or raw, as they carry with them their own sugar. From these remarks readers at home and abroad will gather that common as well as choice Apples, Pears, and Plums are partial, so partial indeed that the loss in this county alone, therefore, cannot fall far short of £100,000.

But why this scarcity, when the most sanguine theorists in various parts of the country, after taking stock of the trees and buds, late spring, and immunity from frost, assured us that our prospects were splendid? Some old cultivators who ventured less rosy opinions were dubbed doleful, but guided by the fact that the cold, wet, sunless summer of 1888 had been most unfavourable to the ripening of the wood, predicted leafage in advance of blossom, flowers fair to look upon, but lacking perfect sexual organs. Flowers in due course opened, those upon Pears being remarkably large in the petal, and well they might be, as the majority of them lacked anthers or pistil. Having nothing better to do, not even a morning frost to battle against, the petals dropped quickly, and the trees, especially those that bore fruit last year, at the

present time are next to fruitless. Plums open about the same time are, perhaps, a little better than the less hardy Pear, and the half crops in many places, no doubt, will realise good prices. Green Gages on healthy young trees in orchards, and Golden Drops on north and east walls in some places are fairly good, whilst the market grower's sheet anchor, Victoria, is decidedly light, a strong factor in favour of the theory that choice varieties are as easily grown as common ones. Cherries produced flowers far beyond the normal size, and a few of the hardiest dessert sorts on walls, including May Duke, Elton, Bigarreau Napoleon, and Black Eagle, have borne good crops of fine fruit, but the trees in the orchards were not worth watching and picking. Morellos flowered very freely and to all appearance set well, but they still keep dropping, a fair proof that the vitality of the trees was too low and the sap too watery to support them through the stoning process. Yet another precocious flowering tree, the Apricot, invariably occupying the second best place in the garden, upon which, if anywhere, the buds should ripen, is equally capricious. The buds in many gardens were *nil*, in others they dropped wholesale when the size of peppercorns, and where the fruit appeared properly set dropping quite up to the stoning stage has been continuous. Had I for a moment doubted the cause of all this imperfect inflorescence, my scruples quite recently would have been set at rest by a cottager's tree growing against his chimney, for there in a south-west angle the Apricots were clustering like ropes of Onions. The loss of the crops is attributed to the tropical blossoming time, but warmth from within as well as without does not seem to have done much harm to this Apricot, neither do we find our cold north and east walls anything but tropical, making good our losses upon more favourable aspects.

Peaches produced an abundance of flowers, smaller and paler than usual. These apparently set well, but many of the young fruits emerged with double, triple, and quadruple points, and being useless were rubbed off at the first budding. Perfect fruits now form a light average crop which promises to make up in quality the deficiency in quantity. The trees, old and young, from the first have been remarkably clean and the growths, rather too strong, are quite free from blister. All my fruiting trees are root-pruned every year, the roots of the current season being shortened back to within 6 inches of the union with those of the preceding year. The semi-circular trench is filled in again, firmly rammed, and the recently shortened roots are relaid in a horizontal position.

Apples, young and old, choice and common, are extremely capricious, as might have been expected from early leafing and late flowering. The dormant buds, I must admit, looked promising, but when they commenced swelling we soon found that not more than one flower in each truss, if properly formed, was strong enough to develop its puny petals. Many of these never opened, and those which did were gone within forty-eight hours. Frost could not be blamed, for we had none. Grub of the current year had not appeared, therefore it was blameless; but what shall we say of the work of its parents? These in 1888 literally stripped thousands of trees, leaving them in May and June as brown as we expect to see them at Christmas. Whole orchards were given up for dead, but with the sun of 1887 in their veins the rain of June gave them a fresh start, if pale leaves upon soft puny shoots could be called a start. At any rate they pulled through, but

how anyone professing to know anything about fruit trees could expect this semblance of wood and buds to develop into a crop passes my comprehension. Bush fruits, especially Gooseberries, Red and White Currants, are remarkably fine and abundant. Black Currants are much blighted and badly managed. Raspberries, which grew too strong upon cold ground, never ripened their buds properly; consequently crops light and patchy suggest room for improvement in the culture of this wholesome and delicious fruit. Strawberries, at one time very abundant, came in with a rush, and on light soils were soon over, the dry, warm days and cold nights in June having been against latent fruits and favourable to mildew. Our best pickings have been made from La Grosse Sucrée, Héricart de Thury, Paxton, British Queen, Dr. Hogg, and Filbert Pine. President and Napier have not coloured well; Elton and Oxonian on north borders will carry us well into August. Figs on walls are a light average crop and very forward. Nuts on our Hazel loams are very thin. Walnuts on the clay soil *nil*; on the sandy hillsides abundant.

SOUTHERN DIVISION.

Syon House, Brentford.—The fruit crops in this district may be classed as average. Small fruits have been good and plentiful. The Strawberries have yielded abundantly and the fruit has been good, but the season was a short one. Noble promises to be a good early kind and a good traveller, but rather deficient in flavour. Raspberries are a heavy crop. Gooseberries and Currants are plentiful. Apples are thin in places. Keswick Codlin, Manks, Hawthornden, and Cellini are bearing good crops. Choice dessert kinds are very poor, King of Pippins, Irish Peach, and Orange Pippin being the most prolific. Pears are partial; many of the free bearing kinds have scarcely any fruit. Marie Louise, Marie Louise d'Uccle, Beurré Diel and Louise Bonne of Jersey are fairly laden with clean fruit. Cherries are not so good as the abundant blossom led one to expect, many of the fruits having dropped off. Morellos are more plentiful and good. Apricots on south walls are over an average crop, but a total failure on west aspects, although well protected while in bloom. Plums are only a poor crop; many of the trees are very thin. Such kinds as Victoria, Rivers' Prolific, and Pond's Seedling, which scarcely ever fail to produce a crop, are much below the average this season. Peaches and Nectarines are much below the average, but the trees are cleaner than is often the case. Nuts are under average.—GEO. WYTHES.

Heckfield, Hants.—In regard to fruit crops, I regret being obliged to write the word "failure" in respect to the most useful of all fruits, the Apple. The caterpillar plague was even more devastating than last year, and in this garden and surrounding district it would not be difficult to count the number of fruits. Though we made the attempt to stay the plague, both by hand-picking and washing the trees, it was all but labour quite lost, the crops on a few small trees only being saved. In large orchards every vestige of leaf and blossom was devoured by the insects. The trees are now clean and have made good growth, so that, given a sunny autumn, there may be a good crop of fruit next year. Pears were similarly attacked, but the injury done is not quite so complete, because, being able to command a good force of water, the trees were washed several times, and a few trees are fruiting moderately well. All the trees were a sheet of flower, and but for the caterpillars there would have been marvellous crops of Pears as well as Apples. Plums are better; trees both on walls and as standards will average half a crop. Morello Cherries are excellent crops, but others poor. Raspberries and Currants of all kinds have been wonderfully good crops, and I never knew them so free from blight. The Strawberry crop was most abundant. The new

variety Laxton's Noble was grand here in crop, size, colour, and beauty, but in quality second-rate. It was very early in ripening, being as early as Black Prince and Princess of Prussia. My greatest favourites, both for forcing and main outdoor crops, are still Vicomtesse Héricart de Thury and President. Laxton's new kind, Jubilee, will, I think, prove to be a valuable late kind.—W. WILDSMITH.

Newtown, Liphook, Hants.—Small fruits are very fine and good; Apples and Pears under average; Cherries (Morellos) average; Plums under average; Apricots little grown in neighbourhood; Nuts failure. The cause of the failure in Apples, Pears, and Plums was the aphid. The trees were completely smothered.

THE POTATO crop is excellent both in quality and quantity.—P. EDWARDS.

Polesden, Dorking.—Strawberries, Raspberries, Red, White, and Black Currants, and Gooseberries are a full crop this season and very good. Morello Cherries a full crop, other kinds very partial. Plums about half a crop, and very clean. Apricots not grown. Apples and Pears almost a failure; the bloom buds were evidently not matured, as the blossom fell directly after opening. Nuts and Filberts a failure. Walnuts a failure.

POTATOES both on farm and garden promise a fine crop. No signs of disease at present.—O. GOLDSMITH.

Northaw House, Barnet.—As to the fruit prospects around this neighbourhood, Apples are under the average in quantity, owing to the bloom falling prematurely. This I think was caused by the wet and sunless summer of 1888. Caterpillars have also worked mischief with the trees, but not to the extent of last year. Pears, Apricots and Plums will yield but a slight crop, owing probably to the same causes. Morello Cherries and dessert kinds bear well. Peaches of the best varieties do well with us out of doors, the trees being healthy, clean, and bearing good crops. Nectarines are good. Raspberries, Currants, and Gooseberries are very plentiful, and Strawberries in abundance, the latter being very fine, Laxton's Noble being a grand kind both as to size and earliness. Walnuts, Cobs, and Filberts will yield very poorly this year.—J. MAY.

Holly Lodge, Highgate.—Apples rather above the average. Pears a fairly good crop; also bush fruit. Plums and Damsons a full crop. Morello Cherries thin and small. Peaches and Nectarines on open walls have almost failed, owing chiefly to the unripened state of the wood last autumn, in consequence of which the blooms did not open kindly. The sorts we have found the most satisfactory as to bearing and flavour are Peaches Early Alexandra, Hale's Early, Belle Beauce, Barrington, Princess of Wales, Violette Hâtive, Royal George, Crimson Galande. Nectarines Lord Napier, Hunt's Tawny, Elruge, Pitmaston Orange, Violette Hâtive, Pine-apple. Some newer sorts we have under trial on the open wall, but they are hardly in good bearing condition. Dryden Nectarine I think much of. As to inferior flavour in market Peaches, I think the chief causes are treatment to produce large fruit and gathering before being ripe.—J. WILLARD.

Lockinge Gardens, Wantage.—Apples are very much under the average. There was an abundance of bloom, but the wood was imperfectly ripened owing to the wet season of 1888. Apricots very thin in this district. Pears are a thin crop with us. Our best are Beurré Diel, Marie Louise, Williams' Bon Chrétien, and Louise Bonne of Jersey. Plums are an average crop on walls; on standards very thin. Our best are Denyer's Victoria, Jefferson's, Washington, Green Gage, Kirke's, Standard of England, and Magnum Bonum. Peaches and Nectarines are very thin. Strawberries were abundant and very fine; the best crop I have seen for some time. Raspberries, Gooseberries, and Currants are all good crops, with the exception of Black Currants, which are very small this season. Cherries in the orchards in this district have been a fair average crop; good in quality. Walnuts are a thin crop; Filberts none.—J. H. ROSE.

Bearwood, Wokingham.—The Apple crop here and in the district is a complete failure, al-

though most kinds flowered well, but the blossoms seemed to be very weak. I never knew the maggot come on so quickly and prove so destructive. It has utterly destroyed the crop, and in many places the trees are destitute of foliage. Pears are better. We have a moderate crop on walls and pyramids; standards very thin. Plums on walls are a good average crop; standards under average, and much blighted. Apricots none. Cherries average crops. Most sorts of Strawberries have carried good crops and finished well. Bush fruits have been very good.

THE POTATO crop both of early and late kinds is a good one. They are free from disease, and the tubers are of good flavour.—JAMES TEGG.

Titniss Park, Sunninghill, Berks.—Strawberries and bush fruits have been good both in quantity and quality; Apples and Pears are a failure; Plums are partial; Peaches in early houses did very well, but in late houses the majority dropped off after they were as large as marbles, which I think was owing to the wood not being properly matured last autumn. Not many Peaches are grown outside in this neighbourhood, as they are not satisfactory. The leaves blister in the early part of the season, then gumming follows.—THOMAS DUNCAN.

Waresley Park, Sandy, Beds.—Fruit crops in this district are very much below the average, but otherwise could hardly have been expected considering the very bad summer and autumn of last year. If this had not been an exceptionally fine spring it is doubtful if there would have been any fruit at all. There are a few varieties of Apples here bearing heavily, but the majority of sorts are very light. Pears both on standards and walls are a very poor crop; Plums are better than they have been for years; Morello Cherries are a fair crop, but other sorts have been a failure; Apricots are a thin crop, there having been very little bloom, but the fruit will be fine; Peaches and Nectarines are a good crop and the trees healthy. Peaches with proper attention generally do well in this district; Strawberries and bush fruits generally were good; Nuts, both Walnuts and Filberts, are very scarce.

VEGETABLES of all sorts are abundant and of first-rate quality.—R. CARTER.

Elsenham Hall, Bishop's Stortford, Essex.—Peaches good crop under glass, but very light on the walls outside. The best flavoured Peach grown here is the Noblesse. Nectarines good crop under glass. Victoria, Goliath, Rivers' Early Prolific and Jefferson's Plums good on the walls. A standard tree of Denyer's Victoria is also carrying a very heavy crop. About ten years ago we budded the Victoria with Denyer's Victoria, and for the last six years the tree has borne on an average a bushel of Plums considered better for preserving than those grown on the walls, as they are not watery, and make a firmer jam, which keeps better. One of the most valuable fruits grown here is the Farleigh Damson, which we have grown about ten years. After the trees had been planted two years they commenced bearing very heavily, and are doing the same this year. Neither birds nor wasps eat the fruit of this Damson. Apples and Pears are almost a failure in the neighbourhood. There are a few young trees bearing a good crop. The Pear crops are lighter than the Apple. Apricots are a very poor crop. Strawberries were a good crop. The variety grown here on our light soil is Sir J. Paxton, and this kind is preferred to all others. Bush fruit has been very plentiful in this neighbourhood.—WILLIAM PLESTER.

Woolmers, Liphook, E. Hants.—The soil in this neighbourhood being light and shallow, resting on red sand, is not very suitable for some fruits. Apples and Pears are soon covered with Lichen and stunted in growth if planted in the ordinary soil. Apricots and Peaches, too, are very unsatisfactory, and it is difficult to keep them alive. Not many are grown outside. This year the crops of Apples are very light, the most reliable kinds being Irish Peach, King of Pippins, Orange Pippin, Sturmer Pippin, Deux Ans, Ecklinville Seedling, Loddington Seedling, and New Hawthornden. Pears are also very light, the most reliable being Winter Nells, Josephine de Malines, Jar-gonelle and Pitmaston Duchess. Plums about

average crop, trees much infested with aphid. The most reliable kinds are Victoria, Green Gage, Kirke's, Magnum Bonum and Grand Duke for walls; Victoria, Pond's Seedling, and Rivers' Prolific for the open. Strawberries, Raspberries, Currants, Gooseberries, and Cherries are excellent both in quantity and quality.—J. TAVERNER.

Grenehurst, Capel, Dorking.—Apples are a failure with me again this year, owing to the ravages of the maggot. Pears are a fair crop. Peaches a poor crop. Morello Cherries a heavy crop. Plums on wall a good crop. Raspberries, bush fruits, and Strawberries an abundant crop.

CARROTS, Onions, Parsnips, and Beet have come well with me. Peas and Beans are grand this season, while vegetables of the Brassica order have never looked better.—W. SHEPHERD.

Cowdray, Midhurst.—Orchard Apples, Plums, and Damsons are almost a failure, the trees being almost stripped by caterpillars. Apples within the garden walls, as old standards, have, in some cases, a full crop, other trees none. Pyramids and espaliers the same, about half a crop in the garden. Pear trees on walls, espaliers, and pyramids have scarcely any. Sweet Cherries, average crop. Morellos, half crop. Plums, average crop. Apricots, good crop. Peaches fair crop. Gooseberries fair. Currants under average. Strawberries good. Nuts and Walnuts very few indeed. Our best Peaches outside are Royal George, Alexandra Noblesse, Gros Mignonne, and Walburton. Outdoor culture fairly successful.—FREDERICK GEESON.

Redleaf, Kent.—Apples as an orchard crop in this district may be considered an entire failure, owing to the ravages of the caterpillars. In the garden we have a few trees with a fair crop, and the varieties can be counted on the fingers. Lane's Prince Albert, Frogmore Prolific, Hawthornden, and Lord Derby are the best. Pears are below an average crop. Plums very fair on walls, but poor on standards and bush trees. Apricots are very, thin. Cherries pretty fair on walls, none on bush trees.—W. HOLAH.

Gosfield Hall, Halstead, Essex.—Apples good average crop. A few of the best are Blenheim Orange, Ribston Pippin, Wellington, Cox's Pomona, Orange Pippin, King Pippin, Lord Derby, and Ecklinville Seedling. Pears very scarce both on walls and in orchards. Plums under average; trees more or less affected with blight. Cherries, fair crops of dessert kinds; Morellos not so good. Peaches and Nectarines, none outside. Bush fruit in abundance and fine. Strawberries, good average crop—Noble, Sir Joseph Paxton, British Queen, Marguerite, Duke of Edinburgh, Elton Pine, Mrs. Powell, Carolina superba are all good.—W. DANCE.

Bassett Wood, Southampton.—With regard to fruit crops they are considerably more in quantity and quality than last year. Strawberries have been much better in flavour and very plentiful; bush fruits unusually so; Plums and Morello Cherries a fair crop; Apples and Pears in some parts good, scarcely any in others. In this garden caterpillars played havoc in early spring before the bloom was quite expanded. Peaches and Nectarines under glass a fair crop and of good flavour.—F. BOHEY.

Luton Hoo Park, South Beds.—Apricots do not succeed well in this particular district, trees being affected with gumming. Apples are a very light crop, the varieties bearing half a crop being Mère de Ménage, Cox's Orange Pippin, Lane's Prince Albert, and Brown Russet. The trees were again attacked with the caterpillar. They have now made some wood, but the chances are against its ripening well. The trees which carried a heavy crop last year are carrying a still heavier one this season. The crop of Cherries, especially that of Morellos, is good, but the fruit is undersized. Currants are a good crop, but Black run small. Red and White are excellent in bunch and berry. Gooseberries are a good crop and of fair size. Peaches and Nectarines are a fair average crop, but the trees were more affected with blister on the leaves than usual. Figs are promising, but much depends on the weather during the next two months. Plums are

the crop of the season, some of the trees requiring to be relieved of a portion of the fruit. Pears are light, but there is a prospect of the fruit swelling to a good size. Raspberries are a fair crop; they threatened to run small, but the late rains have caused them to swell to a good average. Strawberries have been a heavy crop and the fruit large. Nuts are very light, Walnuts being a blank. There is not such a crop of fruits this season as the flowering season gave promise of.—W. M. BAILLIE.

Highams, Bagshot.—Strawberries an abundant crop; quality good; Sir Joseph Paxton still one of the best. British Queen has also done well this season, but for heavy cropping qualities on this light soil nothing equals Auguste Nicaise, only the flavour is second-rate. Gooseberries and other bush fruits a heavy crop, but small. Cherries on walls a good crop; standards in open orchards a failure. Apples, with one or two exceptions, are a complete failure; there was an abundant bloom, but blight and caterpillars soon put all hopes of a crop in the background. The trees are just making a second growth, which seems healthy at present. Old Hawthornden carries a good crop; this variety rarely misses here. Lord Suffield is also bearing well on young trees, and, strangely enough, a young lot of trees planted here last autumn escaped the caterpillars, and are making a clean growth. Some varieties of Pears are a good crop; Jargonelle, Chaumontel, and Beurré Clairgeau on walls being the best. Plums are a light crop both on walls and standards, with the exception of that sterling variety, Victoria. Apricots are thin, Moorpark being the best.—C. PAGE.

Basing Park, Alton.—Apple crop is very bad in many gardens and orchards, and the trees very much blighted, the leaves being much eaten by caterpillars, but the trees in our gardens are free from blight and maggot, and we have a fair crop on such kinds as Irish Peach and Keswick Codlin. The Apple crop is, however, irregular; although there was a splendid show of bloom and the fruit set well, it dropped off when about the size of large nuts. I consider the cause of dropping off from the effects of last summer's wet and cold; the wood was not well ripened. Pear crop is very similar to the Apple crop. There is very little fruit on standard trees, but better on the wall trees. I attribute the cause of failure to the unripened state of the wood of last summer. Peach and Nectarine crops are good in most places and look promising; trees clean and healthy, as the hot summer suited them. Plums are a good crop, but a great many have dropped off before stoning from the unripe state of the wood. The trees are very much blighted. Cherry crop is bad here, and the trees blighted. Strawberries were a most abundant crop; fruit good in quality, size, and quantity, and the plants look well. Raspberries a first-class crop and fruit good. Gooseberries good crop. Currants good crop.

POTATOES are a good crop and free from disease, and of first-rate quality; all the early kinds ready to take up, and all the late kinds look well and most promising.—WM. SMYTHE.

Swanmore Park, Bishop's Waltham.—Apples are thin except in a few places, and varieties Warner's King, Ribston Pippin, Yorkshire Greening, D. T. Fish, New Hawthornden, Nelson's Glory, and Deux Ans are the best. Such free-bearing varieties as Lord Suffield, Keswick Codlin, Worcester Pearmain, and Ecklinville Seedling are almost a failure. Pears are almost a total failure, a few fruits of Pitmaston Duchess and Beurré Diel upon wall trees being about all to be seen. Even Louise Bonne of Jersey is bearing badly. Plums must be regarded as a thin crop, Early Orleans, Coe's Golden Drop, Jefferson's, and Kirke's are the best. Victoria here is a failure. Cherries are a capital crop on wall trees. Standards and bushes are very thinly covered with fruit, May Duke, White Heart, Governor Wood and Morellos are the best, the quality being good. Strawberries have been in this neighbourhood the heaviest crop, and the finest fruit known for years. Many acres of land hereabouts are under cultivation for market purposes. The varieties are mainly

confined to two, Alice Maud for first crop and Sir Joseph Paxton as a main crop. This variety is highly esteemed by the growers for its large size, good colour, and for its firmness of flesh, fitting it well for travelling. Vicomtesse Héricart de Thury is a useful variety here for early use and of good flavour. Gooseberries are an exceptionally heavy crop of fine fruits, good in quality. Raspberries are a good crop, Northumberland Fillbasket being the best; Carter's Prolific is also good. Red, White, and Black Currants have borne exceptionally heavy crops of clean fruit of excellent colour. Peaches very little grown, Violette Hâtive and Royal George the best. Moderate crop this season outdoors.—E. MOLYNEUX.

Titsey Place, Limpsfield, Surrey.—The fruit prospects in this neighbourhood are generally poor or about one-third of a crop. Apples and Pears showed plenty of blossom in spring, which gave good hopes of a crop, but the preceding year had been most unfavourable to the ripening of the wood. The result is in many places, as far as I can glean information, almost a failure, while in others there is about half a crop remaining. Plums of some kinds are bearing well, such as the Victoria type, and Prince Englebert and Rivers' Early, as orchard trees, are producing moderate crops; whilst Green Gage, Pond's Seedling, are said to be tolerably good on walls, whilst many other kinds are almost devoid of fruit. The Damson is almost a failure. Bigarreau Cherries are thin, but Morellos are more plentiful, about half a crop. Bush fruits, such as Black, Red and White Currants, are a partial crop, much better in some places than in others. Gooseberries are plentiful. Strawberries and Raspberries have been abundant and fine, in fact, as good as I ever knew them, and above average.—J. G. DEAN.

Lythe Hill, Haslemere.—The Apple and Pear crop in this district is a total failure, so much so that out of eleven orchards we shall not gather a peck, and with few exceptions the same may be said of Plums. Apples and Plums set abundantly and gave promise to be an exceptionally good crop, as they started swelling away so evenly. Pears were not so full of bloom, but they also opened well and set, but our hopes for a fruit harvest were marred by the caterpillars, which quite bared the trees of leaves. For miles around the Oaks suffered nearly to the same extent. All deciduous trees suffered more or less, and even the common Laurel and Rhododendrons were quite riddled. Although the caterpillars have been general in most places in England, those districts in which the Oak trees are plentiful have evidently suffered the most. The Strawberry crop has been a capital one as regards size, quantity and quality. Currants (Red and White) are plentiful and of fine quality. Black Currants, perhaps, are not quite so fine this year as in previous seasons, but with me they are plentiful. Gooseberries are a very heavy crop, and, strange to say, the bushes have not been attacked by caterpillars. I have had numerous inquiries about the caterpillar on the trees inside our netted Gooseberry quarter, but, strange as it may appear, those trees are always free from their attacks. I think the fine mesh netting keeps out the moth. Raspberries are of fine quality.—A. EVANS.

Aldenham House, Elstree, Herts.—The fruit crops in this district are not so satisfactory as they promised to be at the flowering season, particularly the Apples. At that time there was every appearance of a splendid crop, but like last season the caterpillars wrought sad havoc both to the fruit and foliage so that the crop is far below the average; but, strange to say, in a few places near here the trees are breaking down with fruit, so much so that the owners have had to prop up the branches. The sorts bearing best with us are Fearn's, Cox's Orange, and King of the Pippins, of the dessert kinds; Keswick Codlin, Frogmore Prolific, and Ecklinville Pippin, kitchen sorts. Pears are better than the Apples. The trees are healthy and carrying fair crops, the best being Louise Bonne of Jersey, Forelle, Williams' Bon Chrétien, Duchesse d'Angoulême. Plums are splendid and above the average, both on walls and standards. The sorts we

rely most on are Green Gage, Jefferson's, Kirke's, New Blue, and Coe's Golden Drop for dessert; Rivers' Early Orleans, Prince of Wales, Victoria, and Damsons for kitchen, all of which are excellent. Apricots a fair crop. Peaches and Nectarines very poor. Cherries under average except Morellos, which are very fine. All kinds of bush fruit quite up to average. Gooseberries large and of fine flavour. Strawberries all one could wish, and on our heavy retentive soil gave a long supply. Our favourite kinds are Garibaldi, President, and Sir Joseph Paxton.

THE Potato crop, both of early and late kinds, promises to be good.—EDWIN BECKETT.

Pendell Court, Bletchingley.—There is a considerable amount of variation in the crops of fruits this year. Apples and Pears are very thin, but what fruit there is of fair quality. Pears are, however, decidedly better than the Apples. Apricots, Peaches, and Nectarines are, although thin, of good quality. Plums are a better crop than either of the foregoing, and represent a tolerably fair crop of good fruit. Cherries have been abundant and of first rate quality both on walls and standards. Turning to small fruits, they have been very prolific, Currants and Gooseberries bearing fine large clean fruit. Strawberries were an extra crop and of fine quality. Such fine flavoured sorts as British Queen and Sir Charles Napier finished off well. Nuts are a failure.—F. ROSS.

Barrow Hill, Henfield, Sussex.—With respect to the fruit crop in the gardens here and neighbourhood, I may say Strawberries have been a most abundant crop generally. The sorts grown here are La Grosse Sucrée, V. H. de Thury, President, Duke of Edinburgh, Sir C. Napier, all cropping well, the soil a light sandy loam. Gooseberries, Currants, and Raspberries have also produced good crops especially where bullfinches and sparrows have not been allowed to take the buds in winter and spring. Apples are a very partial crop, in some places a full crop, in others none. Here we have a good crop, dwarf bush trees bearing so heavily as to require thinning. Apple trees have not been attacked by caterpillars, as in some districts, but Pears were much injured by them when in bloom; consequently there is a very short crop generally. The crop of Plums I think is about an average one. Cherries very few except Morellos on walls.—C. FOWLER.

Devonhurst, Chiswick.—The appearance of fruit trees when in flower was very promising indeed, but, unfortunately, the expectations then formed have not been quite realised. Whether this may be the result of immature wood from the previous unfavourable season or the absence of wind when the trees were in flower, it would be difficult to say. I am inclined to think the latter the more probable cause of failure in the fruit not setting so freely as the quantity of blossom promised while the trees were in flower. When the trees were in flower we were entirely free from late spring frosts, but with very little wind to distribute the pollen. Apples are a fair average crop, some trees being heavily laden. Pears are below an average crop, standards in the open being better cropped than on the walls. Peaches outside are a thin crop. The trees are all on the Plum stock, on which they succeed admirably, very little canker taking place in them. Cherries on walls a good crop; on standards very thin. Plums on walls a thin crop, but on standards a fair average crop. Bush fruit—Currants a splendid crop; Gooseberries about an average. Raspberries a heavy crop, the fruits being larger and finer than we have before seen them. Strawberries were about an average crop, but soon over.

POTATOES are turning out well, and no appearance of the disease at present.—A. WRIGHT.

Poles Gardens, Ware, Herts.—Our fruit crops this year are satisfactory. Apricots on a south wall are fully cropped; those on a west aspect are thin. Apples are an average crop as to bulk, some sorts making up for the thinness of others. Pears are bearing well in the open, but thin on walls. Plums are heavy on the walls and

thin in the open. Bush fruits are all good, plentiful, and the berries larger than usual.—W. M. ALEXANDER.

EVILS OF GRAFTING.

I SEE there is a brief reply from America and Ireland, but neither touches the point at issue—the abolition of all budding and grafting. They both advocate the propagation of weeping trees from layers, but I hesitate not to say that neither has any practical idea as to the result or the time it would take to get up moderately sized standards—probably twenty years would scarcely suffice even if they could be propagated in that way. In the meantime the roots would become coarse, and the probability would be that when the time came for removing them to permanent positions they would remain stunted or die. Then as regards cost. Do you imagine trees raised in this way could be sold at the present low prices, or anything near it? I rather opine not.

I do not wonder at your not being able to procure true Medlar trees from English and French nurseries otherwise than grafted, which proves what I said before. They cannot profitably be raised in any other way, and if worked on clean proper Pear stocks, do exceedingly well in every way. [Mr. Rogers can scarcely be serious in saying that a tree so vigorous as the Medlar cannot be profitably raised in any other way. As well might he say the Quince could not be profitably raised in any way but by grafting.—ED.]

I could greatly enlarge on the benefits derived from budding and grafting, but I must refrain. It would take too much time and lead to no beneficial result. I will, therefore, confine myself to the few things mentioned.

With respect to named sorts of Rhododendrons being killed in America on account of the ponticum stocks they are grafted on, I totally deny. [Here is a point on which Americans can best speak. How the things live after they leave the nursery is the question; not how they look in it.—ED.]

I have sent thousands there during the last twenty years and have had no complaint to that effect. It is perfectly true that Rhododendrons suffer there as here from intense frost, but equally so whether grafted or otherwise. Grafting has nothing whatever to do with it. Your Dublin correspondent, who affirms that grafting is "of that class of offences which add insult to injury," evidently (although he speaks very loud) does not do so from experience, as he asks with great simplicity, "If grafting really did improve Apples, Peaches, Pears, and Plums, why do not nurserymen offer us grafted Gooseberries, Currants, Figs, Vines, Mulberries, and Raspberries?" The answer is obvious: because they are of a different nature, and can be better and more readily cultivated in other ways. By all means, after such strongly expressed opinions, I recommend him, with much sympathy, to carry out "the good old honest plan of hillock-layering" (whatever that might be), and "have nothing to do with the subtleties and vagaries of grafted stuff." A word or two on your own remarks, and I have done. I do not doubt the correctness of the engraving of the abortive graft exhibited in THE GARDEN, but from its appearance, the graft from some cause (perhaps easily explainable if known) failed; consequently the stock not being further regarded, threw up suckers; but surely such a trifling instance as this cannot affect the whole system of budding and grafting. [Most certainly it does. It was one of a fine set of groups of grafted flowering shrubs, every one of which died or is now dying surrounded by a bery of suckers.—ED.]

The Pyracanthas purchased as such from a Surrey nurseryman and producing only Quince suckers must, I apprehend, be a mistake, as they are so readily raised from seed. I never knew them grafted on Quince stocks, and I fancy most nurserymen would smile if told so. I am sure Mr. Anthony Waterer would. [They were bought at Messrs. Cobbett's nursery at Woking, and surely Messrs. Cobbett are not alone in the practice.—ED.]

You appear to mistake greatly the nature of a nurseryman's business. He is supposed to send out things as ordered true to name. It is well known that most fruit trees and many forms of variegated, weeping, cut-leaved, and double-blossomed trees are not constant from seed; it would therefore be an absolute fraud and ruination for any nurseryman to supply seedling fruit and ornamental trees and shrubs when specific and named varieties were ordered. [But he can layer them if he can do nothing else. Our objection is, that we are sold the Quince instead of the Pyracantha; a coarse Plum instead of the pretty little Chinese Plum; a Hawthorn instead of a Medlar.—ED.]

Even the Acacia hispida (Rose Acacia) you make so much of can only be propagated freely by grafting on the common sort. As to the seedlings you are promised true from America, I can only say I should like to see them. [The Rose Acacia is naturally and properly increased by division—a far easier and better way than grafting on another tree. And there is another way—by seeds. You shall see naturally raised plants of this!—ED.]

I certainly did not consider Mr. Scrase-Dickins' evidence showed any practical knowledge of the matter, and, therefore, did not particularly allude to it. He should have given a little more information about his Rhododendrons, as to age, number, soil, and sorts, and how suckers were allowed to prevail to such an injurious extent if he keeps a gardener. We could then have judged perhaps if he had reasonable cause for such severe strictures. Although there are many thousands of grafted Rhododendrons here, both standard and dwarf, from 1 foot to 20 feet high, I have no trouble with suckers, nor would anyone else have with very little care and circumspection, presuming, of course, the grafting was properly done. ["Practical knowledge of the matter!" Big words, Mr. Rogers, and far too often used! We have to deal with facts, and very ugly facts, which Mr. Scrase-Dickins told of. There are many places in England where there are miles of Rhododendrons tangled together or with other bushes. Does Mr. Rogers expect a man to look for suckers among these? Mr. Rogers is quite wrong in saying that grafting is the only method by which they may be increased. He has only to go to the nursery we named before to see many of the choicest Rhododendrons layered, and the thing is only beginning.—ED.]

Some variegated trees and shrubs are naturally more tender and short-lived than the original type. This is undisputed, I should think; but whilst grafting is the only method by which they may be perpetuated, it is unfair to argue that grafting is unnecessary and destructive.—W. H. ROGERS, Red Lodge Nursery, Southampton.

—How grafting is to be banished I quite fail to see, and none of the writers against it have shown us any feasible way out. [Certainly they have—by layering, cuttings, seeds, or division, as the case may demand.—ED.]

Plant and tree propagation is no new practice, and I take it that, generally speaking, the best methods have been gradually arrived at, but as finality is never reached we must still be open to learn. [And so we are very gradually arriving at trees on their own roots, and Mr. Smith is the only nur-

serymen from whom we could get the double Chinese Plum on its own roots.—ED.]

I demur to the proposition that the gardens of the future are to be deprived of the distinct aspects of weeping trees (as at present understood) because they do not happen to possess a cliff on the top of which to plant them. No doubt most weeping trees could be had upon their own roots, and in the case of some it would not be a tedious process. But taking Ash, Oak, and Beech, the process would be tedious indeed, and if they are to be, during the process of manufacture, tied up to stakes until they have grown tall enough for the planter, this makes the whole business appear absurd, for if the trees of the future are to be naturally grown they must not be tied up at all, and as in all but a few cases weeping trees are not weeping trees at all, but prostrate trees, advantage of which habit has been taken to make weeping trees of them by grafting them standard high, and as Mr. Temple says that even the very advanced landscape men of America must have them on stems—the stems of their own—the staking necessary to this is merely an effort to reach the same point by a more round about road. I can see in my mind's eye many positions in which the natural characteristics of an own-root and naturally-grown weeping Elm or Ash would show to advantage, and at the same time I can understand also that on a circumscribed lawn an own-root weeping Ash under which the owner desired to sit would be anything but a "joy for ever." Then, as to raising coloured-leaved trees from seed, the less said about that the better. The owner of the Golden Yews, I daresay, forgot to mention how many were lost between their first appearance above ground and the rest being a foot high. [Excellent stocks of variegated seedling evergreen trees are in some nurseries. Even beautiful plants of the Golden Irish Yew from seed are now to be seen at Knap Hill! They will be layered, too.—ED.]

Purple Beech comes into the same category. You certainly get a fair percentage of coloured forms from seeds, but they are a mongrel lot—wanting in stamina—and many of which die during the first years of their lives; the rest are not satisfactory, either poor in growth or losing their colour early in the season or else not taking it on until quite late. This statement will be met with the remark that variety is charming; so it is; but where a purple Beech is required you will always have to get a grafted tree; and so with many other things.

It is quite beside the question at issue to say, Why not graft Currants, Gooseberries, &c.? They are often grafted, but the reason why the practice, in their case, is not universal is because they can be readily raised from cuttings. Only a few days ago I heard the writer, who says the cruellest things about the whole practice, going quite into ecstasies over a beautiful weeping Sophora japonica, albeit it was grafted.—T. SMITH, Newry. [And a very poor object this generally is, and not a credit to any process of propagation; whereas we notice the naturally raised tree growing strongly.—ED.]

* * Mr. T. Smith, who really knows many things, begs the general question of the great evils wrought by grafting on our many flowering trees and shrubs by dwelling on the smaller matter of weeping trees. Why is he silent about the facts we put before him? Mr. T. Smith, happy over a lugubrious weeping Beech, does not throw light on the state of the millions of beautiful named Rhododendrons sent out to struggle, and in the end to die with a vigorous enemy at their hearts, nor the rarity of many beautiful flowering shrubs in our gardens like the Bush Almond; nor the ill-health and gradual decay of such lovely things as the double Peaches, owing to this unfortunate practice of grafting and budding. In this recent discussion we have kept the question of fruit trees apart, for while there is in Nature, and now and then in gardens, a chance of seeing a tree on its own roots and making a comparison with grafted ones of the same, it was impossible to do this in the case of most fine kinds of fruit trees. When we planted an orchard some years ago we could not get a Ribston Pippin on its own roots anywhere, though everyone we spoke to about it was ready to laugh at the wish as ridiculous!—ED.]

TREES AND SHRUBS.

THE SYCAMORE.

(ACER PSEUDO-PLATANUS.)

WHEN all its merits are justly weighed, the common Sycamore stands in the first rank of forest trees. Excepting the Oak, the timber of no other tree is, in this country at least, of equal value with that of the Sycamore, while as an ornamental subject, the cloudy masses, rising one above the other to a great height, of dark, olive-coloured leaves are very pleasing.

The trunk attains an immense size, frequently from 20 feet to 30 feet in girth, while the far-spreading branches cover a diameter of ground equalling the tree's height. Many notable examples of the Sycamore might be pointed out, one giant specimen at Gwydyr Castle, in North Wales, which I measured lately, being fully 90 feet in height, and with a well-rounded sound

try. I am now, too, fully convinced that no other tree for hedgerow or field purposes so fully repays the damage it occasions to fences and the surrounding ground as the Sycamore, and as an example of the value of single grown trees, I may state that only a short time ago we felled on one farm fifty of these trees, which together realised close on £100. No other tree with which I am acquainted, when placed under similar circumstances, would have been equally remunerative, or, at the same time, have occasioned less damage to the surrounding crops.

Clean, firm, and fine grained, describe well the quality of the wood, which, together with being easily worked and susceptible of a high polish, renders it of special value to the turner, sculptor and cabinet-maker. As regards choice of soil, the Sycamore can hardly be said to be fastidious, thriving as it does well in that of very different qualities if not overcharged with excessive moisture. Good deep loam would

dark sombre green of the common kind. It does not, of course, come true from seed. I hear it called the Corstorphine Plane, but that may be only a local name. None of these are large yet. The old Sycamores are all more or less decaying. From the one in the foreground large branches have at different times been broken, and from the wounds decay has so far spread that you can descend right into the bole of the tree. As the situation was exposed and the soil not specially good, they are not particularly large trees, not nearly so large as some further down the strath in the rich soil and shelter at Castle Menzies. At 3 feet from the ground the one in the foreground is 15 feet and the other 14 feet in circumference. The photograph was taken during early spring in order to show the character of the branching. The old monastery garden now forms a part of Taymouth Castle Gardens, or rather of its shrubbery. The gardener, Mr. Adam Young, is most enthusiastic in doing everything that is possible to preserve what is noteworthy about the old place. It would be very interesting if we could fix the date when these trees were planted. The



Sycamore trees in Taymouth Castle Gardens. Engraved for THE GARDEN from a photograph sent by the Rev. J. Mackenzie, Kenmore, Aberfeldy.

stem, which girths 14 feet 9 inches at 3 feet, and 14 feet at 5 feet from ground level, the diameter of branch-spread being 81 feet. Of the variegated-leaved Sycamore, Cambria can boast of possessing, if not the largest in the country, certainly two very distinct and interesting specimens of the tree outside the grounds of the North Wales University College, and the other on the hillside between Llanfylllyn and Llanwddyn, on Sir Watkin Williams Wynn's property. Then there is a most distinct and ornamental variety, in which the undersides of the leaves are of a bright purple hue, this showing off to great advantage when the foliage is ruffled by the wind, alternately appearing clothed in purple and light fulvous green. Of this variety there is a fast-growing, though small tree in the grounds near Holwood House.

Sycamore timber is of great value at present, fair-sized, sound trees selling at from 2s. to 2s. 6d. per foot, a price not reached by any other commonly grown timber tree in this coun-

seem to suit it, but it thrives on poor gravelly soils and in exposed situations.

A. D. WEBSTER.

For the following interesting note on the old Sycamore trees forming the subject of the annexed illustration we are indebted to the Rev. J. B. Mackenzie, The Manse, Kenmore, Aberfeldy:—

These Sycamore trees are two of a row of four which stand along what was formerly the western boundary of the garden of the monastery, on the island of Inchaidan, close at hand. There also remain at irregular intervals nearly a dozen of those which were planted along the southern boundary. They were evidently planted for shelter, as on these sides it was exposed to the storms from Loch Tay. The monastery garden was on the mainland, immediately opposite the island on which stood the buildings. They are Sycamores, but in Scotland we generally call these Planes, although in England I believe you restrict the name to the oriental variety. We also grow a yellow-leaved variety of the Sycamore, which contrasts beautifully with the

monastery garden, in its latest form, probably dates from 1124-25, when the old Culdee house of St. Aidan was transformed by Alexander I. into a monastery of canons-regular of the order of St. Augustine, the monks coming from St. Oswald's Church, in Yorkshire. Neither could they have been planted later than the time of Sir Colin Campbell, "the black Knight of Rhodes," who died in 1480. It would, however, be trespassing too much on the patience of your readers, who will generally be more interested in gardening than in antiquarian details, to go over the evidence which has sufficed to convince me that they were planted about the beginning of the thirteenth century. What details can your readers give of the probable age of the Sycamore in other localities? As they stand only two or three hundred yards from the walls of the monastery, which was then used as a fortress, and besieged and taken by Montrose in 1644, some of the deformities on the trunk look as if they were due to wounds received at that time.

A hybrid Mock Orange.—A very interesting hybrid *Philadelphus* lately bloomed at Nancy. It

was produced by crossing *P. microphyllus*, the beautiful dwarf species with deliciously fragrant flowers, which is a native of the mountains of Southern Colorado and New Mexico, with *P. coronarius*. The plant has been named *Philadelphus hybridus Lemoinei*, after its originator.

SUMMER PRUNING.

PRUNING is one of the most important points of garden practice. When judiciously pruned, a shrub or tree can be held almost at any size or changed to almost any form; and, besides this, a tree or shrub can be made much more productive of fruit and flowers. On the other hand, improper pruning will not only weaken the vigour of a plant, but may destroy all its beauty of outline, and at the same time hinder the production of flowers and of fruit. The shearing of a tree or shrub into some formal shape, as of a cone or hemisphere, may have a proper place in some styles of gardening; but, in general, it may be said that the clipping of trees or shrubs into any set form is radically wrong. I have seen many good collections of shrubs ruined because each one was cut into a shape to resemble all the rest. In this way all individuality is lost; whereas the object of pruning should be to develop whatever beauty each plant possesses on the lines of its natural growth. It is utterly impossible to secure any fine effects in large shrubberies where each individual is trimmed after the same pattern. Evidently the true way is to encourage each one to make the best of its natural graces, and then to arrange this infinite variety of form into a harmonious picture.

If we prune for the purpose of increasing the flowers of a shrub or tree, we must prune different species and varieties at different seasons of the year; but surplus wood and suckers can always be thinned out during the summer season, and wounds which are cut clean in midsummer will heal more quickly than those made in frosty weather. Maples, Birches, Yellow-woods and many other trees bleed copiously when their branches are cut in the spring, but they heal over more quickly if pruned while in full leaf. Again, shrubs which bloom on wood made the previous year, of which the early *Spiræas*, *Forsythias*, *Honeysuckles*, *Viburnums*, *Syringas*, *Philadelphus*, and *Deutzias* are examples, should receive their chief pruning soon after the flowers have fallen. This will encourage a growth of young wood with flower-buds for the following year. Of course when these shrubs are cut back in early spring before flowering the flower buds are sacrificed. On the other hand, shrubs like *Hydrangea paniculata*, *Desmodium penduliflorum*, *Hibiscus syriacus* and others, which flower on the new growth, bloom more abundantly when cut back severely in early spring. But even in this case the surplus wood should be thinned out during the summer.

With anything like an extensive collection of shrubs constant attention must be given to pruning during the whole growing season, and this is especially true where coarse-growing shrubs and those of delicate habit are planted together. If this is neglected the less robust plants will soon be smothered out by their vigorous neighbours. Many shrubs are pruned too much. If a healthy young plant is carefully pruned at the outset, allowed plenty of room, with all the cross branches cut away to admit light and air, and all the old flowering wood shortened in after bloom and the over-strong shoots stopped at midsummer, it will not only retain all its natural beauty, but this beauty will be increased, and it will be full of flowers the next year. After the branches of large shrubs have been thinned out, stronger shoots should be pinched back with the thumb and finger, for this will hasten the growth of flowering buds. Many trees and shrubs can be made to produce flowers and fruit at a smaller size than if they were left to themselves or pruned only in the winter or spring. This summer pinching also helps to ripen up the wood, and leaves it in good condition to withstand the cold. I have known trees which were tender, when left to grow naturally, endure our winters fairly well when the wood had been properly stopped by

pinching it in summer. This is especially true in wet seasons, when the branches often continue to grow until the frost kills them. Apples, Peaches, Plums, Filberts, and many other trees can be made to bear when quite small if the new growth is stopped once or twice in the summer. I now have Peach trees 5 feet or 6 feet high which are loaded with fruit, the result of pinching back in the summer. While trees are growing vigorously the flower-buds do not form well, but by this summer pinching the flow of sap is checked and the buds are developed. Many plants also ripen their fruit better when the strong shoots above the fruit have been stopped. Young trees can be easily trained with very little use of the knife when they are taken in time, the surplus buds rubbed off from the lateral branches and the branches properly pinched back. In short, summer pruning is useful and indispensable for the removal of superfluous branches in the middle of the tree or shrub, and for the shortening-in of all over-vigorous branches and such as interfere with the native symmetry of the tree; and by thinning out the weak and misplaced branches additional nourishment is supplied to those that remain. — JACKSON DAWSON, in *Garden and Forest*.

THE ACACIAS.

AMONGST these are several of the most ornamental trees with which our woodlands have ever been enriched. When in full flower a fully developed specimen of the False Acacia (*Robinia Pseudacacia*) has a most distinct and pleasing appearance, the prettily divided sea-green foliage and long racemes of pure white or slightly tinged with yellow flowers, combined with the majestic appearance presented by a well-grown and healthy tree, imparting to the general surroundings an air of beauty that could hardly be otherwise obtained. In the southern English counties at least the False Acacia is a tree of very rapid growth, it being not at all uncommon for young and healthy specimens to add 3 feet or 4 feet to their height for a dozen years at least. Some of the trees on the Holmwood property have reached giant proportions, one in particular standing 78 feet in height and with a stem girth at 3 feet up of 14 feet 10 inches, and not a hundred yards from this tree is growing another of almost equal proportions, the stem girthing 11 feet 5 inches and the tree containing 118 feet of wood. Such trees as these when in full flower are very effective, many of the branches being weighed down with the quantity of bloom; indeed, last season I saw several large branches snapped asunder by the weight of flowers. A rugged grandeur which one rarely sees in deciduous hardwoods is presented by the rough and unequally furrowed bark of this Acacia, trees of only thirty years' growth having the appearance of centuries, so rugged and uneven of surface is the bark.

The climate and soil of Kent, as also of a few other of the southern counties, would seem to suit the Acacia, for there it flourishes in a way that is envied by many a resident in the northern parts of Great Britain. I hardly think the Acacia is difficult to suit with soil, for here the largest trees are growing on a light loam, overtopping beds of rough gravel. Of the common Acacia or Locust Tree there are fully a score of varieties, the following being a few of the most distinct and desirable:—

R. PSEUDACACIA PYRAMIDALIS, which is, so far as habit of growth is concerned, a counterpart of the Lombardy Poplar.

R. PSEUDACACIA DECAISNEANA, is, perhaps, the best known and most widely cultivated of any of the forms; it is also one of the most distinct and pretty, the flowers being of a deep rose.

R. PSEUDACACIA CRISPA has curled leaves. It is also known as the Parasol Acacia, and is of remarkably dense growth.

R. PSEUDACACIA DISSECTA is an interesting variety, in which the leaflets are very deeply cut or incised. There are variegated forms, one having the leaves streaked with a washed-out yellow and another with white.

A collection of the various kinds of the Locust Tree is of great interest, but unless under particular circumstances and as a means of identity, a selection of the more distinct is preferable. The typical plant and the variety *Decaisneana*, and also *Bessoniana*, with which I am much pleased, are by far the best for general ornamental planting, but where sufficient space can be afforded and inclination so determines, several other varieties may be included. A. D. WEBSTER.

A NEW RACE OF LILACS.

THERE may be found in some gardens still a very old variety of the common Lilac under the name of *Syringa azurea plena*. I do not know the origin of this plant. It produces small panicles of clear-coloured flowers, in each of which there are a number of corollas arranged one within the other. It is a teratological curiosity, but as an ornamental plant quite destitute of value, as the rare flowers are quite hidden by the foliage. This variety, as the flowers have no stamens, and the pistils are either abortive or so hidden among the numerous corolla-lobes as to be beyond the reach of insects, does not produce seeds naturally. But it will sometimes seed with the aid of artificial fertilisation; and seeds secured in this way produced the first of the double-flowered Lilacs introduced during the last few years.

It is eighteen years since this plant, artificially fertilised in my nursery with pollen of various Lilacs, bore a few seeds, which afterwards germinated. Some of the best varieties of *Syringa vulgaris*, such as *Ville de Troyes*, *sanguinea*, &c., were selected as pollen-parents in this experiment, and the pollen of *Syringa oblata*, a species remarkable for its early flowers and for the brilliant colouring of its foliage in autumn, was also used. The characters of this species were transmitted to one of the seedlings derived from this cross. This was first sold under the name of *Syringa hybrida hyacinthiflora plena*. The term "hybrida," which is found still in the catalogue of the Maison Lemoine, was used to show that this plant is a true hybrid between two species of *Syringa*.

SYRINGA HYBRIDA HYACINTHIFLORA is already out of flower, although the flowers on most of our Lilacs are only just opening; and in autumn it is exceedingly ornamental with its brilliant red foliage. The panicles of flowers are large enough, although the corolla lobes of the double flowers are narrow and reflexed. But the production of this plant was a step in the right direction.

The other seedlings from this first crop of seed showed no trace of the blood of *S. oblata*, but there were some of them which were handsomer than *S. hyacinthiflora plena*. The best plant of this set was sent out under the name of *S. vulgaris Lemoinei*. The thyrsus of this plant is 8 inches long, and covered with lilac-blue double flowers, with numerous imbricated corolla lobes. A number of other good varieties were in the set differing from *S. vulgaris Lemoinei* in the shape of the flowers, in their colour, in the colour of the flower-buds, or in the shape and size of the thyrsus. These varieties are *Renoncule*, *Rubella Plena*, *Mathieu de Dombasle*, and *Le Gaulois*. An attempt was made as soon as these different varieties flowered to get seeds from them, and the old *S. azurea plena* was discarded as a seed-bearer. The best single-flowered varieties with flowers of different shapes and colours were used to cross with the new double-flowered race, and pollen from the flowers of *S. chinensis* was even tried; but this last experiment produced no results. A new set of seedlings was obtained from the second cross, and among them were some very remarkable and beautiful plants. From this sowing came *Alphonse Lavallée*, *Michel*

Buchner, President Grévy, Pyramidal, M. Maxime Cornu, &c. Here we have, in addition to the form and colour of the flower, remarkable variations. The corolla lobes in one variety are round and flat, resembling a Ranunculus; they form in another a globular head, with the lobes all incurved; in another they are all reflexed, and in another they are crumpled.

I will not give now a detailed description of each of these varieties, and it need only be said that we are constantly experimenting with double-flowered Lilacs, and that each spring-time sees a new set of flowers produced, with forms and colours entirely unknown before. Nearly all the shades of colour found in the flowers of single Lilacs have been produced already in this new race. Shades of blue are represented by A. Lavallée, Michel Buchner, President Grévy and Léon Simon. The darkest reds appear in Comte Horace de Choiseul and La Tour d'Auvergne; a delicate rose in Virginité; and we have now obtained a variety with large, pure blue flowers.—V. LEMOINE, *Nancy*, in *Garden and Forest*.

CHRYSANTHEMUMS.

E. MOLYNEUX.

RIPENING THE WOOD.

THE perfect ripening of the wood of Chrysanthemums which is to produce exhibition blooms is a subject little understood by those who are taking up the culture of these plants for the first time. Without maturation of the woody parts of the stems perfect blooms cannot be obtained. The incurved section is more influenced by the proper or improper maturation of the growth than any other section of the whole family, owing to the different construction of the blooms. There is a great difference between blooms which are the result of properly matured plants and those not so. This was well exemplified last season by the number of ill-formed blooms to be seen—the result of a wet season and non-maturation of the growth. Last season the blooms of the incurved section generally lacked the two essential points, viz., depth and solidity, which go to make up a perfect bloom. The object of all beginners should be to aim at obtaining these two points. Many people consider that if the plants throughout the summer season of growth are exceptionally stout in the stems, having also large, gross, green-looking leaves, they are certain to succeed in obtaining blooms of the highest possible quality. There never was a greater mistake. Plants of this class often produce only an apology for a bloom which is sure to bring disappointment—my object being to prevent this taking place by timely warning of the evils incurred in faulty methods of culture. When exhibition is the main object the cultivator has in view, the test of production is more difficult, as there are many points which are necessary in order to gain a leading position. The form the flower partakes, the breadth of its petals, the colour of the same, the depth of the blooms, the size and smoothness which each bloom develops, and lastly the freshness, or the want of it, are important matters. Many disappointments have been incurred by over-estimation of the flowers at home. Exhibiting teaches lessons to learners in cultivating Chrysanthemums which cannot be taught so perfectly in any other manner. Disappointment in one's own blooms often does, or ought to, set the cultivator thinking how to remedy the evil and improve the prospects of future combat. An erroneous idea prevails in some quarters as to the correct meaning of ripened wood. Wood-ripening does not consist in merely hardening the wood, but also in storing it with nutriment for the blooms. If the ripening or maturation is forced, so to speak, by drought or in other ways, such treatment contracts the sap vessels unduly, impeding a free flow of nourishment for the blooms at a critical time. This is what may be termed over-ripening. The wood must be matured by natural means. Sun-heat is the most essential point to consider in the proper ripening of the wood, and without its aid it is not possible to achieve the object named. In some sea-

sons and localities there may be too much of it, and in others not enough. The main point then is to know how to benefit by what we do get, and reduce as much as possible the injurious effects of having too much. There are two kinds of localities which have their seasons, so to speak. Both are favourable to success in certain seasons, but in opposite directions. First of these are the low-lying districts, which are especially favourable to successful results during a dry and hot season. Heavy night dews greatly assist the cultivator who resides in a low-lying locality. Chrysanthemums are moisture-loving plants, both at the roots and also about the foliage. But when the season is a wet one and there is an absence of solar warmth, then the grower who resides in a low-lying district is at a disadvantage. Blooms produced in such localities as that described are remarkable for the breadth of the petals, and prove that a somewhat damp atmosphere is favourable to this end. But it is not necessary that the district should be one attended with a great rainfall, so long as there is humidity in the air. The other class of cultivator is he who resides in high-lying and consequently dry districts, and who is heavily handicapped in a dry, scorching summer such as that of 1887. High and dry localities predispose to rather small, but narrow petals. One of the greatest troubles a grower in a high-lying district has to contend with in a dry season is the premature bud-formation. Where the locality is high, the air, although much rain may be registered, is drier than in the lowlands; it is this dry air which causes early bud-formation, about which growers in the north of England know nothing of as compared to the difficulties experienced by their brethren in the southern counties. This premature bud-formation renders the "taking" of the buds a hazardous matter. The proper time to "take" some varieties is altogether upset under such conditions. They form either too early or too late for producing the finest blooms.

CHRYSANTHEMUM CULTURE.

THE following paper read at the quarterly meeting of the Sheffield and West Riding Chrysanthemum Society by Mr. Tunnington, of Liverpool, will, we hope, be valuable as giving the views of a well-known north country grower on the cultivation of this flower:—

THE MAY BUD.—This bud, which all cultivators ought if possible to avoid, is due in most instances to not looking after the plants well between the time of flowering and the time the cuttings are ready for insertion. The stools should be carefully watered and kept near the glass in a cool structure where frost cannot reach them. This will induce the formation of strong cuttings. If striking is delayed until November or December for Japanese and a few late flowering incurved (the principal batch of incurved to be inserted during January and February), I maintain that cuttings derive more benefit by being left on the old plant during the dark days of December and the early part of January than they do when inserted in pots stood in cold frames. If the cuttings are placed in a gentle bottom heat and never allowed to flag, they will root quickly and grow away freely. "Why avoid the May bud?" If stopping is recommended, that is a natural question. The reason is simply this: it is not merely wasting time, but the formation of the bud practically paralyses the plant for a time. This bud forces the laterals from every leaf down the stem of the plants, and checks the plant more than the removal of a small portion of the top. The formation of the bud causes the stems to harden more than I consider good for the well-being of the plants in this early stage of their growth.

CHANGE OF CUTTINGS.—There is another point of importance which influences this matter and one that should not be lost sight of—viz., a change of cuttings. When plants are grown on what I call the high pressure system, for such it is, and blooms of exhibition quality are produced, the constitution of the plant is enfeebled, its whole energy being

concentrated into the building up of wood and the development of a fine bloom. The result is that cuttings are in many cases very sparingly produced, and often then they are only of the weakest description. A change of cuttings is a decided advantage, and the cuttings obtained should be from plants that are grown for ordinary decoration, grown well, but not on the exhibition principle. Plants grown for decoration generally yield plenty of cuttings, and those if well looked after, usually grow more strongly and make better plants during the season than the weak cuttings that have often to be depended upon from plants that have been grown strongly for some years.

EARLY STRIKING.—What advantage is gained by early striking? is a question well worth the consideration of every grower, and one that must be duly considered if we are to get the right sort of bud at the proper time. If early striking possesses advantages of such importance as some growers maintain, I have failed to perceive them; but on the other hand I have been able to note the disadvantages that attend such a course of treatment. By early striking the cuttings are "hanging about," and their small stems gradually become hard, the result of this treatment being only too visible in May by the production of a flower bud. If the cutting is a good one to commence with, and the plants produce a bud in May, it is due to a check in some stage of growth. Cuttings propagated from plants that have been too long under what I have termed the "high pressure system of cultivation," show this bud generally towards the middle of May. I may say in passing that my plants, or at any rate a portion of them, are showing this year earlier than they usually do—namely, the first week in June, and from what I have seen with other cultivators the same sort of early bud formation is common with all. We do not apprehend much difficulty from this, as our plants are in good condition at the roots. Although it checks the plants for a time, most probably these plants will not show another bud until August, or what I may term the proper time for securing the buds.

TAKING THE BUDS.—I do not care to take any before August 20, except a few that are known to be late varieties. The plan I adopt is to take the points out of the plants when I observe too early bud-formation taking place. In some cases three or four good breaks will be observed a few inches down the stem of the plants, and when this occurs I remove the top of the plants down to those breaks, which somewhat reduces the height of the plants. I have always topped some of the plants of the same family in May, and allowed others to grow in a natural way. This results in the buds being produced at different times. If cuttings have been rooted at the time advised, and grown on without a check, those not stopped will usually grow on one stem till the middle of July. This is what I term the July bud. This bud is of no use for producing flowers for exhibition. It is the growths that spring from the base of this bud that produce the best flowers. By topping some plants in May and allowing others to grow on in a natural way, a better chance of getting the right-timed bud may be had. It is not unusual to see blooms produced by this topping process of quite a different character on the same plant. The cultivator is sure to hit the mark with some of them. Some will show a bud early in July. Those should have their shoots removed by degrees. About the middle of the month the whole of these plants will require attention, as I have found this the best time to put them in what I will call their second journey. This is done by removing all the shoots that are not required to carry a flower; at the same time examine those that have not actually shown their buds. In some cases small growths will be showing from the axils of the leaves. The points of these laterals should be removed at once, as by so doing quite a fortnight will be saved. This is the time to throw all the vigour possible into the plant. If left to take its own course it would come too early on the one hand, or too late to run on to get a bud other than a terminal, which is useless in the north for exhibition purposes unless the season proved an

exceptionally fine one, whilst in the sunny south it would make a good bloom. If the plant is in good condition at the roots, and is well furnished with foliage, it will produce another crown bud, intermediate between the crown and the lateral. The leaves on the stem of this bud follow up so close to the flower that when expanded, the guard petals rest upon the foliage. This is the bud I always find produces the bloom possessing all the qualities a first-class flower should have, and such as will make the cultivator's heart rejoice when he comes to cut the flower. I have adopted this plan for years, and have always found it a good one. This especially applies to the incurved section; at the same time I may name some of the Japanese that can be got in at the proper time better by this stopping process—viz., R. Brocklebank, Meg Merrilies, Boule d'Or, Yellow Dragon, Val d'Andorre, Gloriosum, Belle Paule, Grandiflorum, Fair Maid of Guernsey, Baronne de Prailly, Triomphe de la Rue des Châlets, and many others. If those plants are pinched at intervals from the middle of May until the middle of June there will be less difficulty in securing a bud that will expand with freedom; if not topped they are liable to show too early, and only produce coarse hard-centred buds. If this bud should prove worthless the shoot on which it was produced is lost, as the next bud will be too late to be of any service. It has long been understood that Eve and Mabel Ward require topping to get them to produce a bud at the proper time, which is quite true, but I go further than this, and top some of each variety that we grow.

AUGUST BUDS.—Some plants will show buds too early in August. In this case a little judgment must be used. I allow the small growths that spring from the base of the bud to extend for a time. They must not, however, be allowed to grow to the extent of robbing the bud too much, or it will be lost, but pinch one part of a shoot one day and so on, just sufficient to ease the bud. I am now speaking of the top shoots. Those lower down the stem can be left to take care of themselves until you can perceive the bud swelling has attained the size of a large pea; even then do not remove all the shoots at once, but by degrees. There is another matter worth noticing in some of the strong growing Japanese varieties, especially when they show rather early. A strap leaf will appear on the stem of the bud; this leaf will sometimes grow to the extent of robbing the bud so much as to spoil it, therefore it should be gradually removed. As soon as I have secured the bud I apply to the points and buds of the plant (once or twice a week if the weather is hot) some tobacco powder which I think is a great preventive against the attack of yellow thrips, which are always lurking about at this time and often destroy the bud whilst in an embryo state. This cannot readily be perceived at the time, but it is too often the cause of deformed flowers when the blooms expand.

FEEDING THE PLANTS.—When last with you I omitted one important ingredient from the compost I advised you to use—viz., charcoal. That sold by nurserymen is excellent, but for years I have been in the habit of preparing my own from the refuse that remains after the Pea stakes are dressed, the branches that blow from trees and any prunings that I am able to collect; a 10-inch potful of this is used to each barrowful of soil. This keeps the soil open and in a healthy condition, an important matter if the plants are to root with freedom. If a sound compost is used very little feeding will be needed before the close of June; in fact, up to the 20th no feeding has been done. I then commence giving the plants weak liquid manure once a week from the farmyard.

TOP-DRESSING.—At the end of the first week in July I top-dress the plants by filling up the space that was left in the pots when the plants were placed in their flowering size. The material I use is the same that I advise for the first potting. Feeding by the aid of liquid should be discontinued for a fortnight or so until the roots take possession of the new soil. I again top-dress in September, and this time I have to exceed the limit of the pots. The pots are filled level full of soil, the same as I use

for potting. I then get about a bushel of fresh cow manure, and add to this a peck of night soil, or the same quantity of fowls' or pigeons' manure, and as much dry soil as will, when well mixed together, make the whole about the consistency of mortar. I then get two old bricklayers' trowels—large knives will do just as well—and commence to form a rim on the outer edge of the pot, and about an inch or so on the soil inside the pot. The rim will then be $1\frac{1}{2}$ inches or a little more through, and if it is made about $1\frac{1}{2}$ inches high, will hold sufficient water for the plant. It is not only necessary to enable the cultivator to water the plants properly, but it also acts as a good stimulant to them, for the water and autumn rains carry down to the roots the fertilising ingredients that it contains. Feeding by the aid of liquid from the farmyard should be carried out carefully and judiciously, as very often autumn rains keep the soil too wet for the well-being of the plants, and applications of liquid cannot be given them without adding to the evil over which we have no control. By rich top-dressings the plants are largely independent of the water pot. I think I told you in autumn last how valuable I had found the liquid from an undrained closet. This I use at intervals of two or three days. For instance, I water with liquid from the farm, then give clear water for two days, then resort to that from the closet, when the next application is required. Another good liquid, and one that the Chrysanthemum enjoys, is made from the following: A bushel of cow or sheep manure and one peck each of soot and lime, mixed together, tied up in a sack and placed in a hogshead of rain water. If the bag is squeezed and knocked about in the tank the liquid will be fit for use in about two days, and it should be diluted with three parts of water, increasing the quantity of liquid as it becomes necessary to fill up the tub. Hen and pigeon manure tied up in the same way make an excellent stimulant.

SOOT AND CHEMICAL MANURES.—During wet weather, when stimulants in the form of liquid cannot be administered without the risk of saturating the soil, soot may be sprinkled on the surface. It acts quickly, and imparts to the foliage a fine dark hue. I have tried the majority of artificial manures that are sold in the market. I apply these on the same principle as the soot during showery weather, and no doubt occasional applications of these patent manures, used with care, promote activity at the roots. At the same time I wish it to be understood that if the weather should be hot and dry instead of showery, I prefer using the liquids previously named, as they are of a cooler nature.

Sulphate of ammonia and nitrate of soda are very dangerous, and should be applied with considerable caution. Any plant that is late, or has been topped late, will be pushed forward quickly if a pinch is given on the surface during rainy weather—that is, if the cultivator has no better method of using it. I prefer putting a 6-inch potful into the hogshead when the other liquid is getting weak, and it is quite safe used in this manner. I continue using liquids until the blooms are cut, discontinuing only for a short time when the plants are first housed.

The tops of the pots will be found to be a complete network of white healthy roots to the last, but strong stimulants in the last stages of growth should not be given; in fact, in no stage of growth, as it is much better to apply them weak and more frequently, as the plants derive more benefit than from occasional strong doses, and there is no risk of injurious results following. My advice on feeding the Chrysanthemum is to keep on the safe side, for over-feeding will bring the plant to a standstill for a long time, a quantity of the lower foliage will fall, and it is a question if the cultivator can get the plants right again during the season.

SYRINGING.—Another matter I practise is syringing the plants three or four times a day during hot weather; in the morning about ten, and again at noon, and often twice afterwards, and I am certain that the plants enjoy this treatment, for they are impatient of the burning sun and hot, dry air, especially after a few dull days. The frequent

syringing prevents the plants showing signs of distress, which they would quickly do by the enormous evaporation taking place from their stems and leaves.

WOOD RIPENING.—I do not think this of much importance. If there is such a thing as wood ripening I should be glad to know how it is done. All I have found necessary is to let the sun and light reach the stems of the plants on all sides. If we are to place such importance on this ripening process, how do the trained plants that are grown about Liverpool produce such fine blooms when they are trained half-cone shape, the foliage completely covering the stems of the plants throughout the season? Yet those plants produce blooms of such excellence that would do good service on first-class stands. How does the wood ripening in this case come about? For my part I fail to see it. I have been convinced for a long time that the secret lies in taking the bud at the proper time and leaving the ripening to take care of itself.

SECURING THE PLANTS.—I advise one stake to be placed to each plant, the shoots to be slung to this and allowed to sway loose, and also a line of tar twine to be strained to posts (the height at which the line is to be placed can be judged according to the variety), higher in the middle of the row, and sloping down to each end. When the growths have reached 6 inches or 8 inches above the line they should all be tied at equal distances to it, which is much better than tying them to laths, as some cultivators recommend. If the shoots should grow to the extent of needing further support they should again be slung to the stake above the line. I find this simple way of securing the plants handy at the time of housing, as the line can be cut, and as all shoots are secured to the stakes the plants can be quickly moved.

MILDEW.—If mildew has attacked the plants, which is often the case at this time, they should be laid on the ground and thoroughly syringed on the under side of the foliage with the following mixture: A 3-inch potful of sulphur placed in a 4-gallon can of rain water, and two wineglasses full of lemon oil, or a piece of soft soap about the size of a Walnut. If the soap is boiled for ten minutes with about a quart of tobacco water so much the better.

HOUSING THE PLANTS.—In placing the plants in the house I select those most advanced and place them at one end, where shade can be given if the weather should be bright, and the late ones in a house where heat can be applied if it should be needed. When the plants are accustomed to their new quarters the whole should be fumigated with tobacco smoke, for it is very difficult to destroy green fly when they establish themselves in the base of the petals. I have observed the plants "sulk" after housing, owing to the loss of night dews to which they have been accustomed outside, so I give all the air possible, and syringe the plants two or three times a day according to the weather. Feeding is also stopped for a few days. It will be noticed that the plants come to a standstill for a short time. It is therefore best to keep the foliage damp, and to let them have pretty well their own way for a few days.

BLOOMS DAMPING.—This is a most perplexing thing, and one that will not be readily fathomed. I have often heard it attributed to over-feeding, but I fail to see how this comes about. Over-feeding practically paralyses the roots of the plants, and they cease to convey to the bloom the food necessary to develop it. This is often the cause of a bloom half expanding, and then refusing to fill up in the centre. I have for the purpose of over-feeding set plants apart for this purpose. The first effect is that the lower leaves curl and turn brown at the points, and in the end they decay and fall off. The flower will throw out a row or two of petals, but will never expand. If the damping evil is caused from the roots, how is it that on a plant with three or four flowers, one will damp and the others not? I attribute damping to the gases that are carried in the air in foggy and damp weather and which settle upon the petals. The evil is done when

two or three dull days are followed by the sun shining brightly for an hour or so. I have observed it is always after this kind of weather that we lose our flowers; rarely, if ever, have I experienced damping if the weather is at all frosty. No doubt some of you will have had experience in using stable manure. When used too fresh and highly charged with ammonia in a Peach house when the trees are in flower, the bloom is destroyed and not a fruit will set. Again, if used in a house where Adiantum Ferns are growing, if the house is closed all the young fronds will be destroyed in one night, and I do not see why the same sort of thing should not take place in the flowers of the Chrysanthemum. If sulphate of ammonia be sprinkled on the surface of the pot, and watered in, and the house closed, you will have the house reeking with ammonia, and this is no doubt one great cause of the evil, as the ammonia condensing on the petals of the flowers will be only too visible the first sunny day by holes being burnt in them. I am of opinion that if this damping results from the roots, the petals would be affected at one end or the other, and not in the middle. I think we shall have to look to atmospheric influences rather than blame the Chrysanthemum for being such a gluttonous plant as to destroy its own flower through over-feeding. To illustrate what I have said regarding atmospheric influences, I once had a number of plants fully expanded in an outhouse; the door was opened in a dense fog to show some visitors the flowers, although only for a short time; the result was in a few days all the flowers at the front were lost. It has, therefore, since been my practice to give no more air than is necessary during damp weather, and to have just sufficient heat in the pipes to keep the air in circulation—the temperature between 40° and 50°; 5° or 10° more may be given for a short time to bring up those plants that are late, but it is not well to subject the opening flowers to too much heat for long, or it will spoil the colour and cause the petals to reflex. Plants that have the flowers fully expanded, and it is desirable to keep the latter for a short time, may with safety be placed in a dark dry out-house.

In conclusion, it is better to be a little early than late at show time, remembering that the blooms can be kept for a time either out or on the plants. I often see flowers staged at some northern shows before the centre of them is filled out, which greatly reduces the blooms in height and sadly militates against the exhibitor's chance of success.

MARAM, OR SEA MATWEED.

(PSAMMA ARENARIA.)

THREE years ago rather an interesting experiment was tried to fix the blowing and constantly shifting sand on the sea coast near Rhyl, in North Wales, by means of the above Grass. As I was greatly interested in what has now turned out to be a most successful experiment and recommended it with confidence on several occasions since, a note regarding the best way of proceeding with the work may be of use to some readers of THE GARDEN.

The Sea Matweed is a maritime Grass that is found in considerable quantity along the coast of Great Britain. It usually attains to from 2 feet to 2½ feet in height, much depending on the situation, particularly as regards shelter. The root-stock creeps widely, some specimens that have been followed up in the sand being of the amazing

length of 35 yards. It is, unfortunately, of no agricultural value, farm stock generally refusing it even when pressed by hunger, the stiff, almost woody, and innutritious stems generally rotting away from year to year on the ground where they grew. Amongst loose and drifting sand the running roots find what is most suitable for the welfare of the plant, and it is astonishing with what persistency they bind in an unusually short space of time these shifting hills of dust-dry sand.

In planting, the best way I have found is to



Foliage and keys of the Sycamore. (See p. 119.)

place the Grass in parallel lines 16 inches apart, and at a distance of 12 inches from plant to plant. Large masses of the Matweed may be carted to the planting ground and there divided into smaller pieces of say 6 inches diameter. A garden line is stretched along the ground, a notch 10 inches to 12 inches deep taken out, the Grass inserted therein and filled with sand, and afterwards firmly trodden. This simple process completes the planting, and usually no attention is required afterwards, unless it may be to replace some of the stocks which either by sub-dividing or a wrong system of planting have died out.

The value of this Grass for binding blowing sands is by no means of modern invention, for we find that in the reign of Queen Elizabeth an Act of Parliament was framed prohibiting persons from unduly destroying it, and so far as I know the Act still holds good. In Holland vast tracts of ground are held in position by means of this Grass, for not only does it prevent the surface from being swept away, but also by means of the long and widely spreading roots keeps the under surface in secure position. This latter is of vast importance where a bank or mound is wished to be preserved against the incursions of the sea.

It is perhaps a pity that the value of the Matweed is not better known for binding shifting sands, for that it might be in scores of cases used with the greatest advantage is evident to anyone who is acquainted with particular stretches of sea land along the coast of Great Britain.

A. D. WEBSTER.

FRUIT GARDEN.

W. COLEMAN.

THE RASPBERRY.

RASPBERRIES, like some other fruits this year, have not reached their usual standard of perfection. In some gardens, especially upon cold, heavy soils, the gross watery canes made last season, owing to lack of sunshine, did not ripen properly, and although we had a mild winter, a great number of the fruit-producing buds perished. The lethargic man who trusts more to Providence than to his own active exertions may have accepted this falling off in quality as well as quantity as a justly-merited visitation; whilst his neighbour, anxious to learn the why and the wherefore, will have been casting about for the cause in order that he may remedy the

defect. The English fruit grower, we know, is heavily handicapped by a series of bad seasons, and the most intelligent cultivator not unfrequently experiences a great falling off in punnets; but when the Raspberry, which grows wild in our copses and pleasure grounds, fails him, we are justified in inquiring if this wholesome and delicious fruit is as well cultivated as it might be. Strawberries, with which we have made such rapid progress, are now grown on the three years' system; but, market gardens excepted, in how many places do we find the Raspberry languishing and dying out upon the

same piece of ground for twenty or thirty years? If I might venture to express an opinion, I should say this poisoning the ground with manure, this leaving the old stools alone because the situation once suited them, if inquired into, would be found to be the cause of nine-tenths of the failures of the year of grace 1889. So confident indeed am I of cold, inert, Raspberry-sick soil being at the bottom of the mischief, that I boldly condemn the private grower's system, and, having pointed out the cause, have little difficulty in suggesting a remedy. The Raspberry crop of the current year is now over, and we have yet two to three months to run before the best time for making fresh plantations arrives. Let those, then, who have very old and unprofitable stools, struggling with *Convolvulus* and other abominations, fix upon fresh sites for a fresh start. If the ground is clean, well drained, and in good heart, deep cultivation at the present time will be equal to a summer fallow. If light and rich and naturally moist, it may lie undisturbed until September, when a thorough dressing of rotten manure may be forked in, and it will be ready for the young canes in October. If cold, wet, and heavy, its preparation must be conducted with much greater care. The ground, in the first place, must be well drained and deeply broken up to let in light and air. If the bottom spit is heavy it must not be brought to the surface, neither must it be worked in wet weather; same time it must be broken up, pulverised, and corrected by the addition of light rich substances which will keep it open and feed the descending roots for the next four or five years. It is hardly necessary to name the materials which may be used for correcting and enriching heavy soils, as the Raspberry will grow in almost any fresh porous material through which water passes freely, and yet never becomes dry. The preparation of this material in many places may occupy much time; in others it may be ready to the hand, but in any case it should be prepared in plenty before the day of planting arrives. Assuming, then, that burnt refuse met with in every well-managed garden is plentiful, this may be worked very freely into the subsoil; also, it may form the basis of the compost, which may be brought together by degrees. Old turf is an important factor, and the same may be said of rotten leaf mould, peat, old lime rubble, dry pulverised road scrapings, parings from the sides of walks, refuse from the potting bench, and light stable manure. If these, or as many of them as can be secured, are placed in layers, one above another, and carefully turned over until thoroughly incorporated, the compost may be wheeled out when dry and forked in, and not only will the Raspberries on this once heavy ground produce fine fruit and canes, but the texture will be improved for a great number of years.

PLANTING, I have said, should be performed in October, the mode of arranging the rows of young canes being regulated by the aspect and the nature of the ground. The situation being warm and sheltered and the subsoil suitable, several rows from 4 feet to 5 feet apart may succeed each other, 4 feet from stool to stool being allowed in the rows. Planting in this case may be performed on the level, but on cooler soils single or double rows running from north to south answer best, and overcrowding being fatal to ripening, good single canes 2 feet apart and a little above the level should run in single file throughout the length of the rows. When planted *en bloc* the centre of each stool should be marked by a neat rustic stake from 3 feet to 4 feet in height, and to each of these three good canes should be apportioned in a triangular form

not less than 12 inches apart. Single rows also may be trained to stakes, but the neatest and most permanent method will be found in the formation of a V-shaped trellis, 4 feet in height and 3 feet across near the top of the posts. This trellis is easily formed by driving opposite each other stout rustic Larch stakes 6 feet apart and at a certain angle along each side of the row, and straining two wires from end to end, the first say 18 inches from the ground, the second the same distance above it. In each case the stakes or trellis should be fixed before the canes are lifted, and plenty of base or underground buds being essential, these should be carefully preserved from injury. As the Raspberry is not a deep-rooting plant, the bulk of the rich, light compost should be kept within a foot or so of the surface, and a good start being half the victory, a liberal share should be placed about the roots. When planted, water home, mulch well, and defer shortening back or cutting down until the buds begin to swell in the spring. Very strong canes may then be left a foot or 18 inches in length, but the fruit the first year being of so little value, the best result follows cutting down to the ground and allowing one clear season for the formation of stout fruiting canes. The after-management is so simple that I need not touch upon the mode or various modes of training and pruning, if cutting out the old canes annually can be called pruning. And yet this removal of the old canes is a very important matter, especially upon cold soils and shady borders. Pruning, indeed, or thinning should be commenced very early in the summer, first by the removal of all the weakest canes, reducing them to four or five to each stool, and so placed that the sun and air may play freely about the ripening fruit. These canes in due course should be loosely secured by ties to prevent their being twisted or injured by wind and squalls of rain, and in due course pinched to concentrate the sap in the lower buds, as each of these in course of time will be shortened back to 4 feet. The most important part, however, of the pruner's work is a thorough clearance of all the old canes the moment they have given the last of their fruit, for if this be not done, sun and light cannot get into the borders, when the evils of which I complained at the outset, viz., unripe canes and imperfect buds, will be intensified, if not actually produced, especially in cold unfavourable seasons.

Varieties of this delicious and invaluable fruit, fortunately, are not numerous, but they are steadily increasing, and, if I mistake not, two varieties of recent introduction will speedily attain prominent places in the front rank. These are Carter's Prolific No. 2 and Bunyard's Superlative, two profuse cropping Raspberries of large size, brilliant colour, exquisite flavour, and persistent bearing properties in wet or dry seasons. The first I have grown and fruited; the second I have seen and tasted, and can strongly recommend them for the dessert, for cooking, or preserving, or the score of purposes for which Raspberries are now used in every thrifty household.

Older varieties of well tested and highly approved merits include Baumforth's Seedling, Belle de Fontenay, Carter's Prolific No. 1, Fastolf, Cutbush's Prince of Wales, Red Antwerp. Several autumn-bearing varieties are grown, but all may be made autumn bearers by cutting down the canes close to the ground early in the spring, say the end of February. Belle de Fontenay, October Red, or Merveille de Quatre Saisons Rouge, and Rivers' Large-fruited Monthly include the cream of the autumn

bearers, than which none, perhaps, is better than the last, as it is a perpetual bearer and the quality is excellent.

APPLES ON DWARF TREES.

THERE can be no doubt but that some kinds of Apples are better adapted to restricted forms of growth than others, and perhaps, in this year of failure, it may interest many of the readers of THE GARDEN to hear of kinds that are carrying good crops on dwarf trees. I think it may be accepted as a general rule that such kinds of Apples as show a disposition to make very strong growth are not adapted to the restrictive modes of training, and that nothing will induce early fruitfulness in them like letting their branches grow freely and extending to nearly their entire length without any stopping. I allude especially to kinds like Warner's King and Blenheim Orange; but even these fruit freely enough after the first few years, and as I like stiff-branched trees that will not sway with the wind, I find that even if allowed to grow to a good length and then kept closely spurred in they soon get very firm, and that large Apples do not readily blow off. I may mention that although we have had some good stiff breezes in July, very few sound Apples have been blown off. Those who live in exposed places will find that it will well repay them to shorten the branches of their Apple trees a little every year; it will make the body of the tree fill up with fruitful spurs, and after a gale so many Apples will not be blown off. From among the kinds of Apples that strike me most as being exceptionally well cropped this year, I am induced to select the following, and have no hesitation in placing first on the list—

LORD SUFFIELD.—This is a magnificent Apple in this part of the country, and never fails to carry some fruit, and nearly every year a full crop. Last year the trees were lightly cropped, but this season every tree is loaded with fruit of excellent colour and quality. This sort ought to be planted by thousands for market supply.

KESWICK CODLIN is even more thickly cropped, but is not equal to Lord Suffield. It produces quantity, but the quality will not command top price.

HAWTHORNDEN (New and Old) may be set down in pretty much the same relationship to each other. The new variety is a better Apple in every respect, and although they are both bearing well, the new sort will be most profitable, and, by reason of better keeping qualities, most useful.

CELLINI PIPPIN is a most useful sort and well adapted for small trees, making but moderate growth that bears freely when the trees are young.

EARLY JULIEN, as also Ecklinville and Stirling Castle, are capital Apples for garden culture, and are equally satisfactory under the same mode of culture.

WELLINGTON is bearing freely this year, and is unquestionably one of the very best of late-keeping Apples, whether new or old.

Of dessert kinds, the following are especially good: Summer Golden Pippin, King of the Pippins, Cockle Pippin, Cox's Orange Pippin, Red Quarrenden, a favourite market Apple. The trees of Blenheim Orange produce very fine fruit, but they do not bear so freely as the above-mentioned, and I think it is better adapted for orchard than for garden culture. We have many other kinds doing well, but for general excellence the above-mentioned are worthy of being included in the most select collections where Apples in quantity are needed. J. GROOM.

Gosport.

Black Hamburg Grapes losing colour.—I have here under my charge a lean-to vinery with the border quite outside. In it there are about eighty bunches of Black Hamburg Grapes, ripe a week ago, and now they are losing their colour. What can I do to stop this, for they are fine bunches, and I wish them to hang about two months to use them by degrees? I have discontinued fire heat, and I keep them as cool as possible. There are no

plants in the house, so that it is quite dry and airy. I have put fish netting on the glass to shade it, but this does not seem to have any effect, and I do not want to bottle them. The Grapes were well coloured at first. The horse droppings on the border I have not yet taken off. The foliage is not thick enough to shade all the bunches from the sun. The Vines are four years old.—NORTH FINCHLEY.

* * When black Grapes commence losing their colour in July, the best known methods of meeting this annoying difficulty are but imperfect in their operation. Powerful sun heat, too much light, lack or loss of foliage, and languid root action, one or all, may be conducive to loss of colour, and, as a matter of course, converse conditions must be produced by those who would find a remedy. Keep the house cool and airy, but not too dry, by withholding the sprinkling-can on bright days, especially during a continuance of this brilliant weather. Increase the shade by adding more nets, or by drawing light canvas over the roof through the day, but do not leave it on after nightfall. Also examine your borders, inside especially, and there I suspect you will find the seat of the mischief, as Grapes only a week ripe upon young Vines should not lose colour where water has been liberally administered. It is now too late to give a heavy watering, but the roots being very dry you may give a little to the surface-roots, and keep it in by increasing the mulching. Allow all laterals to grow and tie them down to the wires. But what have you been doing to have four-year-old Vines short of a dense canopy of foliage? as herein lies the secret of producing and keeping colour. Liberal feeding makes roots, roots make foliage, and foliage fresh, fleshy and free from spider forms the best of all shade for black Grapes in summer and autumn. If these hints enable you to lay your finger upon a defect in detail, make a note and avoid the fault next season. The roots of Vines producing summer Grapes should be thoroughly moist when the bunches are fit for cutting, when non-conducting covering may be heaped on abundantly. Every particle of trellis should be covered with fresh healthy leaves, which can always be secured by tying down and stopping, long or short, the first set of laterals.—W. C.

WORK IN FRUIT HOUSES.

PINES.

PLANTS of all varieties and sizes, from the earliest Queens down to the last potted suckers, will now be growing very freely, and the majority of them having filled their pots with roots, the use of water may be more liberal than earlier in the season. The only batch requiring extra care is that from which the earliest supply of fruit is to be obtained next May, and here even the pot-bound plants must have weak diluted liquid or guano water in plenty whenever watering is found to be necessary. Many Pine plants receive more water than is good for them, especially where constant dribbling is practised by those who think this is the proper mode of keeping the roots in condition. All plants should be looked over once a week, and each pot actually requiring water should receive sufficient to penetrate to the crocks, others, neither wet nor dry, being left over until the barrel is again taken round, when the full quantum may be given with the greatest advantage. Another important matter is the quality and temperature of the water, which in all cases where fruit is not approaching maturity should be of a slightly stimulating nature. Years ago stimulants and pure water were given to the plants alternately, but modern growers now dilute rather freely and trust more to one uniform strength at each watering. Early in the afternoon is the best time to water Pines, especially when the work has to be performed from the outside, and considering how thoroughly they enjoy brisk heat, the minimum temperature should never be less than 85°; whilst that given to plants in still hotter beds must be increased proportionately. The same remarks as to temperature apply to water used for syringing, as no one should think of syringing with water at 80° when the air temperature of the house may range

above 90°. Soft water free from lime is best, not only for Pines, but for plants of all kinds; but when this cannot be obtained, hard water can be greatly softened and improved by exposure to the atmosphere. Clear, but decidedly weak soot-water is invaluable both for watering and syringing purposes, and being so easily prepared, no Pine house should be without a supply in one of the cisterns. The daily measuring and mixing of soot is simply prohibitive, but by filling a peck bag once a week and submerging it in a tank containing, say, 100 gallons, the plants cannot be syringed without receiving a modicum of this mild fertiliser.

Fruiting houses from which the bulk of the summer Pines have been cut will now present an untidy appearance, but where small compartments are devoted to each batch, not only are the plants better grown, but a great deal of makeshift work is avoided. When English Pines paid their way the houses could not well be too large for market purposes, but those days have gone by, and private growers now hold all the stock in the country. Gluts to them to-day mean scarcity to-morrow; hence the advantage of small compartments for the different sections and varieties. Certain varieties do very well together as successions, but when old enough to fruit no one would think of intermixing Queens and Rothschilds with Jamaica if they could keep them separate. The last-named Pine is still one of the very best for winter use, and requiring but small pots, although more than the average head room upward, all growers requiring superior fruit not only in winter, but at any time, should keep up a stock of this variety.

Successions.—The main stock of successions intended for throwing up before next midsummer should now be in their fruiting pots, with every prospect of becoming thoroughly root-bound before partial rest is allowed them. The most forward will start without making a growth, another batch from which the finest summer fruit may be expected will make a growth before they throw up, and the latest, their house being very light and suitable, may be kept progressing all through the winter. Pines, however, must have an abundance of light, with heads nearly touching the glass; therefore those who cannot command this element must give up all thoughts of securing a short, stocky growth in winter.

Suckers may still be taken off summer fruiters, the best of all stools trained, potted at once, and plunged where they can have a bottom-heat of 90°. Others, again, potted some time back may be the better for a small shift, but unless they are well rooted nothing will be gained by intermediate potting late in the season. Where the soil suits Pines the one-shift system answers best, but otherwise the greatest danger attends giving more compost than they can fill with roots before the dark days of autumn. Turf for use through the autumn and spring should now be cut thin, rolled as for a lawn, and stacked safe from snow and rain, but where frost and fresh air can reach it.

POT STRAWBERRIES.

The cool showery weather by which July was characterised just suited newly laid runners, the whole of which in this neighbourhood have rooted without the aid of the watering-can. This saving of labour is a consideration, but it is trifling when compared with the superb quality of the young plants raised in a moist genial season, and so far kept going by the best of all stimulants, frequent thunder showers. Growth being so rapid, the majority of the plants will have been detached, and placed where they are to remain until the crowns are ripe in the autumn, and having escaped all checks from the process of potting, the crowns will be sitting on the hard surface, whilst the roots will be striking out in all directions from the centre. The latest plants may not be so far advanced, the larger sized pots used for these making some difference in the time of rooting, but they should be detached as soon as the roots feel the sides of the pots, when the whole batch can be arranged and placed under special management. Mildew and red spider having been so troublesome, especially

in old gardens, the pots should be well washed under any circumstances, and the plants dipped in sulphur water where the parents have been affected. A high plateau, open to sun and light and free from worms, suits Strawberries best, as the roots as well as the crowns have the favourable conditions for ripening when cold, sunless autumns are against them. Watering from this time forward, of course, is a very important operation, as Strawberries, from the beginning to the finish, should never feel the want of this element. The early batches in the smallest sized fruiting pots suffer least; consequently succeed best when partially pressed into a thick loose layer of coal ashes, through which worms do not often penetrate, whilst others occupying 6-inch pots do equally well on the hard floor with plenty of light, air, and moisture passing amongst them. Frequent changes of position being favourable to the growth of the plants, they may be placed moderately close to each other at first, and gradually extended as the foliage requires more room and the removal of weeds and runners becomes necessary. Having said pot plants should never feel the effects of drought, the quality of the water and the best time to apply it is the next matter for consideration. Soft water undoubtedly stands first, pond water second, and hard water last. But assuming that the best cannot be obtained, the inferior may be greatly improved by exposure to sun and air in open tanks, and then on no account should it be allowed to saturate the foliage, especially during the prevalence of drying winds and scorching days. The best time to water is immediately after the sun has lost its power, but unless the water is both soft and warm each plant should be carefully watered by hand in preference to the rough-and-ready method of hosing over the leaves. An occasional shower of soft and warm water after a hot day may serve a good end by cleansing the foliage, but incessant slushing and flooding, whilst giving one plant too much and its neighbour not half enough, are loose and unnecessary, as the vapour constantly rising from the most careful hand-watering will keep the foliage fresh and healthy no matter how parching the weather. The question as to the use or avoidance of stimulants having recently been discussed, I may say I incline to the belief that pot-bound plants should be regularly fed through August and September, and again from the thinning to the changing of colour of the fruit. Much, as a matter of course, depends upon the size of the pot and the quality of the compost, but where stiff calcareous loam, enriched and made pervious to water by bone dust and old mortar, is used, the advent of roots through the apertures should be the signal for applying mild stimulants. Weak diluted liquid from the drainage tanks, guano water, and soot water may be used alternately two or three times a week, or bags filled with guano and soot may be dropped into the liquid tank, when sufficient to tinge the plain water may be used every day.

When all the plants intended for pot culture have been disposed of, the thrifty grower will look ahead for a good supply of runners for another year. The plants or runners for this particular purpose, also for forming fruiting plantations, may be rooted in small pots, or, better still, upon small squares of stiff turf, laid Grass side downwards, between the rows.

CUCUMBERS.

Where several small houses or compartments are devoted to Cucumbers in winter and Melons in summer, a few seeds of Telegraph or some other favourite variety should be sown at short intervals for keeping up a supply of vigorous young plants ready for turning out as the Melons are disposed of. Plenty of top and bottom heat from fermenting material, an abundance of atmospheric moisture and compost somewhat lighter than that used in summer are the main factors, as Cucumbers must be grown clean and quick to be worth eating. If possible raise the young plants in a good frame or pit resting upon or filled with fermenting manure and leaves; keep them close to the glass, liberally watered and syringed, and shift into larger pots in preference to

allowing them to become root-bound and eaten up with red spider. Starvation being the stepping-stone to spider and disease, never allow plants to stand about if the pits are not ready for them, but throw away the oldest and look to the next batch which, no doubt, will beat them in a fortnight. The plants may be put out upon hills or ridges, in narrow pits, in single boxes, or in 12-inch glazed drain-pipes, placed over the bottom heat-pipes and partly filled with rough compost. The latter, it is hardly necessary for me to say, are everlasting wear, and offering such facilities for the escape of water after it has passed the roots, also for renovating and turning the fermenting beds, are preferable to ordinary pots where the pits are wide and deep enough to receive them. I have used 9-inch pipes resting upon good compost for the benefit of the roots when they reached it; but the larger sizes answer best, as the roots are less crowded, and there is less danger of burning after the beds have been renovated. The compost for autumn and winter plants cannot be too rough and open, such, for instance, as might be secured by chopping or breaking the turf into 3-inch cubes, rejecting the fine particles and adding its bulk of charcoal and rough lime rubble. As the Melons are cleared, thoroughly cleanse the pits and superstructure, place the tubes in sods over the bottom-heat pipes, but as far as possible from those which, in due time, will maintain the air temperature, and fill to within 9 inches of the top with rough compost. Introduce the first moiety of fermenting material, heaping it well round the tubes and plant when the compost is warm enough. Avoid crowding, the greatest bane to successful culture, and defer earthing until the plants commence bearing; then by degrees fill up the vacant space, as Cucumbers, unlike Melons, will stand any amount of earthing up the stems when bottom-heat is equal to their requirements. Plants put out in August and kept going by means of moist bottom-heat will not require an ounce of fuel before the middle or end of September; neither will they require feeding, as gross foliage made at the outset invariably suffers early in the autumn.

Old plants may still be cut over and renovated or rejuvenated, but they do not pay, especially where a series of small pits favour hard forcing, hard cropping, and quick removal when the quality of the fruit is found to be waning. Plants in pits and frames having had a good season so far will now be doing good service, and with care may be kept in bearing until July sown plants come into bearing in the houses. Thoroughly enjoying generous treatment, they should be pinched and manipulated at least three times a week, well syringed every afternoon when they do not require root-watering. From 3 to 4 p.m. is the best time to dress over the plants, when they should be syringed or well bathed with water at 85° or 90°, and shut up immediately. When tepid liquid is used, it should be carefully applied to the surface of the bed without wetting the foliage, air being given extra early the following morning. The frame space, however, being limited, supplies of liquid should neither be strong nor frequent, especially where sweet lumps of maiden turf are often packed amongst the vines, and the latter at the joints are pegged into them. Ventilate very freely through the early part of bright warm days, and aim at a temperature of 90° after closing. Where the fine-flavoured and hardy black-spined varieties are doing well and pleading for more space, the weather continuing good, the lights may be kept tilted on the south side and the vines allowed to scramble down the linings. Give water in abundance, at a temperature ranging from 80° to 90°, and throw off the lights occasionally when warm summer showers are falling. Smith's Frame or Lorraine and a very old variety called Cuthill's Black Spine are excellent summer Cucumbers.

WORK AMONGST HARDY FRUITS.

The recently published reports, if worth anything, show how uncertain and unsatisfactory is the fruit crop in all parts of the country, especially inland. Opinions vary as to the cause of perfect failure in one place and success in another, but no

one, I believe, disputes the fact that the Englishman's never-ending theme, the weather, has had something to do with it. Growers in the southern counties, whose opinions are worth listening to, think the spell of very hot weather we had in May forced the trees beyond their strength, but this was not our case, otherwise I should expect to see our north walls, upon which a keen north-east wind blew all through the spring, now covered with fruit, and our cold clay valleys smiling with plenty. Quite the reverse, however, is the outcome of my observation, the finest and fullest crops of Apples I have seen being on light, warm soils resting upon gravel and chalk. Crops in the west midlands last year were very heavy, but the cold, sunless summer was unfavourable to the proper ripening of the fruit; consequently, independently of the fact that overloaded trees will have a season's rest, it is by no means surprising that the flower-buds were imperfectly formed, not only upon edible fruits, but upon flowering shrubs of all kinds. Be the cause at any rate too little sun in the autumn of 1888 or too much in the spring of 1889, the main crops are below the average; the milk is spilled, and so far from crying over it, we must turn our best attention to details which will conduce to the formation and maturation of the wood and buds for another year. Thus far the free and clean growth and the absence of crippling frosts are favourable, and by keeping the wood thin, by judicious pinching and close training in order to let in sun, light, and air, we may reasonably hope for better results next year.

PEACHES AND NECTARINES, generally considered our most tender and uncertain fruit-bearing trees, are remarkably clean, healthy, and very fairly fertile. They have made a quick run without a check, and the fruit promises to be extra large, if not extra early; but the loose, careless training which suited them in 1887 must not be repeated, as we have more wood and less fruit to coax on to maturity. To this end let all shoots have an abundance of room for the full development of their leaves, keep them extra close to the wall and so thin that the sun may reach and be absorbed by the brickwork. Pinch those inclining to gross growth, also laterals and sub-laterals, and wash them occasionally after hot days to prevent the spread of red spider. Growth being extra strong, trees carrying light crops must not be overfed, but they must have plenty of root moisture, otherwise the foliage will become a prey to red spider and mildew and it will ripen prematurely, when once more the flower-buds will be imperfect. Heavily cropped trees may be well mulched with good rotten manure and copiously watered, but others less profitable for the time being, whilst receiving plenty of pure water must be kept in check by the withholding of all stimulants.

APRICOTS now ripening their fruit will require protection from birds and wasps, also from woodlice, which damage the best by feeding in ambush, especially upon old walls full of faulty joints and nail-holes. Although washing out with the hose before the fruit is ripe upsets them and greatly benefits the trees, trapping and killing before their favourite food is palatable are the best of all preventives. These trees, like Peaches, should be kept thinly trained, and all laterals not wanted for laying in, closely pinched to prevent waste and induce the formation of future spur-wood. If judiciously managed, trees upon which fruit is approaching the ripening stage will not only be wet enough at the roots, but thoroughly littered down with some non-conducting material to prevent the escape of moisture until after the crop is gathered. All the trees, early and late, may then be liberally watered, not once or twice, but repeatedly, especially where moisture-drawing vegetables have the run of the borders.

PEARS.—The few trees carrying good crops of fruit should be kept clear of breast-wood, mulched and watered, if necessary, and relieved of all small or deformed fruits, this year by far too numerous. Food being scarce and small birds unusually numerous, early varieties must be carefully netted to protect them from tits and blackbirds. The first,

by picking a small hole in the side of the finest fruit near the stalk, open the way to wasps and flies, but the latter make a complete clearance in a few hours.

PLUMS having been badly attacked by aphids should be divested of all sub-laterals, nailed in, and copiously washed with pure water where there is fruit, and with soapsuds where the crop has failed. When certain crops fail we are too apt to neglect the trees or to leave the training and cleansing for a leisure time, but this is a great mistake, for unless the foliage be kept fresh and clean the wood cannot be expected to plump up and mature the flower-buds for another year. W. C.

Girdling trees to improve their fruitfulness.—The American journal *Science* describes the results of some experiments recently at the Massachusetts Agricultural College to discover a method of hastening the fruiting of trees where the soil is moist and rich, and where fruit trees consequently grow largely to wood and foliage and fail to produce fruit until they reach a considerable age and size. A row of Crab Apple trees was selected. Three were girdled by cutting out a ring of bark one-eighth, a quarter, and a half inch wide at the ground; three more were girdled to the same widths just below the main branches, and others on one or more of the main branches. All the girdles made near the ground healed readily and completely; those on the main trunk healed less completely, but sufficiently to ensure a good growth of tree; those on the branches healed less completely still, and in two instances the new growth failed to meet and the branch died in the spring. All showed a marked increase in fruitfulness over those not girdled, and little difference was observed in the effect of the various widths. But no definite conclusion can be drawn yet as to the consequence of this treatment on the permanent health of the tree; observations for many years can alone determine this point. A series of experiments made at the same place ten years ago showed that by removing a ring of bark early in July from fruit trees the ripening was hastened one or two weeks, and that the increased size and early maturity were not obtained at the expense of the quality.

GARDEN FLORA.

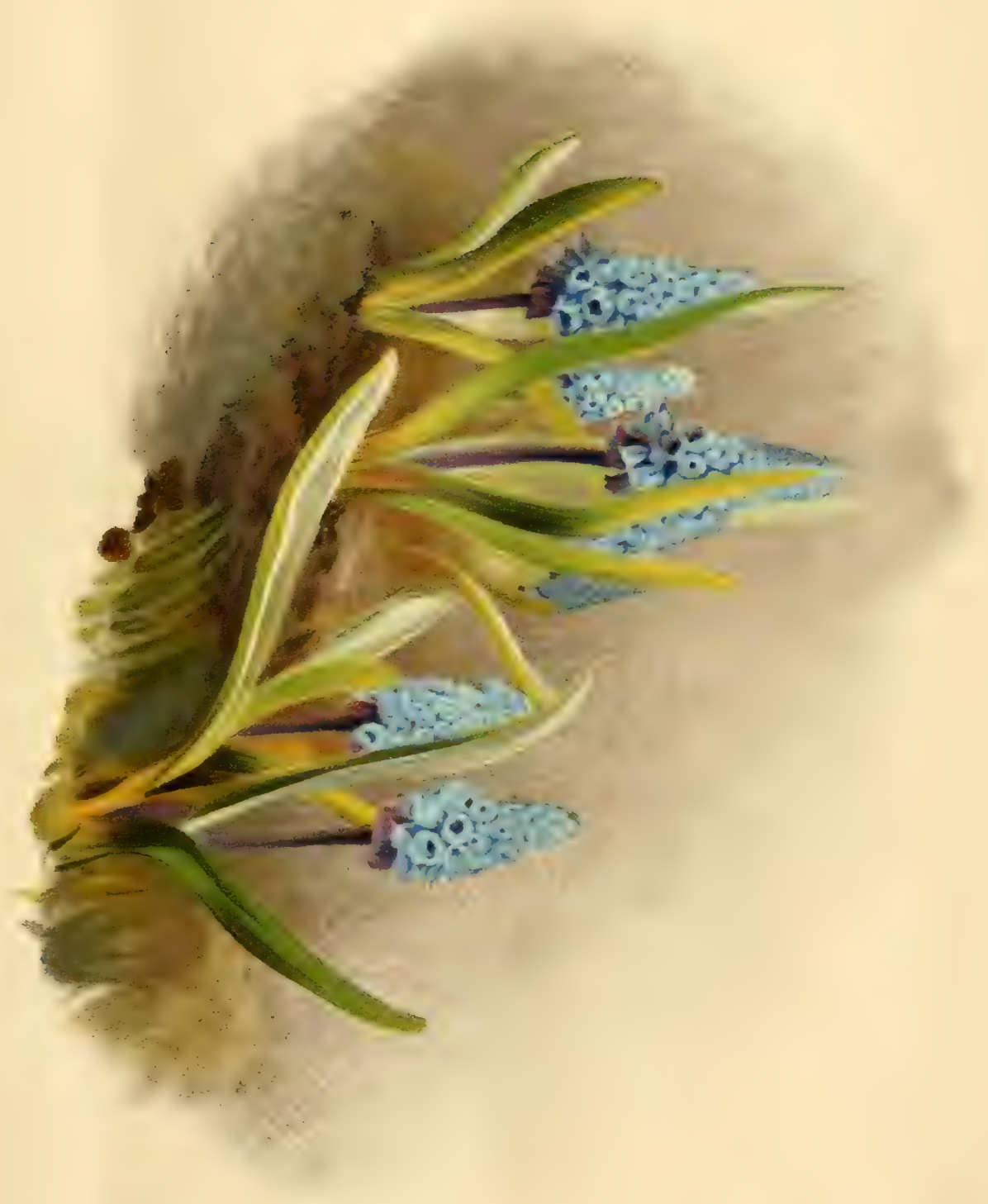
PLATE 713.

HARDY HYACINTHS.

(WITH A COLOURED PLATE OF H. AZUREUS.*)

THE accompanying plate will give those unacquainted with this really charming bulb a foretaste of what is in store for them. Amongst early bulbs, *Hyacinthus azureus* takes a first place, and when it can be had in quantity, which should not be long, considering its rate of increase, it will, doubtless, be largely grown both as a pot and outdoor bulb. Though on first acquaintance somewhat like the Grape Hyacinth, the vivid colour of its flowers, the reflexed segments, &c., mark it at once as a superior plant. It can be grown with ease in ordinary garden soil, and the seeds when ripe can be sown around the clump, where they will germinate as freely as in pots or pans in the frames. Amongst the many beautiful hardy bulbs of the Hyacinth class in cultivation at the present time, none can be compared with *Hyacinthus azureus*. It is not only beyond all doubt perfectly hardy and amenable to ordinary culture, but it is one of the earliest as well as the most charming of our early spring flowers. Indeed, one of its chief charms lies in the fact of its producing its numerous dense heads of pretty azure blooms long before we have ceased to expect heavy falls of snow. Many a time have

* Drawn for THE GARDEN in the Royal Gardens, Kew, March 19, 1889, by H. G. Moon. Lithographed and printed by Guillaume Severeus.



THE AZURE HYACINTHUS ALGERIENSIS

I gone in quest of flowers when the ground was white with its winter covering and have only been able to obtain flowers of this and some Snowdrops and Crocuses. In the case of a dwarf bulb of this kind flowering so early a handlight or bell-glass is simply placed over the clump on the approach of a storm, taking the cover off when all danger is past. The flowers stand any amount of frost without injury, and it is only the chance of their being broken with snow that renders a covering necessary. *H. azureus* is one of those half-way types that one finds so often in the Lily order. It has the habit, appearance, and many of the characters of a Muscari, with the campanulate flowers of a Hyacinth. In the one case the mouth of the flowers is contracted; in the other they are reflexed and Campanula-like, and so much resemble those of a Muscari, that Baker, in Trimen's "Journal of Botany," 1874, describes it as *M. lingulatum*; Boissier, in "Flora Orientalis," calls it *Bellevalia azurea*; Fenzl, *M. azureus*; and latterly Baker, in "Journal of Linnean Society," vol. ii., page 427, finally placed it in its proper place under the name of *H. azureus*. It is a comparatively new plant, which in some way may account for its rarity in gardens. It was first brought to the Vienna Botanic Garden by Kotschy in 1856, and it was some years after before it was in cultivation in England. Wild specimens were again gathered on the Caramanian Taurus by Mr. Elwes, and on the Cilician Taurus by Mrs. Danford, who has been the means of introducing many rare and beautiful bulbs and plants. Its comparative scarcity is not a little surprising, considering its usefulness and the rapidity with which it may be increased if the bulbs are allowed to break up, and also by means of seeds, which it ripens in the greatest abundance. It seems rather curious that the hybridists have not tried their skill here, as a kind with flowers the size of those of an ordinary Hyacinth, with the colour and hardness of *H. azureus* (a reasonable conclusion) would be one of the greatest acquisitions of our time. The bulb is whitish, round, an inch or so in diameter, producing in great abundance stolons or bulbils from the base; the leaves, in number from six to eight to a bulb, are broad, strap-shaped, erect, glaucous, and deeply channelled down the face; the flower-heads dense, conical, upper flowers sky-blue, campanulate, the lower deep azure blue, and larger than those of the ordinary Grape Hyacinth. It is an excellent subject for the rock garden, and even in situations where it gets densely shaded by overhanging plants, &c., during the summer and autumn months, we have had it in the greatest perfection.

H. AMETHYSTINUS, though nearly related to *H. azureus*, is quite different, and flowers a month later and at a time when there is a dearth of flowers of this description in the hardy bulb garden. It is one of the very old plants, and although cultivated by Miller as early as 1759, it was until recently a comparatively scarce plant. The great mistake with a bulb like this is to have two or three or even a dozen in a clump. Instead of the dozen it should be grown by the hundred, and no grander sight can well be imagined than a large sheet of this graceful Hyacinth, with its loose racemes of vivid amethyst flowers. It is a native of Spain and Italy, and therefore perfectly hardy. Its pleasing flowers are produced in May and June, when there is little chance of their being disfigured by frosts, &c. The leaves are narrow, as long or longer than the flower-stems, and of a soft green.

H. ORIENTALIS.—This is said to be the parent of all the garden Hyacinths in cultivation, and perhaps belongs rather to the florist department than the one we are treating of. The types of the garden and Roman Hyacinths, or at least as near as possible to their original forms, are in cultivation

at the present time, but so inferior to the varieties we now grow that no one would care to have them; the varieties are albus and provincialis.

H. ROMANUS is, perhaps, the least beautiful of the hardy kinds, and unless in large collections is hardly worth the trouble of growing. The flowers are dirty white or pale blue, scentless, and produced in May. It is said to have been in cultivation in Gerard's time. Native of Barbary.

Others in cultivation are *spicatus* and *corymbosus*, both well worth adding to collections of rare and beautiful bulbs. D. K.

FLOWER GARDEN.

HARDY FLOWERS IN MIDSUMMER.

It is only too true that in many gardens hardy flowers in midsummer are in the minority, and their absence is the more conspicuous, because if bedding out is done on ever so extensive a scale the bedders are not established, and June, one of the most enjoyable months of the year, passes away unattended by brilliant and beautiful flowers. In the flower garden there should be no break in the season's round of flowers, because we have so varied and almost unlimited resources. If bedding out must still exist it should not deter the intelligent cultivation of a good selection of the best hardy flowers. The long list which accompanies the article from *The Field* in THE GARDEN of July 20 (p. 61), good as it is, conveys but a faint idea of the wealth of material at command, because it only gives the names of families, and some of these are very large. For example, take the Meadow Sweets (*Spiræas*); many of these are glorious in June. The Dropwort (*S. filipendula*) of our sandy pastures, and the Meadow Sweet (*S. Ulmaria*) from streams and moist meadows are good garden plants, and there are double forms, which are still more useful and beautiful, yet we rarely see them, and when seen they are perhaps found as miserable tufts, which can give no adequate idea of their beauty. Then there are the great Goat's-beard *Spiræa* and the rosy *S. venusta*, the Queen of the Prairies, whilst equally beautiful is *S. palmata*. Again, among the shrubby *Spiræas* how vast is the variety in kinds, varying in height from 2 feet to 10 feet. This is but one instance. There are other extensive and beautiful families, the Iris to wit, which are most important. It is evident that the absence of hardy flowers at midsummer is not owing to the want of good things that flower at that period, so we must look elsewhere for the cause of the blank. It is found, I think, in the system, or rather the want of a system, of growing well and in quantity only the best things—a choice selection that will bloom throughout the season. The mixed border of the present day in many gardens is very unsatisfactory. If it ever served its purpose, it does not now. Grand borders we want, but the system of culture and the mode of arrangement must be changed and brought into conformity with the prevailing and more natural ideas. The old mixed border has its single tufts dotted everywhere, and however meritorious the plant may be, it is restricted to its ill-allotted and insufficient space. I could go to borders and find now tufts of plants as and where they stood eight or ten years ago. Everything that was hardy has been accorded much the same treatment. Fortunately, there are a few gardens—too few—whose owners, going out of the beaten track, have found out the capabilities of the finer hardy plants when subjected to some simple and intelligible system of culture.

In the old way beauty was often lost in complexity; in the new way it is accentuated by simplicity. Many of the best hardy plants might be cultivated in beds like the poor bedders, and would well repay such treatment by extra vigour and continuity of bloom. The white Japan Anemone sends up its handsome tufts of leaves early in the year. It is in flower in July (that is quite as soon as many of the bedding plants), and it will continue flowering till October or November. A bed of this fine plant would stand undisturbed for several seasons. The yellow Tickseed (*Coreopsis lanceolata*) becomes a hardy plant of the highest merit if divided annually and planted in good soil. It is making its growth whilst the bedders are still under glass; it is in flower ere they are all put out, and the frost must be sharp and severe that will put a stop to its amazing profuseness of beautiful blooms. It might be grown instead of *Calceolarias*, and whilst hardly anyone would recommend the *Calceolarias* for cut flowers the *Coreopsis* may be cut with impunity, and the flowers, either by themselves or arranged with other flowers, will be found pleasing and long-lasting.

The *Enotheras* in beds are also very beautiful. *En. missouriensis* and *En. taraxacifolia* will creep over the ground and each freely produce their large handsome flowers, which are yellow in one case, and white deepening to pink in another. What a fine bed might be made of *En. Lamareckiana*, thinly placed, and one of these creeping kinds trailing over the ground! Then there is the fine tufted white *En. speciosa*, a beautiful plant rarely seen in gardens, but one which well repays for generous treatment. Those enumerated are but a few things. It is possible to go on selecting at great length, and suggesting many ways of using these finer plants.

Less suitable for beds—unless in special beds in unimportant places—but indispensable in good borders, are the noble hardy flowers which have a short season, but are glorious while they last. Among these are such things as the *Pæonies*, *Pyrethrums*, *Poppies*, and many others. Imagine what grand borders of plants we might have if the weedy things were rooted out and the good ones grown well in informal groups, proportioned in size to the extent of the border in which they were placed. We have been so long accustomed to dots and lines, that to many grouping comes as a strange doctrine. With plants that will associate well, the groups may be varied by letting one extend into the other, and suitable things might be intentionally mixed. If a good selection is preferred to an extensive collection, if the best things are permitted to tell their own story in a free unrestricted way, then gardens where flowers are often lacking or only poorly displayed, will prove far more interesting. A. H.

The white Ramondia.—It will be soothing news to many amateurs to learn that the so-called white *Ramondia* is really not white, but a rosy blush-tinted thing. Is it not time to protest against selling things under misleading names? *Ramondia pyrenaica alba* means white and not rose-coloured, as all the forms I have seen really are. A bunch of white-flowered Potato blossom is queenly as compared with this highly-priced Pyrenean wilding. On a line with this white *Ramondia* are the numerous strains of florists' flowers dignified by being termed "scarlet." My definition of scarlet is the scarlet zonal Pelargonium, beside which the so-called scarlet Asters, *Phloxes*, Sweet Peas, *Stocks*, &c., are common reds or carmines of more or less intensity. One of the practical wants now in the garden is a well-arranged chart of colours and tints correctly named, to which nurserymen

and gardeners generally could appeal experimentally in case of doubt. I wish the editor of THE GARDEN could see his way to giving us one or more coloured charts of this kind, so that we could all refer to a common standard in this important matter of colour. As it is, the names of most tints, such as rose, lilac, flesh, pink, &c., mean different things to different people.—F. W. BURIDGE, *Dublin*.

SEASONABLE NOTES ON HARDY FLOWERS.

THE most charming of these in the early spring months are the Primulas and the garden varieties of the Auricula. August is a good month in which to repot the Primulas. I know the mention of repotting these supposed hardy plants irritates those who say that all such plants should be cultivated in the open garden, and vote the use of pot culture for any plants of this kind not only undesirable, but unnecessary. It may be undesirable, and I wish I could say it was unnecessary. Some species we grow well year after year in pots, but they do not succeed when planted in the open garden. Those that do well in the garden, freely exposed to all kinds of weather, are best left to take their chance, and amongst such may be classed the most vigorous of the Himalayan species, such as *P. denticulata* and varieties, *P. rosea*, *P. sikkimensis*, &c. The most stately of the species, *P. japonica*, succeeds well when planted in semi-wild places, as it may be seen at Kew and elsewhere. Indeed, most of these vigorous-growing plants come up freely round the old plants from seeds naturally scattered. Another species we were able to establish out of doors is *P. Parryi*, a Rocky Mountain plant, and a fine thing for a water margin. Indeed, all I have named are well adapted for that position. Some of them have been produced from self-sown seeds on the margin of ponds in the mud. Many of the North Indian species are small in stature and do not succeed in the open garden, and some are not yet plentiful enough to be trusted out of doors. In all cases it is much better to raise a few seedling plants annually if seeds can be obtained. If the seeds are sown when ripe in July, the plants produced from them will flower strongly after having made a season's growth. We have many plants from seeds sown last summer now very strong and ready to plant out where they are to flower. They like deep moist soil in summer, and when they have a good depth of soil to root into they do not mind being exposed to the sun. A few of the more vigorous of the European species will do out of doors amongst them. *P. marginata* and its varieties and such vigorous things as *P. spectabilis* will grow in the rock garden if they are not smothered with larger plants. All of them should be seen to now; those that are established should have the soil lightly stirred amongst them with a pointed stick, and if it is necessary a surface dressing of good calcareous loam should be spread over the surface around the plants. All young unflowered seedlings that are now strong enough ought to be planted where they are to bloom to give them a chance to become established before the winter.

I find those grown in pots are, like the Auriculas, liable to be attacked by the Auricula aphid, and when this pest gets into the roots of such little things as *P. minima*, it prevents the water reaching the small fibrous roots, and it is impossible to get the aphid out without separating each small crown and washing it. This process either kills the plants or injures them so that they will not flower again. The more vigorous species are not materially injured by it. We grow one or more of all the species and varieties in pots, and I cannot complain that any of them do not give satisfaction. If the plants are wanted to flower earlier than usual we can force them gently, and if it is desirable to keep them back they may be placed in a frame on the north side of a wall, where they may be retarded for ten days or more. It is an error to over-pot them, and in all cases use pots that might be thought small for the size of the plants. The potting soil should be good loam from an upland pasture, and should be mixed with decayed manure, leaf-mould, and

sharp white sand. The position for the plants is of some importance. They cannot endure the stifling air of close frames or greenhouses, all the glass protection they seem to require being shelter from cold rains and snow during the winter and spring months. We keep them out of doors during summer and autumn where the sun does not shine directly upon them.

AURICULAS.—From the beginning until the middle of August we will finish for this season the repotting of these. The plants are very liable to be attacked by green-fly during the hot weather, and as a precaution we dip them in soft soapy water during the process of potting. The roots in some instances have to be washed to clear them from the Auricula aphid, which extends itself so as to cover the ball of roots with a cloud of down. The only way to do with such plants is to shake out all the soil from the roots and wash them clean with soft soapy water. I find it better not to wash the soft soapy water off with clear water, but allow it to dry on the roots before potting the plants again. The Auriculas, like the Primulas, require plenty of air night and day.

The Polyanthuses and Primroses succeed best as border plants, and they do very well with us except so far as they suffer from the attacks of red spider in hot weather. In some gardens this troublesome parasite does not exist. The Rev. F. D. Horner, who grew the laced Polyanthuses remarkably well in his garden at Kirkby Malzeard, told me that when plants came to him with red spider upon the leaves, it would gradually die off, with the result that the plants assumed a healthy appearance when the insects ceased to exist. In the counties of Durham and Northumberland the cool nights suit the plants as well, and no insect pests seem to injure them. They flower well out of doors after growing vigorously in the summer and autumn. Those plants intended for pot culture and for exhibition must be placed in pots this month. The plants will succeed admirably with the Auriculas, but they require even more air; indeed, I have placed them out of doors as soon as they were potted, and they did very well the next season.

PANSIES.—It is now a good time to get in cuttings of Pansies, and, indeed, all sections of the genus *Viola* that have to be propagated in that way. The plants suffered very much from the hot dry weather in June and the early days of July, but the heavy rains and cool nights we have had since caused the plants to produce a mass of fine wiry growths from the base. These taken off now do not fail to produce roots quickly, which soon establish themselves, and they may be planted out for the winter in beds or borders. The Pansy, like the Polyanthus, delights in a moist cool climate, but we manage to grow it very well by preparing beds of deep open soil, well enriched with cow manure. The plants are sometimes destroyed by wireworm, and they also suffer from severe frosts in winter. To make sure of not losing the entire stock of any one variety, we plant two of each in boxes, and these are kept in cold frames during the winter. Single plants may also be grown in 3-inch pots.

J. DOUGLAS.

The best white Carnation.—You ask which is the best white Carnation. The query is soon answered. It is one I have here, a seedling of 1887, and blooming now for the first time. But why do I know that my plant is the best white? My reply is, because I have never seen another so good at all points. I do not regard your question to refer to the best variety for pot culture to be grown under glass, and to produce the finest flowers when the dresser has pretty well pulled the blooms to pieces. I take it for granted that you refer to white Carnations, robust and free and beautiful, solely as border flowers. Now nearly all the large-flowered white varieties have rather weak grass, and still further are far less prolific of grass than are other coloured varieties. For that reason they are never plentiful, and as border flowers never make a big show. Still further they are more amenable to weather influences than most other sorts. But my

seedling plant starts with a great wealth of stout grass; in fact, I should think it has fully 100 shoots fit for layering or for pipings. All that is of compact growth. Then from out of that rise forty flower stems, stout, and of medium height, carrying some 200 to 250 blooms and buds forming a large head. The flowers are of medium size, best, on the whole, for outdoor purposes, as they are less readily affected by weather, are very double, and pure white in colour; still more are very sweetly perfumed. I have named it *Perdita* in honour of the lady of the "Winter's Tale," who would have no field Carnations in her garden. If anyone has a better white Carnation for outdoor growth than mine, I shall be glad to hear of it.—A. D.

AGAPANTHUS UMBELLATUS.

"S. D." renders good service to decorative gardening by strongly recommending this old favourite (THE GARDEN, July 27, p. 83). Unfortunately, like many old plants, this is seldom seen in such good condition as it was a quarter of a century ago. It is far less generally grown, and seldom or never so well grown. It seems absurd to write it, but there is hardly a doubt that one reason for its being less generally cultivated arises from its habit of bursting its pot in a very persistent and wholesale manner. For example, I once grew sufficient in 12-inch pots to clothe a long wall. These were fine plants, flowering freely every year, and their foliage and bloom were infinitely more artistic and effective than the scarlet Geraniums that superseded them. But the sacrifice of from fifty to 100 12-inch pots annually was too great to be persevered in, and the Agapanthuses had to be given up.

We were advised to try cast iron vases. But these also proved costly. Neither did the plants take so kindly to, nor thrive so well in the iron as they did in the pots. Thicker, heavier pots were also tried, but these also burst after a time, as no kind of earthenware could withstand the severe root-pressure.

To avoid this sacrifice of pots another mode of culture has proved successful. The old masses were cut up or torn to pieces. The latter can be done, more or less successfully, after soaking in water for twenty-four, or more hours. This loosens the root-mass, and so considerably softens it, as to enable the root to be separated into pieces corresponding with single or groups of stems. These should then be potted singly in as small pots as they can be got into without bruising or overcrowding the fleshy roots. Loam only of rather a stiff nature should be used. Place the plants in any temperate house or pit until the roots are thoroughly established. Leave them in a sheltered place in the open air until the roots are considerably pot-bound. When they have reached this state they may be grown, bloomed, and stored through the winter for years without being again potted up.

These small plants are readily portable either for summer blossoming or winter storing. The nucleus of good roots forming their balls continues and gradually enlarges as they grow older. For blossoming purposes, place three, five, seven, or nine pieces in large pots, vases, or baskets; for beds or groups near to water or in dells, use a score, fifty, or a hundred. In planting, place the groups pretty closely together, as in vases, &c., to resemble one huge plant. Fill in between the blocks of roots with stiff loam, ramming it in firmly. This soil and treatment favour free blooming, moderate growth, and strong roots around the original ball. The latter point is of great importance, as when the plants are disturbed and lifted in the autumn the roots lift in a mass with them. These can then be packed closely in a house, pit, or frame near to the glass, wintered in a temperature of 40° or 45° throughout the winter, and returned to their blooming quarters the following May.

This process can be repeated for many years without impairing the vigour, curtailing the size, or lessening the amount of bloom on the plants. On the contrary, properly managed, this simple order of culture not only maintains, but augments the health and beauty of the Agapanthus. Neither

does it matter much how closely roots and tops are packed for the winter, provided the leaves are exposed to the light and neither leaves nor roots are exposed to frost.

I differ from "S. D." about leaving the plants outdoors in winter. This seldom answers well, as even should frost be excluded by coverings of litter, &c., the plants do not like either the damp or the darkness of our long winters, and often dwindle and die under the covering *regimen* in the open. HORTUS.

FLOWER GARDEN NOTES.

PHLOX DRUMMONDI AND DAFFODILS ON THE SAME GROUND.—I made a note of this at the time of planting the Phlox, but the double cropping has been such a success, that I refer to it again. Being somewhat of a novice in Daffodil culture and the fortunate possessor of a large bed of the very best sorts that last spring flowered grandly, I naturally decided that the best way of ensuring a still better bloom next year was to leave the bulbs in undisturbed possession of the ground. The only difficulty in the way of my doing this was that the border is in rather a conspicuous position. Either the bulbs must be lifted, or something must be planted between the lines—15 inches apart—of the Daffodils. This is the whole history of the magnificent bed of Phlox Drummondii in mixed colours that now completely covers the soil, and as the plant does not make very large roots I do not anticipate any injury to the Daffodils. A gardener friend who ought to know, after admiring the Phloxes, was told about the Daffodils, when instead of approving the plan said, "What a pity! Daffodils flower best when lifted annually. Mr. So-and-so always lifted his, and this is the reason he always shows such fine flowers." I confess that this was news to me, and I shall be greatly surprised to learn that the practice is general. If it is, what about the Daffodils in the meadows that have occupied the same places for ages, and yet flower to perfection?

EAST LOTHIAN STOCKS.—The German and Ten-week Stocks have always been popular favourites. Their short-lived nature, however, must ever cause them to take a second place to the East Lothian, the branching habit, free growth, and profuse continuous flowering of which entitle them to the highest position among hardy annuals. The plants we have now in full flower were raised in cold frames. They were sown the last week in February, pricked out as soon as large enough, and afforded the same protection, and after being thoroughly hardened off were planted out the first week in May. They will continue to flower till sharp frost cuts the plants down. The Ten-week section were not sown for a month after the East Lothian, yet, as showing the difference of the two, the Ten-week Stocks are fast going out of flower, and there will be a blank in the borders just at the time we want all to look its best, because in August and the early part of September we get most garden visitors.

BORDER CARNATIONS.—These have done better than at one time was expected. The "grass" was attacked by some unknown fungus or insect, that only succumbed to repeated waterings with soot water and soap-suds that appear to have benefited them, as well as stayed the ravages of insects, or fungus, or both, the plants being now as healthy and well flowered as any one could wish. We have a few named kinds, but most of our plants are three-year-old seedlings, and there is a marked difference in favour of the vigour of the latter as compared to that of the named kinds, and the seedlings, if not so refined as the others, are sufficiently varied for planting for general effect. The preponderance of self colours, such as red, white, crimson, and pink, is not the least of their merits for border planting. Seeds sown now and the seedlings nursed on in frames through the winter will flower moderately next season, but it is better to sow on an open border with only the protection of a handlight early in spring, and grow on the seedlings without check during the following summer, and the second season they will flower very freely.

THE CHIMNEY CAMPANULA (*Campanula pyramidalis*).—This is seldom seen growing in the open flower border, probably by reason of the mistaken notion that it is only fitted for the greenhouse; as such it does well enough, but it comes far grander in the open. A number of plants that we have now in flower are quite a feature in a herbaceous plant border that is mainly furnished with Phloxes, Gladioli, and Lilies. Of the two colours, blue and white, the latter is the most telling on account of the bulk of the other plants being dark. From this circumstance I should in future not need much persuasion to grow the white variety only. Being a biennial, it is necessary in order to have flowering plants every summer to sow each year, the plants raised from seeds sown last spring being those that will flower next summer. At present our last spring seedlings occupy a border in the kitchen garden, and here they will remain till next February, when they will be transplanted to their summer flowering positions. Those for pot culture will shortly need to be taken up and potted into their flowering pots. During winter they will have the protection of a frame till severe weather be past, when they will have open-air treatment, and only be afforded house room when the flowers begin to open, and they are required for conservatory decoration. W. WILDSMITH.

NEW FRENCH VERBENAS.

NOT having grown any of the above named pretty and free blooming summer bedding plants in my garden for over twelve years, and hearing that great improvements both in size of pip, variety of colour with the addition in many instances of large and distinctly marked white eyes, forming a charming contrast to the brighter colour of the outer lobes of the flower, had been made by the Continental growers and raisers of these plants, I determined to see for myself what they were like, so sent to Messrs. Lemoine, of Nancy, and Bruant, of Poitiers, for their entire sets, receiving in the month of March in excellent condition by the convenient means of the Parcels Post from the former nurseryman eight varieties of his own raising, and a little later on eight more selected by him from those sent by other raisers, and from the latter twenty varieties all of his own raising. As all these are now in fine bloom in my garden, filling four large oval beds, I think some descriptive notes concerning the respective merits and beauties of each of the thirty-six varieties may not be unacceptable or altogether uninteresting to the numerous readers of THE GARDEN who admire and may wish to grow these plants.

Lemoine's eight varieties are—

ATLAS.—A good big flower of a deep lilac colour, shading to a much paler hue as the flower fades, with a large and distinct white eye.

FATINITZA.—This is so like Atlas that the two are hardly distinguishable from one another.

LAKME.—This also much resembles Atlas, but the outer lobes are of a more rosy shade of lilac.

OCEAN.—A very narrow leaved variety of spreading habit of growth, and very free blooming, but only differing from Lakmé by a very slight shade of colour and rather larger white eye.

DEUIDESSE.—Fine pure white with good trusses, and a very free bloomer, sometimes sporting to deep carmine with most curious effect.

ISABELLE.—A strong, coarse grower, producing round the outer edge of plant a number of fine large trusses of large deep violet flowers with good white eye, but the entire centre of plant is an empty green waste.

KRAKATOA.—A very pretty variety, with large, light carmine flowers with good distinct white eye.

MONDAINE.—A most profuse bloomer with very large flowers, the upper lobes of which are deep rosy purple, the lower ones of a much lighter shade of colour. The whole effect is, however, not altogether pleasing.

The eight from other raisers are—

ANTONI (Gerbeaux).—A good large flower of a bright shade of rose colour, with large white eye.

ARISTOTE (Rozain).—Fine large flower of a bright shade of carmine, with large and distinct white eye.

CATULLE (Rozain).—Medium-sized flower of a pale rose colour, with good white eye.

DRAGON (Gerbeaux).—Fine large flower of a deep shade of rosy carmine, with large and distinct white eye.

JOBINETTE (Gerbeaux).—Medium-sized flower, almost identical in colour with Lemoine's variety Krakatoa.

MME. DELAUX (Délaux).—This is one of the most distinct flowers of the whole lot, and very free blooming, producing fine large trusses of dark claret-coloured flowers, with distinct white eye. This is quite unlike any other variety.

MERCURE (Rozain).—Fine large flower of a deep shade of carmine, with a large white eye.

MONSIEUR PAILLET (Délaux).—Almost the same as last named variety, but with lobes of a lighter shade of carmine.

Monsieur G. Bruant's twenty varieties are—

FEE POITEVINE.—A good pure white.

EUGENIE MARLITT.—A good-sized flower of a pleasing shade of rosy violet, with distinct white eye.

MME. J. CAZIN.—Fine large flower of a deep shade of rose colour, with good white eye.

PICCIOLA.—A charming variety with large bluish-white flowers, with a deep rosy centre, quite uncommon and unlike any other.

THEMIS.—A very beautiful variety, with large, deep rosy magenta flowers, with a good and distinct white eye. One of the prettiest of the set.

LA COMETE.—A fine variety with large, light red flowers, with large starry carmine eye, very distinct, and of good free habit of growth.

JULIE GOURAUD.—A very free bloomer, with medium-sized flowers of a pleasing shade of rosy purple, with a good white eye.

MENELAS.—A variety with medium-sized flowers of a deep shade of rosy magenta, with small white eye.

PRINCESSE HELENE.—A comparatively small flower of a rosy lilac shade, with small white eye.

MADELEINE GREEN.—A variety producing good large trusses of large flowers of a most pleasing shade of deep lavender, with a good white eye and nice compact habit of growth.

MME. COLOMBE.—A fine large flower of a deep shade of rosy purple and large white eye.

MELENITE.—A fine variety with large flowers of a bright scarlet, and good, though not over large white eye.

CALLIMAQUE.—A very fine variety, with larger flowers than the last named, of a rather deeper shade of scarlet and larger white eye.

TURQUOISE.—A fine variety with large, deep purple flowers, with large and distinct white eye, but most inappropriately named, as it has nothing of the true turquoise shade of blue in its flowers.

BERTHE GUERBLIER.—A medium-sized flower of a bright shade of cherry-red, with small white point in the centre.

BENJAMINE.—A very fine variety with large trusses of full-sized flowers of a rosy bluish shade, with deep rose-coloured centre and white eye; of compact habit of growth.

ZENAIDE FLEURIOT.—A good-sized, deep rose-coloured flower, with distinct white eye.

BOLIDE.—A fine large, light scarlet flower, with large and distinct white eye and good free habit of growth.

L'ILIAD.—A most distinct and beautiful flower of a most uncommon shade of deep velvety indigo-blue, with a large white eye; a free-blooming and lovely variety.

COLOMBINE.—A fine large flower of a pleasing shade of light scarlet, with distinct white eye.

As will be gathered from a careful perusal of the above descriptions, this set of Verbenas embraces many most distinct and beautiful varieties, and all, with one or two exceptions, notably Princesse Helene, are worth growing, and much to be recommended for the ornamentation of the summer garden. Cuttings should now soon be put in, so as to have young plants well established before the winter sets in, and the cuttings taken from these in next February and March will afford the blooming plants for next year. W. E. GUMBLETON.

SHORT NOTES.—FLOWER

Salvia patens alba.—This, which "W. H. G." says is a novelty (GARDEN, July 27, p. 84), I have grown for forty years.—J. M., Charnmouth, Dorset.

Variegated Arum Lily (*Richardia albo-maculata*).—I am surprised to find this so hardy. I should have thought it incapable of bearing even a slight degree of frost, but some roots left accidentally in the ground came up quite strong and are now in full leaf. Those who employ tender-foliaged things for open-air decoration in summer may perhaps be interested to know that the roots at least of this pretty Arum are so hardy. A slight covering of some light material would

be sufficient to ensure their safety even in a very severe winter.—J. C. B.

The Burning Bush (*Dictamnus Fraxinella*).—If your correspondent, A. M. Pilton (see page 84), will apply the match to his *Fraxinella* when the seed vessels have been formed and have reached their full dimensions, he will probably find that they will "flash" as well then as they did when the plant was in full flower.—B. S.

FERNS.

W. H. GOWER.

ADIANTUM FARLEYENSE.

This plant has become well known to growers during the time it has been in English gardens. I first saw this plant at the International Flower Show, held in London in the year 1866. The plant, I believe, was introduced from Barbadoes, and is said to have originated there, and that is all that is known of its history, whilst as no collector has ever sent home wild specimens, it is considered to be a garden variety. Whether it be a wild plant, or of garden origin, it is at once the most massive and superb species in a genus proverbial for the beauty of its members. It is a plant which moreover, is never fertile, and hence the late Mr. Moore, of Chelsea, suggested that it might be an infertile crested form of *A. tenerum*, which is a well-known West Indian species. For the introduction of this plant, I believe we have to thank the Messrs. Veitch. For years after its introduction it became a special point of interest in gardens to show the size of the *farleyense* *Adiantum*, a pride which during the last decade has fallen into disrepute. Now, however, the apathy which had crept over Fern growers has fallen away, and new life appears to be springing up, and I hope again to see some handsome specimens of this beautiful Fern. *A. farleyense* is a plant which grows to a height of 3 feet, producing large, pendent fronds, which are each some four times divided, the pinnæ being large, deeply fringed on the edges, and having the appearance of being crested. It is not, however, on the largest specimens that I have noted the largest and most massive fronds, but upon plants when confined to a single crown. The best grower of this plant I ever knew was a nurseryman who formerly carried on a business at Croydon. His plants, which were numerous, were grown in single crowns in small pots, kept close to the glass, slightly shaded from the sun, and exposed to great heat and an atmosphere well charged with moisture. Treated in this way the plants grew vigorously, the young fronds coming up of a pinkish crimson, changing with age into a pale green, the massive pendent fronds forming beautiful adornments for vases in the dwelling-house on the occasion of an evening party or upon any festive meeting. Without hardening off, however, the plants would soon shrivel. This hardening process is too often overlooked by gardeners about to decorate apartments, the atmosphere of which is so very much drier than that of the houses from which the plants have been taken, and therefore a gradual weaning from the moisture-laden air is necessary to enable the plants to appear at their best in the boudoir or drawing-room.

The soil should be a mixture of good fibrous peat and light turfy loam, made tolerably sandy, and the pots should be well drained. A very liberal supply of water is necessary, both to the roots and in the atmosphere, but I dislike syringing. More especially have I seen this injurious in the winter months in a low temperature. Indeed, a low temperature during the winter was one of the chief causes which led

to the restricted cultivation of this plant, as under these conditions even a large specimen becomes a poor starveling, which affords no idea of its grace and beauty. If large specimens are required, repot the plants often, but do not give them a very much larger pot at one time, the hideous appearance of the pot destroying all the beauty of the plant. By the time the plant has occupied this large receptacle, the soil in all probability will have become sour, and the plant will begin to deteriorate. If young plants only are required, keep them in small pots, and also keep them to a single crown by frequent divisions. I must confess that the wonderful beauty of this plant has always appeared to me in the greatest perfection in this young plant state.

ASPLENIUMS.

FOR the cool fernery, the greenhouse, or for house decoration some of the *Aspleniums* are among the most useful of all Ferns—light, graceful, and symmetrical in habit, with bright green fronds, which are of good substance, and consequently stand a dry atmosphere better than many Ferns. Those of the viviparous group are perhaps the most serviceable, and these can be readily propagated from the bulbils or small plants which are produced on the surface of the fronds. *Aspleniums* are perhaps rather slower in forming good plants than many of the *Pterises*, *Adiantums*, &c., but after they once get a good start they grow away more freely, and with care the same plants will remain in good condition for a considerable time. It is, however, necessary that young plants should be grown on to succeed those which have become too large, especially where they are required for table decoration, &c. The *Aspleniums* may be propagated either by taking off the little bulbils when quite small and treating as tender seedlings, or by pegging down the fronds on some suitable soil for the young plants to form some roots, after which they may be removed and potted. The former method is the best, as it does not interfere with the old plants so much. The bulbils may be taken off as soon as they have formed the first tiny frond; in some sorts they come off freely, while others require some care, otherwise a portion of the parent frond will come off with them, and it is best to avoid this if possible. Pots should be prepared before the bulbils are taken off; they should have plenty of drainage, and may be filled to within an inch of the top with any rough porous soil, and surfaced over with sand, peat, and *Sphagnum Moss*, the last cut up small, and all rubbed through a fine sieve. In this the bulbils may be pressed firmly after giving the pots a good watering with a fine-rosed watering-pot and placed in the close propagating pit. The young plants, which should be well shaded, especially for the first few days, do not require much heat, just enough to prevent damp and stagnation. As soon as they begin to grow, a little air may be given, and it is essential that the plants should be potted off singly before the roots get matted together. The *Aspleniums* like rather a light open soil. Loam, leaf-mould, and peat, with plenty of sand added is a good compost, but it should be used in rather a rough state. *Aspleniums* will stand exposure better than most Ferns, but they thrive best in a shady position, and although they do not require much heat, they should not be exposed to dry draughts, especially while they are growing.

The following are a few of the most useful *Aspleniums* belonging to the section above referred to, the names given being those by which they are most generally known: *A. biforme* is most extensively grown for market purposes, and is one of the most useful. It is very prolific, producing young plants over the whole surface of the fronds. *A. Colensoi* also finds favour with market growers. It is dwarf and compact in habit, and begins to produce young plants while in quite a small state. *A. laxum pumilum* is extensively grown on the Continent, but not yet so well known among English growers as it deserves to be. It is certainly

one of the handsomest of the genus. It is of intermediate growth, with rather finely-cut fronds, just dense enough and not too heavy, and forms a very pretty table plant. The fronds have a bright shining surface with a peculiar greyish shade. This species succeeds best in a rather higher temperature. It does not produce stock so freely as some, and the young bulbils should be taken off while they are quite small, otherwise they fall off and are lost. *A. fœniculaceum* is another useful sort, with finely-cut drooping fronds, very useful in a small state, but it does not fill up enough in the centre to make a pretty plant after it gets beyond a certain size. *A. nobile* somewhat resembles the older species, *A. viviparum*, but is not quite so dense and grows far more freely. *A. bulbiferum* must be included among the most useful. There are several intermediate forms between this and *A. biforme*, and in the various stages of growth it is difficult to distinguish them from one another. The true *A. bulbiferum* is more dense and compact than the varieties often seen under that name. A.

KITCHEN GARDEN.

ONIONS, AUTUMN-SOWN.

AUTUMN raised Onions are usually the largest and mildest in flavour, but, unfortunately, do not keep nearly so well as those obtained by sowing in the spring. The white-skinned varieties especially are very mild, and ought to be more often served as a vegetable than they are, and even the red or coloured varieties generally might well be used for other purposes than flavouring soups or mixing with stuffing ingredients. Of the white-skinned varieties, the pretty little Queen, a synonym of which is the small white Barletta (*Vilmorin*), is much the quickest in bulbing, and ought to be freely sown in the autumn or in heat in the spring, and planted out wherever there is any likelihood of the supply of winter Onions failing



Onion Giant Zittau (one-third natural size).

early. This year the spring-sown Onions are very thin in many gardens, and mildew has already shown itself, so that there is every likelihood of a comparative scarcity. The White Lisbon is largely grown in the open fields, but I have repeatedly found the White Naples to be earlier in bulbing and also of better form. The last-named is the best that can be grown for exhibiting at May or June shows. Giant Madeira, Flat Italian, and Mammoth White Italian are all more or less distinct forms of the White Tripoli, the last named being rather the finest. All attain a great size under good cultivation, and are the best for including in collections of vegetables during July and the early part of August. These, again, are excellent when either baked or boiled and served up whole with the usual accompaniments. The quickest to mature among the coloured varieties is the Golden Queen, this, in all but colour,

resembling the White Queen. Giant Rocca, red skin, and Lemon Rocca both attain a good size and are also very heavy; consequently are the best for exhibition where weight is the principal consideration, and they also keep better than any other variety yet mentioned. The Globe form of Tripoli is also heavy and a fairly good keeper.

Although Tripolis have long held the monopoly, it does not follow that they are hardier or better adapted for the purpose than any of the White Spanish, Brown Globe, or other types usually sown in the spring only. If any of the superior sorts of White Spanish, such as Banbury, Reading, Giant Zittau, Rousham Park, and Anglo-white Spanish, are sown in August at the same time as the Tripolis, the plants will survive through the winter equally as well, and if duly transplanted to a rich bed of soil, will attain a much larger size and mature earlier than is the case when spring raised. The one great drawback to this system of raising White Spanish Onions in the autumn is the fact that under high cultivation the bulbs are subsequently apt to become malformed, and in particular are hollow underneath—in this respect resembling the common white Tripoli. This,



Onion Globe Tripoli (one-third natural size).

however, can be avoided to a certain extent by transplanting to moderately rich land only, this being made extra firm, the use of liquid manures being also avoided. Bulbs thus raised cannot honestly be exhibited in the classes for spring-sown Onions, but the plan perhaps partakes no more of trickery than does raising the plants in heat early in the year, or during January and February, the bulbs obtained from these being admitted as spring sown. Some of the presumably spring as well as autumn-sown Onions are sometimes obtained by planting in the spring, tiny, well-ripened bulbs that had been obtained by sowing seed in the May previous on hard, poor ground, where they will bulb early and ripen off sufficiently well to keep through the winter.

In some few instances Tripoli Onion seed is sown late in July, but as a rule the first or second week in August is quite early enough, moderately strong plants being the best for transplanting in the following spring. The white Spanish varieties may well be sown in warm localities as late as the third week in August, as the smaller, comparatively, these are when transplanted, the greater the likelihood of

well-formed bulbs resulting. If a supply of Onions is wanted early in the spring the seed may well be sown on a well-enriched, yet firm, sunny border where those left after the thinning out and transplanting have been done will mature, or attain a serviceable size early in the spring. As a rule a good open position, the soil



Onion White Lisbon (one-third natural size).

being duly manured, dug, and made as fine and firm as possible before the seed is sown, answers very well. The rows for the strong growers should in this case be drawn 12 inches apart, and for the Queen, or small Silver-skin family 9 inches apart is ample. We usually raise our stock of plants in single rows, midway between newly-planted Strawberries. Here they grow sturdily, and unless the Strawberries are extra vigorous there is no reason why a portion of the Onions should not be left to mature where raised. The firm rich ground accorded Strawberries suits Onions admirably, and in any case the position, seeing how closely all gardens are, or ought to be cropped at this time of the year, is most convenient.

Drills for Onion seed should not be more than 1 inch in depth, and if at all dry ought to be watered when opened, and before the seed is sown and covered, or otherwise it may be a long time before it germinates. Sow thinly and cover with fine soil. There are few enemies to young



Onion Giant Rocca (one-third natural size).

Onion plants other than worms, and if these are found to be drawing the plants under, the ground must be frequently trampled and dressed with soot and lime occasionally. Where the plants are at all crowded it is advisable to thin out lightly, and the only other attention needed during the autumn and winter consists in occasional cleanings or surface hoeing. Not till the ground that has been heavily manured and deeply dug, especially for the Onions,

is in good working order should the transplanting be done in the spring, as it is of importance that it be made as firm as possible without causing it to clog together badly. Soot ought always to be freely used on ground intended for Onions, and more applied when they are growing, this acting as a moderately powerful fertiliser, and also proving obnoxious to the Onion maggot. More room is often given Tripoli Onions than they really need. The rows may be 12 inches apart, a distance of 6 inches dividing the plants in the row, but if extra large bulbs are required, the stronger growers may be allowed another 3 inches. The Queens need not be transplanted, and may be left rather thickly on the ground, numerous small bulbs, about 2 inches in diameter, being most serviceable. When transplanting we open shallow drills, spread the roots of the carefully lifted Onions in these, and cover firmly with fine soil. If extra pains are taken in harvesting the bulbs, the red and yellow-skinned varieties will keep to mid-winter. The white-skinned varieties always keep badly. All should be taken off the ground directly the tops die down or the roots perish, and if the weather is too wet to permit of the bulbs ripening well on mats or dry boards, they ought to be placed on dry shelves under glass to become properly matured.

W. IGGULDEN.

KITCHEN GARDEN NOTES.

CAULIFLOWERS.

ON the whole, these have succeeded remarkably well this season. Fewer "bolted" at the outset than usual, favourable weather causing both the autumn and early spring-raised plants to come on quickly. Those plants given the benefit of shelter in the shape of hand-lights naturally were the first to heart in, but even those not so protected on warm borders were available nearly as soon as the latest Broccoli were cut. The variety variously termed Snowball, Extra Early Forcing, Defiance, and First Crop occupies but little room, is much the quickest to heart in, and altogether is quite a gem among Cauliflowers. To succeed this, either Erfurt Mammoth, Early London, Mont Blanc, or Magnum Bonum are suitable, the last named being distinct and good in every way. Supposing Cauliflowers are needed in July, it is advisable to make one sowing of one or more of the four last named varieties in a frame or sheltered position in March, and by the time the plants thus obtained and duly put out on good ground have produced their hearts, plenty of extra fine heads should be available from the autumn-raised Eclipse and Autumn Giant, the first named being the earlier by about a fortnight. Autumn Giant, raised on a gentle hot-bed or warm border in the spring, would carry on the supply till the Autumn Protecting Broccoli are ready for use, and in this manner, supposing there have been no failures with either of the batches, the kitchen is kept well supplied. The time-honoured plan of raising a considerable number of plants in the autumn, these being wintered where some kind of protection can be afforded, has still much to commend it, sturdier and better plants being had in this way than by coddling late winter or early spring-raised seedlings in pots or boxes. Most gardeners do endeavour to raise and preserve as many plants as they can through the winter, but amateurs rarely make the attempt, and this I hold to be a rather short-sighted policy on their part. No fixed or suitable date generally for sowing the seed can be given, so much depending upon the particular district. In northern localities the first week or not later than the second week in August is the proper time to sow, but as we approach nearer the warmest districts the time may well vary from the middle to the end of August, and in very warm positions the middle of September is early enough. In each and every case it is advisable to make the first sowing on a warm, fairly well sheltered border, and should this end in a partial

or complete failure, then another sowing should be made in a shallow cold frame in which the seedlings can remain undisturbed during the winter. The sturdiest plants are obtained by sowing thinly and broadcast on moist or newly moistened fine soil, the seed being lightly covered by fresh sifted soil. Where small birds are troublesome the seed ought to be damped and rolled in powdered red lead prior to being sown, or else the beds must be netted over. Frequent dustings of soot and lime applied when the tiny seedlings are damp will to a certain extent check the birds and also keep off slugs. Cauliflowers are not quite hardy, but if not unduly coddled will withstand a moderately severe frost. Not unfrequently a considerable number will survive the winter on the border where raised, and also when transplanted to the foot of sunny walls, but no dependence can be placed on these positions, and a portion therefore of the plants should be pricked out when of good size, either in frames or else placed in pairs in 3-inch or rather larger pots or thinly in shallow boxes. The two latter plans would best suit the owners of small gardens, as the plants can then be wintered either in cold pits or frames or on shelves in cool houses.

WINTER GREENS PLANTED LATE.

In the southern districts especially the planting of Borecole, Broccoli and Savoys is continued up to the middle of August or according as the ground is cleared of Potatoes and Peas. Whether such crops will pay for the trouble or not very much depends upon the weather experienced in the autumn, but there would be a greater likelihood of their succeeding if the plants were raised later than usual, the seed being sown during the first or second week in May. When leggy, overgrown plants are put out on comparatively poor ground, and it may be in very bright weather, they are very slow in recovering, and before they attain a serviceable size early frosts are liable to cripple them. Plants with naked stems are the first to suffer from frosts, but although it is advisable to bury these stems as much as possible, they must not be dropped into extra deep holes where the roots will be out of the reach of both the best soil and warmth. If tall plants must be put out they ought to be laid in a sloping direction, or as the ground is dug the roots being disposed at their usual depth and the greater portion of the stems covered with well broken soil. The heads will soon right themselves, and if a little good manure is trodden about the roots, good progress may be made before wintry weather intervenes.

TURNIPS.

During the showery weather experienced in the third and fourth weeks in July, the tiny Turnip seedlings fared badly, slugs and birds having matters very much their own way. In many instances the rows were so patchy as to necessitate the ground being surface-hoed and re-sown with Turnip seed. It is a crop that cannot well be dispensed with, and every attempt ought, therefore, to be made to secure as good breadths as possible. In the southern parts of the country seed may be sown as late as the middle of August with every prospect of a good return for the trouble taken, but not often does it pay to sow much later. Even if the late raised plants fail to bulb properly they will generally survive the winter and yield succulent and wholesome tops or greens in the spring. The latter are so much appreciated in some establishments, that it is advisable to grow a good breadth of Turnips specially for the tops. If roots are most needed and late sowing unavoidable, the preference should be given to the Early Milan and Snowball, the former variety being especially quick in bulbing and fairly hardy. It can also be grown very thickly on the ground, and if the seed is sown moderately thickly, the thinning out may be done much as the earliest roots are drawn for use. Two of the best keepers are Chirk Castle Black Stone and Veitch's Red Globe, and these raised in July have not unfrequently kept good through the following winter. These, therefore, should be reserved as much as possible, in case the August sown crops should fail.

PARSLEY.

Only those who have failed at some time in their

gardening career to maintain a supply of Parsley can fully appreciate what a relief it is to have abundance of it at all times. There is a daily demand for it all the year round in small as well as large establishments, and the inexperienced are especially advised to take more than ordinary pains in its cultivation where this is necessary, in order to keep up a supply. In some instances the seed fails to germinate properly; in others the tiny seedlings disappear in a most aggravating manner, these being preyed on by insect pests; while in some cases from some cause or other no attempt is made to secure a good bed or a few rows of Parsley before it is too late. Luckily, Parsley transplants readily, and this process is the best remedy for all causes of failure. We have frequently been obliged to raise a good stock of plants in a frame or gentle hotbed, these being dibbled out on a well-prepared border as soon as the tap root had thickened somewhat. At the present time failures may be made good by carefully thinning out any patches of strong young plants that may have escaped various enemies, these being dibbled out 6 inches apart in the form of an edging to a border, or the rows may be disposed 10 inches apart across any convenient border. The best curled forms are, unfortunately, the least hardy, those found in many old gardens connected with farmhouses, and which are usually self-sown, being far more hardy, and often surviving when the former have quite disappeared. A very little shelter will frequently save Parsley, especially if the position is naturally somewhat high and dry. At this time of year it is advisable, therefore, to thin out the rows of plants, the thinning being dibbled among fruit trees. They will require to be watered occasionally, after which they will take care of themselves. Those who have frames, notably those span-roofed in form, to spare during the winter will do well to utilise one or more of these for the protection of Parsley. In anticipation of this, a bed or beds of the right size should be formed now and planted, the frames being put on any time before severe frosts are experienced. We mix short manure freely with the soil, and dibble out the plants about 6 inches apart each way.

SMALL SALADING.

Radishes require to be sown frequently or at rather less than fortnightly intervals during hot weather, and these may be continued with rather less frequency till the end of September. The Turnip-rooted varieties are the best for the summer crops, but for the autumn the preference may well be given to the long red forms, such varieties as Wood's Early Frame and French Breakfast being also sown for the latest supplies. Those who appreciate the Black and White Spanish or winter Radishes should sow seed of these now, the roots being drawn as required up to December, the remainder of the crop being then lifted and stored in dry sand. Radishes generally fall on hot poor land, and at this time of year the seed is apt to germinate irregularly unless the ground is watered prior to its being sown. The small, short-topped varieties may be thinned to about 3 inches apart, while the winter sorts should be drawn from when rather small and be eventually left 6 inches apart each way. Corn Salad or Lamb's Lettuce is not a popular form of salading in this country, but it is required in some establishments and might prove serviceable in others. When raised in August the plants frequently attain a rather large size, and eventually produce a small blanched and fairly tender heart. The later raised batches do not, as a rule, heart in, but either small plants or side leaves are used in mixed salads. It succeeds well when sown on an early border in succession to some kind of early crop for which the ground was well manured. The seed may be either sown broadcast or thinly in shallow drills, drawn about 8 inches apart, finally thinning out the plants to about 4 inches apart. Two or three sowings at fortnightly intervals, commencing at once, ought to be made, the most tender leaves being obtained from the younger plants. Some light protection ought to be given during frosty weather. Curled Chervil ought also to be sown now, and a second sowing a fortnight or three weeks hence. A few short rows 6 inches

apart or a patch sown broadcast, and in either case afforded the protection of a frame in severe weather, will yield daily gatherings all the autumn and winter, only a few leaves being required for assisting to flavour a salad. Green forced Tarragon is preferred during the winter, but if this cannot be provided, some of the old tops should be cut and gradually dried as a substitute for flavouring soups. Chives should be cut down frequently, the tender young shoots following upon this being most liked. Weekly sowings of Mustard and Cress may still be made in the open, but when colder weather intervenes the seed ought to be sown on the surface of boxes of soil and set in gentle heat. W. I.

STOVE AND GREENHOUSE.

WORK IN PLANT HOUSES.

STOVE.—IMPATIENS.—I. Sultani and I. Hawkeri are both desirable plants for a warm house. Both kinds are well adapted for use in a small state, as they will bloom freely when little more than rooted cuttings. When small they have a charming effect used with such things as *Isolepis gracilis*, *Peperomias*, *Fittonias*, and *Panicum variegatum* as an edging to the front of the side stages in a stove. In this way the bright colours of the flowers stand out from the distinct forms of the foliage of the plants named. For using in this and the various other ways that suggest themselves to those who have an eye for the effective grouping of plants, frequent propagation is necessary to keep up a stock of the required size, as they soon grow too large for massing in this manner. Large specimens are equally effective, provided they are well grown; but to have them in the best condition when they have attained size, the growth must be close and compact. Straggling examples of these and other subjects of a like description should never be tolerated where anything like successful cultivation is aimed at. To have the plants in good condition they must be kept near the glass in a light house or pit, giving them no more shade than is found requisite to prevent the leaves getting injured by the sun. To keep up the growth necessary for the production of flowers, manure water should be given once a week from the time the roots have got well hold of the soil.

IMPATIENS JERDONIÆ.—This is a gem. It does best when grown in pots, these being plunged in Moss in wire baskets of suitable size, and suspended from the roof over the paths. In this way the succulent, fleshy stems attain the requisite solidity and stout, sturdy growth which enables the plants to bloom profusely, and also to show the brilliant colours of the flowers. This Impatiens is rather a delicate subject to deal with in winter, as its fleshy stems are liable to rot in the dormant season if the roots get a little too much moisture or the plants are subjected to a lower temperature than they like. This often occurs with examples that have flowered freely during the preceding summer; therefore it is well to strike some cuttings now. To get well furnished examples in a short time several may be struck in one pot, and afterwards grown on together. The cuttings should consist of the smaller shoots that are produced freely on the stronger growths of vigorous plants. Take these off at the base, and put them four or six together in 3-inch pots filled with sand. Do not confine them closely under propagating glasses or in a striking frame, in the way that most things require to be, or they will be liable to decay. Neither must the sand be kept too wet, just as much water as will prevent the cuttings shrivelling being the quantity necessary. Stand them on a shelf near the glass and shade from the sun. When sufficiently rooted move them just as they are into pots an inch larger. Fill one-third of the pots with crocks. The best material to grow this Impatiens in is a mixture of one part sand and chopped Sphagnum to two of fibrous peat, such as is suitable for Orchids. Break the peat in bits the size of cob nuts. A temperature of 60° in the night during winter will suffice, and through the dormant season the soil must be kept nearly dry.

ROSES.—There can be little question that the Tea varieties especially when required for pot culture are best when propagated from cuttings. Those who are the least observant cannot fail to have noticed that in the pot culture of Tea Roses, as the plants increase in strength the best shoots are those that come from the base, and which as they annually spring up keep getting stouter each season until the plants attain their greatest strength. Needless to say on own-root plants the shoots that push from the bottom cannot fail to be right, whilst in the case of grafted or budded plants they sometimes come from the stock. The Tea varieties, when the plants have been forced or have been allowed to flower with greenhouse warmth, will yield cuttings in the right condition for striking at various times during the spring and summer up to the middle of August, after which there is scarcely sufficient time for them to get established before winter; though where they can be stood in necessary warmth to continue their growth the plants may be kept going up to November. The cuttings should consist of shoots that have the wood at the base in something like a half-ripened condition; if too soft they will most likely damp off; if the wood is too hard they will be long in rooting, and after they have struck will move slowly. A little attention to this matter will do more to show those who have not had much experience in striking Roses at this season than all that could be said or written on the subject. Plants that have been some time stood out of doors after they had flowered will in most cases have now made shoots that will be in right condition. Choose such as are of medium strength; those that are very strong will be too long for use, and the weaker ones will be a long time in getting into free growth, as in common with most other plants Roses raised from weakly cuttings move very slowly. Take the shoots off with a heel and put them four or six together round the sides of 5-inch or 6-inch pots filled with sand. Water immediately so as to prevent the leaves flagging. Stand the pots for a fortnight in a cold frame which must be kept closed at all times unless in the middle of very bright days, when a chink of air may be given by raising the light a little at the back. Shade from the sun, as the leaves must not flag. Syringe overhead in the afternoons at the time of closing the lights. The pots should stand on a few inches of fine coal ashes to prevent worms getting in. As soon as the cuttings are callused at the base they should be moved to a gentle hot-bed where few will fail to strike. This will be found a more certain way of proceeding than if the cuttings were at once put in heat before they had time to callus.

ROSES, ESTABLISHED PLANTS.—Plants that were struck in spring, and have now filled the small pots they occupy with roots, should have a shift. If the work is longer delayed there will not be time for them to take possession of the new soil before the season is too far advanced. Do not give larger pots than necessary, those 5 inches or 6 inches in diameter being, in most cases, big enough for plants that have been struck this year. Roses in all their stages of growth will do with smaller pots than many things require, especially the Tea varieties, whilst they are young. Good yellow loam, with a liberal addition of rotten manure and some sand, is the right compost. When inferior loam is used they make little progress.

OLDER ROSES.—Plants that have flowered, and are now out of doors, must not want for attention in being regularly supplied with manure water, and also being kept quite free from insects and mildew.

HARD-WOODED GREENHOUSE PLANTS.—There are only a few species of hard-wooded greenhouse plants which are not better for being stood out in the open air towards the end of summer, for a time, longer or shorter, according to the nature and requirements of the particular species or varieties. The advantages of exposing the plants in question to the open air are that it to some extent checks the disposition to make further growth, tends to the ripening and solidifying of that which has been made, and in this way helps in the formation of the flower-buds that are to expand

during the ensuing spring. In fact, the majority of the kinds of hard-wooded greenhouse plants, even if otherwise properly treated and grown in light houses, cannot be depended on to bloom, except sparingly, unless they are for a time out of doors. Another matter gained by open-air exposure is that in the case of the many kinds of plants that are liable to be attacked by mildew, the leaves get so much harder out of doors than when the plants are kept wholly under glass, that they are less likely to suffer from the parasite. Amongst the plants that are benefited by being stood out for a time are all the varieties of Heaths, the Boronias, except *B. serrulata*, *Eriostemons*, *Aphelexis*, *Acacias*, *Myrtles*, *Cytisus*, *Dillwynias*, *Pleroma elegans*, *Neriums*, *Polygalas*, *Eupacrias*, and *Hedaromas*; the last named should not be turned out until after the flowers are set; if stood outside before, it rarely happens that the plants bloom properly. The check which exposure to the air gives seems to stop all further growth. A month outside is in most cases sufficient to effect the hardening process, so that if the plants are immediately stood out and allowed to remain until the middle of September. They may then be got in and put where they are to remain during the winter. For the first few days they should be placed where they will not be fully exposed to the sun in the middle of the day, for if suddenly subjected to its full force it often injures the leaves. Afterwards an open situation, yet one in which they will be sheltered from the wind, is the best for them. The pots should have a piece of mat or a bit of any kind of material, such as an old blind that is past use, tied round them. Syringe overhead in the afternoons and be careful to see that the roots do not want for water in dry weather. It is well to look over the stock morning and evening, as when the soil is full of roots it dries quickly. On the other hand, drenching rains, such as often come with thunderstorms, should be guarded against. The best means of preventing the balls getting saturated in this way is to have a light wooden framework with a span roof on which temporary blinds can be put. These can be let down when there is an appearance of heavy rain. Where a contrivance of this description exists it can be turned to good account in many ways, such as for hardening off bedding plants and other things in spring, and for standing *Chrysanthemums* under in autumn to protect them from the frosty nights which frequently come before it is desirable that they should be taken into the house, and which sometimes seriously injure the bloom. Where protection of this kind is not available it is well to tilt valuable plants over on their sides rather than allow the balls to get too wet. T. B.

Lantanas in bloom.—We have now in our gardens some very pretty varieties of *Lantana*, and where a conservatory has to be kept gay at all seasons they are extremely useful when grown in pots and employed for the purpose, as with a little attention their bright blossoms may be had at almost any season of the year. For flowering in the shape of little bushes in 5-inch and 6-inch pots early in the season the cuttings should be struck during the preceding summer, and after being potted off encouraged to make as sturdy a growth as possible by stopping them and allowing them full exposure to the light. The effect of this treatment is that by the winter they are neat little bushy plants, when they should be kept fairly dry and in a partially resting state till the return of spring. If then shifted into larger pots and kept in a gentle heat they will soon commence to flower. To bloom at this season the cuttings must be taken in early spring, and grown on till they flower. They need liberal treatment, and at all times a very dry atmosphere must be guarded against, as it is very favourable to the development of red spider, which quickly disfigures the foliage. When grown in pots weak liquid manure is of great service, and an occasional dose of soot water will serve to keep the foliage in good condition. The plants may be also planted out during the summer months, when they will both grow and flower well. Out of the long list of varieties a few good ones are: *Pluie d'Or*, light yellow; *La Neige*, white; *Ne Plus Ultra*,

orange when first opened, gradually changing to magenta-purple; *Distinction*, bright orange-red; *Mine d'Or*, deep yellow; *Don Calmet*, pink; and *Eclat*, orange-crimson.—H. P.

Diplacus glutinosus.—We now have many seedling varieties of this plant, and consequently a far greater range of colour than was at one time to be obtained. The old-fashioned form with a kind of orange or salmon-buff-coloured flowers is by no means the only one to be met with, as occasionally plants may be seen with nearly white blossoms, or rather a kind of whitish yellow, while, on the other hand, there are some much brighter than the ordinary kind, notably *punicus*, *aurantiacus* and *Sunbeam*. None of them require any special treatment, for they may be planted out as soon as all danger from frosts is over, and will then flower beautifully during the summer months, while they may be grown altogether in pots, and are then very useful for the greenhouse at this season. Cuttings strike readily at almost any time, and besides this, seeds are frequently produced, so that young plants can be quickly obtained from one or the other of these sources.—T.

Peperomia resedæiflora.—This is by no means a showy flowering plant, yet it is very pretty, sweet-scented, and remains in bloom a considerable time. Unlike many of the *Peperomias*, the leaves of this are not at all variegated, but of a dark green colour. The foliage in fact is somewhat scanty, being principally confined to the lower part of the plant, the upper portion of which is composed of large, loose, pyramidal panicles, which are borne in an erect manner. The flowers are small and disposed in little elongated clusters, somewhat as in a few of the *Resedas*, but the entire cluster seldom exceeds 1½ inches in length. The flowers are borne on the tips of the branching panicle, and from their weight droop slightly. This *Peperomia* is a shallow rooting subject, and on that account a very good plan is to grow it in a large pan, as it is far more effective in a mass than when isolated in small pots, and the pan is less cumbersome than a large pot. It will grow in any light soil, and being a native of New Grenada it requires the temperature of a stove.—H. P.

Crinum Moorei.—Among greenhouse plants that flower at this season the above-mentioned *Crinum* must be given a prominent place, for unlike many members of the genus it can, with ordinary care, be depended upon to bloom every year. The large pink blossoms certainly do not remain long in perfection, but as several are borne in an umbel, the same plant will retain its beauty a considerable time, and where a few are grown a succession is often kept up for a lengthened period. The plants require much the same treatment as the *Agapanthus*, that is to be potted in good loamy soil with an admixture of sand, such compost in fact that will remain sweet and open for years, as this *Crinum* flowers best when the pots are full of roots. Being a native of Natal, it simply requires to be kept from frost during the winter, or planted deeply and protected by decayed leaves or some other substance, it will often survive some years out of doors in our southern counties, but, generally speaking, to be seen at its best, Moore's *Crinum* requires to be treated as a greenhouse plant. A very good plan is, after flowering, to turn the plant out of doors in a sunny spot if possible, and if plunged in coal ashes all the better, as the roots are kept in a uniform state of moisture, and the ashes prevent the ingress of worms. Before frost sets in the plants should be removed under glass and placed in a light part of the greenhouse to pass the winter, and at that time of the year they will only require sufficient water to keep the roots fresh. In the spring the water supply must be increased, and occasional doses of liquid manure will be an advantage. It is increased by offsets, and seeds frequently ripen which germinate quickly, and the plants soon attain a considerable size. Thrips are the worst enemies of this *Crinum* if it is kept in too dry an atmosphere.—T.

The Aristolochias.—The note in THE GARDEN, July 20 (p. 54), on *Aristolochia ridicula* induces me to add another on *A. triloba*, a species

which has blossomed here this summer and is again showing flowers, which are about 3 inches long, dull brown in colour, and in shape closely resemble medium-sized pitchers of *Nepenthes*, and when removed from the plant are almost always taken to be such. The lid—for there is a lid over the orifice like in the Pitcher Plants—is elongated into a tail-like process 3 inches or more in length. What the use of such an appendage can be it is difficult to guess. The leaves are three-lobed, as the name implies, and the plant but for the absence of tendrils looks like a *Passiflora*. It is of medium growth, and flourishes in a pot in an intermediate house. It seems strange that these remarkable plants with their grotesque flowers are not more cultivated. There are probably not half a dozen collections of them in the kingdom. Of tender kinds I have succeeded in obtaining *A. floribunda*, *A. Duchartrei*, *A. elegans*, *A. triloba*, *A. tricaudata*, and *A. gigas*. I saw a week or two ago at Kew two or three other kinds which I do not think are obtainable in the trade. Loudon gives a long list of them, and many others have been discovered since his time, but it is doubtful if many of them are now in the country. With heat and room there appears to be no difficulty in growing them, but with the limited space at my command I can scarcely do the robust kinds justice. The flowers of the hardy sorts are pigmies compared with their tropical relatives. That paradise of fine plants, South America, seems to be their headquarters, where it is said the blossoms of *A. gigas* are so large that the children wear them for hats.—J. M., *Charmouth, Dorset*.

ORCHIDS.

W. H. GOWER.

KCELLENSTEINIA GRAMINEA.

THE plants comprising this family are not remarkable for either large flowers or gorgeous colours, but are for the most part plants of modest beauty. They were formerly included in the genus *Maxillaria*, but were separated therefrom by Prof. Reichenbach in *Bonplandia*. The plants included under this heading have fallen out of favour in our Orchid gardens, and I was agreeably surprised to find the species recently flowering in the collection of Mr. Measures at Cambridge Lodge, Camberwell. The plant in question is a native of British Guiana, a country whence one or two other species have reached us, whilst others again appear to be scattered over the mountainous regions of the United States of Columbia. These latter kinds require cooler treatment than those from Demerara and the surrounding districts, which require a temperature similar to that of the *Cattleya* house, but somewhat more moisture should be maintained in the atmosphere during the winter months. *K. graminea* is a plant having no pseudo-bulbs, but the shoots are tufted, and they send out a profusion of stout fleshy roots, which require but a very small portion of *Sphagnum* about them. The leaves are erect, slender, and from 3 inches to about 6 inches high, whilst the spikes, which are freely produced, are longer than the leaves and bear numerous flowers, each some half an inch across. The sepals and petals are about equal, white, faintly stained with yellow, the basal half being transversely streaked with narrow lines of chestnut-brown; lip three-lobed, the side lobes erect, marked with the same colour as the sepals. It is an exceedingly pretty little plant, and succeeds best when hung up in a position near the glass. A somewhat stronger and stouter plant which I noted flowering a short time ago is *K. ionoptera*, the flowers of which are white in the sepals with mauve or lilac tips, the petals being more or less suffused with a deeper hue; the lip also being trans-

versely streaked with narrow lines of deep purple. This species is said to come from Peru, and it thrives best in the temperature of the *Odontoglossum* house.

Cypripedium Parishii.—From Mr. Fraser, of the Arddarroch Gardens, comes a fine spike of this bearing five flowers, which are destitute of much of the green which was the prevailing hue of the earlier introduced plants of this kind, and which no doubt led to the genus not being so universally appreciated, for green flowers can never long retain favour. In this form the dorsal sepal is white, the lower one being streaked with green; the petals are greenish-white at the base, passing into rich brown, the lower edge furnished with a few black warty hairs; lip greenish brown. This is by far the most cheerfully coloured variety I have yet seen. It is a handsome plant, with broad, rich deep green leaves. It requires considerable heat, but will not thrive in a mixed collection so well as many kinds. It commemorates the sender of many fine new Orchids from Burmah, whence this plant also comes.—W. H. G.

Govenia deliciosa.—Flowers of this charming terrestrial plant come to hand from Mr. G. Turner. The plant is a native of Mexico, and forms an underground tuber. The stem grows to about a foot or a foot and a half high, and bears a pair of strongly ribbed leaves, somewhat resembling those of the evergreen section of *Calanthes*. The spike rises from between the leaves, and bears a terminal raceme of sweet-scented flowers, which have pure white sepals and petals, the latter having a few transverse streaks of dull red; lip yellow at base, faintly streaked across with dull red, front part of lip white, profusely marked with round spots of purple. The pot in which it is grown should be well drained, and the soil consist of peat, light loam and leaf mould made tolerably sandy. The plant should be grown in a cool house, and during its resting season care must be taken to prevent its becoming too dry. I trust we may have many more of these gems introduced. It is somewhat disgraceful to our gardeners that these terrestrial species have been so neglected.—W. H. G.

Cattleya Hardyana.—This superb *Cattleya* was long confined to the collection of Mr. Hardy, of Timperley, in Cheshire. Last year, however, several plants were introduced by Mr. Sander, of St. Albans, one of which is now flowering in the fine collection of Mr. Measures, of The Woodlands, Streatham. It is a supposed natural hybrid between *C. aurea* and *C. gigas*. The flower is of large size and very fragrant, the sepals and petals being upwards of 8 inches across, and deep purplish-mauve in colour, resembling those of a good form of *C. gigas*. In size and general outline the lip resembles that of *C. aurea*, the front portion rich magenta-crimson, veined with deep purple, whilst the throat and disc are netted with lines of golden-yellow and bear at the sides the rich yellow eye-like markings so conspicuous in *C. gigas*. It is one of the most gorgeous of this truly magnificent genus, whilst flowering through the late summer and autumn months it is doubly valuable. It requires the same attention in ripening its growth after flowering as its two parents, and it would appear to be freer in its flowering habit than either of them.

Cattleya Dowiana.—From Mr. Fraser, gardener to Mr. White, of Arddarroch, comes a flower of a beautiful variety of this plant, the sepals and petals being of a deep nankeen-yellow, and the lip large, of a rich deep purplish crimson, streaked with lines of gold. Mr. Fraser says: "I have a better show of this species than is generally met with, having several dozen showing flower and about a dozen and a half open. These are flowering early, but with the numbers I have I hope to maintain the display throughout the autumn." He says further: "I am surprised this species is not as largely grown as *C. Mendeli*, *C. Trianae*, *C. Gaskelliana* and many others." Its extreme beauty alone should merit a large share of attention from Orchid growers, and its time of flowering is also greatly in its favour. Its reputed shy-flowering nature tends

greatly, no doubt, to this. To ensure greater success in its flowering, the pseudo-bulbs require to be well ripened after flowering. This must be done without starting the eyes, which lie dormant until spring. Neglect of this is one of the chief causes of failure in obtaining bloom in due season. Great care is also necessary in supplying water between the time of flowering and the starting into growth in the spring.—W.

Catasetum Bungei.—This superb Orchid is now flowering in many collections. It is free growing and an abundant bloomer, its very large ivory-white flowers being very conspicuous and beautiful, and lasting a long time in full beauty. It was introduced to cultivation a few years ago only by M. Linden, of Brussels, and a coloured figure of it appeared in *THE GARDEN*, Vol. XXXIII., p. 388. It thrives in either pot or hanging basket, and enjoys strong heat and moisture when growing, and during winter it may be kept quite dry. For soil, fibrous peat and light turfy loam suit it admirably.—G.

Lælia callistoglossa.—This grand Veitchian hybrid is now flowering in Mr. Tautz's collection. It is a most superb plant, but I believe still very rare. Its parents were *L. purpurata* and *Cattleya gigas*. The sepals and petals are rosy lilac, the latter much broader than the sepals and waved at the edges. Lip very large, the front portion broad and spreading, with undulate margin, and rich deep purple, passing into maroon at the base. The throat is pale yellow, freckled and streaked with purple. The flower measures upwards of 8 inches across.—W. H. G.

Saccolabium coeleste (J. Myers).—The flowers sent are of a light form of this lovely species, and I can hardly determine which is really the most beautiful, the kind in which the tips of the sepals and petals are light azure blue, with the lip of the same hue, or the form in which the flower is marked with rich deep blue. The plant is of quite recent introduction. Mr. Shuttleworth, of Clapham Park Road, received a quantity from Siam about two years ago, and he tells me it comes from a very hot and moist district. I have seen the plant thriving best when grown in hanging baskets and fully exposed to sun and light.—W. H. G.

A notable Aerides Lindleyanum.—A fine specimen of this plant with six very large and much-branched spikes is now flowering in Mr. Measures' collection at Camberwell, and as a reminder to those who speak of Orchids not surviving long under cultivation, I found, by inquiries, that this very plant is one that used to be under my charge thirty years ago. Of course it was smaller at that time, but it is now equally as vigorous as then, and, I may add, it has been subjected to cool treatment during the whole of that period, and is now magnificent with its large and handsome flowers, which are superior in size and richer in colour than those of *A. crispum*, to which species it is nearly allied, and of which by some it is considered a variety.—W. H. G.

Phalænopsis casta.—I am asked if the flowers sent by a "Critical Reader" of *THE GARDEN* are those of *P. Sanderiana*. They are not, but are those of the species quoted above. It is a supposed natural hybrid, and appears to partake somewhat of the characters of *P. amabilis* and *P. Schilleriana*. The flowers are large, the sepals and petals pure white, faintly tinged with rose, and this character would appear to have caused our reader to imagine it to be *Sanderiana*, from which kind it is very distinct. Lip also white, the side lobes at base spotted crimson, and stained with yellow on the edges. The anterior lobe is also stained and spotted with red at the base.—W. H. G.

Cattleya Gaskelliana.—From "C. J. W." comes a boxful of flowers of this kind to show, as he says, their great variation. They certainly are superb and wonderfully various in their markings. This kind is very useful, flowering, as it does, at this season. The plant blooms upon the young growth as soon as it is mature, and produces flowers as variable as those of *C. Mossiae*, with which it

grows well, and commences to bloom after that kind is over. This plant was introduced by Mr. Sander, of St. Albans, and comes, I believe, from Venezuela.—W. H. G.

Calanthe Halli.—We recently saw several plants of this beautiful new white winter-flowering Orchid. It is a broad-flowered form of a greater size and substance than the white *C. Veitchi*, and it should be sought after by all who delight in a display of these gems in winter. We believe the whole of the stock of this beautiful plant is still in the hands of its raiser, Mr. Hall, saving a single plant, which took the fancy of that keen admirer of a good Orchid, Baron Schröder, of The Dell, Egham.

Odontoglossum mirandum.—This is not one of the massive flowered species, but it is yet always effective and pleasing. It is amongst the most easily grown. In general habit it is not unlike *O. crispum*, but the flowers are very different; the sepals and petals are brown, the tips and edges being yellow; lip three-lobed, anterior lobe bright brown, tipped with yellow, the basal part white, more or less suffused with reddish-purple. This was recently flowering in Mr. Smee's beautiful garden, and from a growth that was made in the open air last season.

Vanda suavis.—I am glad to find this beautiful *Vanda* becoming more popular every day; the present species is flowering profusely in Mr. De B. Crawshaw's collection at Rosefield, Sevenoaks. Some plants about 2 feet in height are bearing three spikes, on some of which are as many as thirteen flowers. These plants are grown in hanging baskets, and are in this way freely exposed to the light and rendered very effective. In the same collection is also flowering *V. tricolor planilabris*, one of the very finest of the tricolor varieties. Its flowers are of large size and richly coloured. Both forms are deliciously sweet-scented.—W. H. G.

Aerides Schröderi.—This fine plant, which so worthily commemorates one of the growers of the days gone by, Mr. J. H. Schröder, of Stratford, has never been imported but once, and is a handsome plant with rich green foliage. It produces a fine branched spike of very fragrant flowers, the sepals and petals being waxy white, tinged and freckled with rosy lilac; lip three-lobed, side lobes small, middle lobe very large, of a rich deep magenta. It is a great pity that this beautiful plant still remains so rare in our gardens. It is now flowering in Mr. Measures' fine collection of *Aerides* and *Vandas*.

SHORT NOTES.—ORCHIDS.

Cattleya virginalis.—This is a form of *C. eldorado*, with flowers of the purest white, saving the orange in the throat. It is a chaste and beautiful kind, and is now flowering with Mr. Measures at Camberwell.

Odontoglossum vexillarium albescent.—This is an exquisite form of this species now flowering in the Cambridge Lodge collection at Camberwell. The sepals and petals are white, delicately tinged with rose; lip white, slightly streaked with crimson on the disc. It is one of the late-flowering varieties, and hence is doubly valuable.

Phalænopsis violacea.—A very beautiful form of this plant is now flowering in Mr. Sherwood's pretty garden, Dunedin, Tulse Hill. Its rich, rosy-purple flowers are very attractive and fragrant. There are numerous plants of this family growing in hanging baskets with a mixed collection of store plants, and Mr. Jones, the gardener, appears to have acquired the art of growing these plants, which appear to trouble so many.

Brassia pelicanum.—This is a curious and interesting species, now flowering with Mr. Hall at Upper Tulse Hill. The spike is erect, and the numerous flowers are somewhat closely set; the sepals and petals are creamy-white, faintly tinged with green, and have a single longitudinal streak of deep chocolate in the centre of each at the base, whilst the lip is pure white. I have never seen the plant before. As *Brassias* are again becoming popular, it is a species which should receive the attention of the lovers of this genus.

Dendrobium stratiotes.—The fine variety,

noted as flowering in Mr. Sherwood's garden at Tulse Hill a long time ago, is still in full beauty, and is a striking example of the very long time this species retains its blooms. It is a charming kind, which deserves to be largely grown by all Orchid lovers. It loves strong heat and bright sunshine. The plant in question is growing on a block of wood, and is suspended near the roof-glass, where its requirements are duly supplied.—W. H. G.

Cypripedium at Camberwell.—This large collection of the Slipper Orchids is in a wonderfully fine state of health, and its treatment confirms many of my former remarks against the use of the syringe. Mr. Simpkins, the gardener, assures me that for the whole year he has prohibited the use of the syringe to these plants, and their condition is sufficient evidence of its being the right system to adopt; of course, the atmosphere of the house is kept well charged with moisture, but the leaves are never wetted.—G.

Cattleya eldorado splendens.—A very fine form of this plant I recently noted flowering with Mr. Horsman, of Colchester, the lip being large, the throat a deep orange-yellow, in front of which is a band or ray of white, with a broad marginal band of rich deep purple tinged with violet. The peculiar square form of the lip in front is very distinctive. It is from the district of the Rio Negro, and therefore requires more heat than the majority of *Cattleyas*.—W. H. G.

Cypripedium Curtisi.—The forms of this plant recently imported by Mr. Sander have as a rule turned out of great merit, but by far the largest flower of this species I recently noted with Mr. Hall at Tulse Hill. The bloom was quite double the size of that of any *Cypripedium* I ever saw, and this was from the last importation of Mr. Sander. There seemed to exist some doubts in the minds of many that the plants would not prove true when first they arrived in this country.—W. H. G.

SOCIETIES AND EXHIBITIONS.

THE CARNATION AND PICOTEE UNION, OXFORD.

THIS exhibition, which generally takes place about mid-way between the London and Manchester Carnation shows, was held as usual in Mr. E. S. Dodwell's garden, Stanley Road, Oxford, on August 1, and was the most extensive yet held in the five years during which the Union has been in existence. Nearly 1500 individual blooms were shown in the various classes, the flowers being arranged in a tent erected in the garden. Space also had to be found for many of the flowers in one of Mr. Dodwell's Carnation houses. In addition, Mr. Dodwell's garden was one mass of Carnation blooms, for besides some 3000 pots containing two and three plants each, a large number were planted in the borders. The weather was all that could be desired, and there was a large attendance of visitors.

The striking features of the Oxford Show were the rich colouring of the bizarre Carnations which were present in great numbers, the scarlets being especially striking. The selfs and fancies were very attractive indeed, and the rapidly increasing yellow grounds were seen in their very best character and in very large numbers. The multiplication of yellow ground varieties during the past year or two is a remarkable fact in connection with the culture of the Carnation.

Out of eleven competitors in the class for twelve blooms of Carnations, dissimilar, Mr. Tom Lord, who grows his flowers in a breezy spot near to Todmorden, was placed first with very fine and bright coloured examples of crimson bizarre Master Fred, scarlet bizarre Reginald Power, pink and purple bizarre John Harrison, s.b. George, s.b. Admiral Curzon; p.p.b. Deedie, r.f. Biddy Malone, p.p.b. William Skirving, c.b. Shirley Hibberd, s.f. John Ball, p.f. Squire Trow, a very old variety, and s.b. Robert Houlgrave, Mr. Samuel Barlow's fine s.b. shown in grand form on this occasion. Second, Mr. Robert Sydenham, Roseleigh, Birmingham; Messrs. T. B. Thomson & Co., Sparkhill Nurseries, Birmingham,

were third, and five additional prizes were awarded. There were thirteen exhibitors of six varieties; Mr. Thomas Helliwell, The Hollies, Todmorden, was placed first with very fine and bright flowers; second, Mr. John Witham, Bank View, Hebden Bridge; third, Mr. Thomas Bower, Horton Green, Bradford. In all nine prizes were awarded.

The Picotees were generally very fine and numerous, the Todmorden flowers particularly pure and solid in the petal. Out of twelve competitors, Mr. Tom Lord had the best twelve blooms of the following varieties: H.r.e. J. B. Bryant, h.r.e. Lady Louisa, h.p.e. Zerlina, h.r.e. Brunette, h.r.e. Seedling 250, l.r.e. Thomas William, l.r.e. Nellie, h.r.e. Mrs. Sharpe, h.r.e. John Smith, l.p.e. Ann Lord, l.p.e. Baroness Burdett Coutts, h.p.e. Undine; second, Mr. Martin Rowan, Manor Street, Clapham, also with a very fine lot of blooms; third, Mr. R. Sydenham. Altogether eight prizes were awarded. In the class for six blooms, eighteen competitors contended for nine prizes, Mr. John Witham being placed first; second, Mr. J. Lakin, Temple Cowley; third, Mr. A. W. Jones, Birmingham. Nine prizes in all were awarded.

I have already remarked upon the great beauty of the selfs, fancies, and yellow grounds. There were thirteen stands of twelve blooms, eight prizes being awarded. Mr. Read, gardener to Mr. George Dodwell, Oxford, was first with grand blooms of Gladys, soft pink; Joe Willett, rose and crimson, a singularly bright flower; Schlieben (Benary), buff-pink and pinkish slate; Theodore (Benary), a kind of lilac or bluish slate; Emma Lakin, white; and seedlings; second, Mr. T. E. Henwood, Hamilton Road, Reading, with a very fine lot, consisting of Governor, white; Joe Willett, Alarmist, Black Knight, maroon; Rose Celestial, pale rose, very fine; Annie Douglas, Celia, yellowish buff; Dorothy, Agnes Chambers, apricot; Cardinal and Germania. Mr. R. Sydenham was third, and Mr. Lakin fourth, both with fine and striking blooms. There were nine stands of six blooms competing for the same number of prizes, and here Mr. A. W. Jones was first with Mrs. McLaren, apricot; Mrs. Price, a very fine pinkish rose self; Sir Toby Belch, Mary, and The Bride; second, Mr. Hedderley, Bulcote, Notts. Mr. F. Hooper, Bath, was third, and Mr. A. R. Brown, Birmingham, fourth. Nine special prizes were offered for six blooms of the fine strain of Kilmurphy yellow ground flowers raised by Mr. Gyles, and there was this number of competitors. Here Mr. Reed was again first with very fine blooms of Alfred Grey, Tournament, Patricienne, Queen of Hearts, Exile, and a seedling; second, Mr. T. Nutt, Oxford; third, Mr. Geo. Chaundy, Oxford; fourth, Mr. R. Sydenham. In the class for six blooms of yellow grounds, any raiser's varieties, there were seventeen competitors for nine prizes, Mr. W. Read taking the first prize with Mrs. Milner, Lemon Drop (Rawson), in the way of Agnes Chambers, but deeper in colour, and four seedlings; second, Mr. F. Hooper; third, Mr. J. Lakin, whose stand included a very fine bloom of Germania. Mr. T. E. Henwood was fourth.

In the classes for single blooms there were large numbers, the bizarre Carnations being very attractive. The premier Carnation was a splendid bloom of s.b. Robert Houlgrave, shown by Mr. T. Lord. The premier Picotee was h.r.e. Lady Louisa, shown by Mr. T. Lord. The premier fancy, Dodwell's 167, flaked with pink and bluish-slate on a pale sulphur ground. The premier yellow ground was Germania, a very fine bloom indeed, from Mr. M. Rowan. Several new varieties of Carnations and Picotees were staged, but no certificates were awarded. Among miscellaneous exhibits was a very fine lot of yellow ground and self flowers from Mr. C. Turner, Royal Nursery, Slough; and Messrs. Jeffries and Son, nurserymen, Oxford, had some pretty bunches of blooms set up with their own foliage.

Another children's flower show.—It was odd enough that the day following my brother's children's flower show at Ealing I should have been engaged judging at another children's exhibition at Englefield Green, near Egham, yet of a very diverse

nature. As at Ealing, the school children of the large parish of Egham are interested, some two hundred being for the purposes of the show members of the local society, each paying 4d. yearly in the senior division, viz., from twelve to seventeen years of age, and 3d. per year in the junior division up to twelve years of age. For that amount on showing their cards of membership each child receives in the spring six rooted cuttings of diverse plants such as Pelargoniums, Fuchsias, Lobelias, Musk, &c., and six packets of seeds of hardy annuals. These have to be grown in pots, pans, or boxes, and exhibited at the summer show for liberal prizes. The seniors and juniors have separate classes for six plants from cuttings, or as many as they have saved, also of annuals. They have also group classes comprising both kinds of plants, so as to enable those unable to save all or most of their plants and annuals to compete in. The product was a remarkable one; hundreds of plants, more or less well grown and blooming, and the same of annuals were shown, not a few showing excellent culture. The juniors, doubtless having enjoyed for their plants more parental oversight, had the best in all classes. Curiously enough, in a district teeming with wild flowers, very few bunches were shown, the attention of the youngsters evidently being turned more gardenwards. A digging competition for boys was also a most interesting feature, the work generally being well done. I have suggested that drawing drills for seeds at regular intervals shall be added to this competition, as presenting further useful technical instruction.—A. D.

NOTES OF THE WEEK.

Cyrtanthus Macowani.—I think this *Cyrtanthus Macowani* one of the most beautiful of bulbous plants. So easily grown and the result so eminently satisfactory.—A. KINGSMILL, *Harrow Weald, Stunmore.*
** Brilliant in colour and graceful.—ED.

Brockwell Park was formally opened on Monday last. It is one of the finest open spaces round London, and situated between Herne Hill and Dulwich.

National Co-operative Festival takes place at the Crystal Palace on Saturday next, August 17, and promises to be even larger than the one held last year. Copies of the schedules and other information may be had by applying to Mr. Edward Owen Greening, the secretary, at 3, Agar Street, Strand, W.C.

Clematis coccinea is a good hardy kind in full bloom now, and rambling over a stump, pole or arbour makes a distinct break from the usual run of things. It is quite hardy, the leaves small, and the flowers scarlet. Every good garden should have it, though less showy than many other kinds of hardy Clematis.

Aster ptarmicoides is a beautiful late summer Aster, and now a cloud of small white flowers in the Broxbourne Nursery. It is a thoroughly useful perennial, and the growth wiry, each of the stems having a bunch of white flowers crowded together in a dense flattish head. A bold mass of it on the border would look well.

Tufted Pansies have a lengthy season. In a nursery near London they have been a sheet of flowers since the spring, and the plants are now covered with bloom, especially such kinds as Sovereign, Queen of Spring, both yellow-coloured varieties, but the former is of dwarfer growth; Duchess of Sutherland, lavender; Countess of Kintore, Tory, Mrs. Grey, and Countess of Hopetoun.

Clematis Jackmani is in full bloom everywhere, and there is no finer autumn flowering climber for running over arbours, trellises, pillars, or wreathing round chains. The finest mass of it we have seen this season is in Messrs. Charles Lee's nursery at Isleworth, where the plants make a delightful cloud of blue, as they are several feet high and scarcely a leaf appears above the dense canopy of bloom. Ivy and this Clematis make a rich mixture if the evergreen climber is not permitted to stifle its less vigorous associate.

Sollya linearis.—This charming Australian shrub makes a neat little plant for the side stages of the greenhouse. It comes into bloom when most of the Australian plants are over. Its slender shoots are covered with small, deep blue, bell-shaped flowers, which are attractive and last a long time. Like most other plants of its class, it thrives in peaty soil, if

potted firmly and kept in an intermediate temperature while growing.

Montbretia crocosmiæflora at Kew.—A mass of this handsome Montbretia, now in bloom at Kew, is very beautiful, and being so distinct from the summer bedding plants one usually sees, is all the more worthy of note. One thing in favour of these hardy bulbous plants for beds is the little trouble they give, as when once planted they take care of themselves for two or more years. The flowers are very telling when seen in a mass, as in the bed in question.

The Red Oleander (Nerium splendens).—This grand greenhouse shrub deserves to be more extensively grown. It has far more merit and beauty than many plants that need double the labour. A plant exhibited at a flower show held at Hinton St. George, Somerset, early in August, was growing in a 9-inch pot, and was about 3 feet high. On this plant I counted twelve good trusses of bloom either open or opening. The plant was in the best of health and admired by everyone.—J. C. F.

Helianthus.—With this note I send you two flowers of the hardy perennial Sunflower. The small flower is named *Helianthus plenus*, which is a most desirable variety, and should be in every collection of hardy plants. The large flower with its finely quilled petals is quite distinct from the one above named. I have never seen it except in the neighbourhood of Cork. Too much cannot be said in its favour. It is now one of the most attractive plants we have, with its large, full flowers each about 4 inches across, the plant growing 3 feet high.—W. OSBORNE, *Fota Island.*

Violet Marie Louise blooming.—When judging recently at a country show in Somersetshire on August 1, there was shown in one of the collections of cut flowers a large bunch of this Violet. All of the blooms were large and of grand colour, and would have been considered good in April. The scent was very sweet, far preferable to that from its more aristocratic neighbour, the Stephanotis. Everyone appreciates the scent from this lovely Violet at whatever season it may bloom.—J. C. F.

Carnation Paul Engleheart.—I send you a bunch of the Clove Carnation Paul Engleheart, which I have been distributing for the past two seasons. It is what it professes to be, a first-rate border plant, especially valuable for massing, and, as you will see, the stems are so sturdy that they are able to support the fine head of flowers without stakes. Those sent are cut from last season's layers, the plants being less than a year old, but the second season we reckon to be the best for this particular variety, when the clumps are grand with some 200 flowers open at once on each. Autumn planting seems to be absolutely necessary to its well-being, as layers kept in pots during the winter are not to be compared with those planted out in October—a fact which should be noted in its cultivation.—GILBERT DAVIDSON.

Trachelium cæruleum.—Comparatively few people grow this common Throat-wort for conservatory decoration, and yet what a delightful object a large, well-flowered plant is! For grouping amongst other flowering plants for effect few things are better suited, as may be seen by some well-grown specimens now flowering in the greenhouse at Kew. The pretty blue flowers are produced in great profusion. Being a native of Southern Europe, and almost hardy here, it does best if kept cool while growing, and the panicles of flowers will be much finer if the plants are fed with manure water while growing.

Bulb show in Holland.—We are asked to state that the 16th show of the General Royal Union for the Cultivation of Flower Roots will be held at Haarlem from the 21st to the 25th of March, 1890. This will be the fourth large exhibition. These shows are held every five years on the same system as the large exhibitions at Ghent. The last of the Haarlem shows was in 1885, and then the collections of Hyacinths, Tulips, and other bulbous plants doubtless were as numerous and as good as were ever seen at any other exhibition.

The next show promises to be a similar attraction. No less than 253 prizes, consisting of gold, gilt, silver, and bronze medals are offered for Hyacinths, Tulips, Narcissi, Crocuses, Amaryllises, and all sorts of miscellaneous bulbs and roots, as well as for bouquets, &c., consisting of flowers of the same class of plants. The show is merely arranged to promote the bulb cultivation of the Haarlem country, and from this special point of view it is certainly not to be surpassed. It will be of great interest to foreign horticulturists and lovers of bulbous flowers. Particulars can be had from the general secretary, Mr. D. Bakker, Gedempte, Oude Gracht, No. 110, Haarlem, Holland.

Lilium auratum at Kew.—We do not recollect to have seen this handsome Lilium finer than it is now at Kew. The plan here adopted of planting the Lilium bulbs amongst Rhododendrons and other peat-loving shrubs is evidently a step in the right direction, as most sorts have done well when treated in this way. The shrubs give the necessary shade to the roots in summer as well as shelter the tender growth from the cold wind in spring. Some beds near the broad walk are now very beautiful with these Liliums. In other parts of the garden *Lilium superbum* and *L. longiflorum* treated in the same way are flowering freely.

Senecio pulcher is commencing to assert itself in the garden, and we have no finer hardy plant that flowers in late summer. If the weather continues mild through the autumn, gatherings may be made even up to Christmas. In the large bed of it at Broxbourne the plants are in the rudest health, owing to the rich heavy soil in which they are planted, and this is the kind of staple to give the plant. If the soil is light and shallow the leaves get infested with red fungus and lose that rich green colour and substance so marked in perfectly healthy clumps. Where a heavy soil is not to be had, plant it behind a hedge or in some position where it can be shaded slightly. Propagation may be readily done by division or cuttings of the roots.

A new hybrid Water Lily.—A plant of a new Water Lily was recently in bloom in the Royal Gardens, Kew. It came from Mr. E. D. Sturtevant, New Jersey, with whom it originated, he having *N. pygmæa*, *alba*, and a candidissima together in the same tank. In form the flowers are not unlike those of *N. pygmæa*, and the habit is that of *N. alba*. The leaves are about 8 inches across, the upper surface deep green, the underside purplish in colour, and the floating flowers have a breadth of 4 inches. The back of the sepals is green, but mingled with white in front, while the petals are pure white. Not the least of its charms is the sweet fragrance, and the flowers open in the daytime—another good point in a Water Lily.

Platycodon Mariæsi is in bloom now and has been so more or less for weeks past. It is a charming plant for the rockery, as the growth is bushy, dense, and the leaves robust. It is quite hardy and one of the best things of its kind we have received from Japan, from whence it was introduced by Mr. Mariæsi. It is quite hardy and may be readily raised from seeds, though it may also be divided. This is not, however, the best way, as very few good pieces will be got even from large clumps. Light soil and full exposure to the sun suit it best. The flowers are very large, rich blue, and borne freely. No rockery should be without this gem, which also has another name, *P. pumilum*.

Eremurus Olgae is the last of its genus to bloom, and it continues over five weeks in flower, as if determined to make the season of these stately plants as lengthy as possible. There is a specimen of it in flower at Broxbourne, and it has been in bloom quite three weeks with every promise also of lasting another fortnight. It is a good grower, though it does not make an unusually robust growth, and attains a height of between 3 feet and 4 feet. Exposure to the sun, a strong soil, and ordinary attention will ensure a good display of flowers, and if an increase of stock is required, this may be done either by division or seeds, though this last is a very slow process, as it takes seven years for the plants to bloom. The flowers are exceedingly

delicate and refined, and crowded together in a small, handsome spike. In colour they are faintly tinted with rose, each of the segments having a distinct central line. Every good border and rockery should have a plant of *E. Olga*.

Potato Sharpe's Victor.—Amongst early potatoes this fine kidney must ultimately hold a prominent place. I was pleased to see "J. G. H." speaking so highly of it in a recent issue of *THE GARDEN*. In July of last year I saw in a green-rocker's shop Sharpe's Victor Potato. This green-rocker had agreed to have a quantity, and was giving 2s. per sack more for them than for Myatt's shieaf, and twice as much as for the Early Rose, &c. I was assured it was a grand cropper. After taking them home and trying them cooked I found them to be of first-class quality. Being a white-fleshed kind it sells to the best class trade so much better than the yellow-fleshed kinds; although I could not see any difference as to quality between the yellow and white-fleshed varieties, yet the latter are always preferred. In first-class shops it is difficult to dispose of any of the American early kinds.—J. C. F.

Phlox Drummondii is flowering unusually well this season, and reminds us what a thoroughly useful and free-blooming annual it is for the garden. There was a long line of it in full beauty the other day in Mr. B. S. Williams' nursery at Holway, and notwithstanding this is one of the most showy and confined neighbourhoods in London, the colours were undimmed and the growth of the plants unchecked. There are many shades in a good selection of the various types. Some are of the richest scarlet, others rose, white, and with intermediate tints of all kinds. They may be used in a similar way to Mignonette, that is, in rows or small clumps in the border, or as a surface to beds in which standard Roses are planted. The seed should be sown under glass in early spring, and the young plants pricked out when of sufficient size to handle, so as to prepare them for planting out in May. Well harden them off before putting out.

Big flowers.—There is an irrational desire to increase the size of many flowers, and we have only to look into the ordinary garden to find examples of this kind of contortion. One of the prettiest things that have suffered in this way is the *Petunia*; the most free blooming and constant of summer flowers is spoiled by this absurd desire for size. The huge flimsy blooms, too heavy to support themselves, are the perfection of ugliness, and show the flower in a false light. We saw a bed of this large-flowered strain planted out in a somewhat exposed position, where the *Petunia* under ordinary conditions would have done well, but the thin weak blooms could not withstand the wind that would have unharmed a strain of medium size and decided colours. The African Marigold is another case in point. The huge globe-like flowers are as ungraceful as it has been possible for the florist to make them, and yet he is not content even with this extreme and unnatural development, but aims at still further "improvement." It is the same with the Hollyhock, tuberous *Begonia*, *Chrysanthemum*, *Pansy*, *Balsam*, and many another garden flower; all are in danger of permanent disfigurement by this crazy fashion.

Dwarf herbaceous Phloxes.—There is a race of French herbaceous Phloxes little grown in gardens, but which should have good cultivation. The one great fault of the herbaceous Phlox is its tall, ungainly, and untidy habit, but in this newer race we have a dense, bushy, spreading growth, the plants rising but about 2 feet in height, and in a few varieties so densely smothered with flowers as to hide the abundant rich green foliage. We made notes of a few good kinds in the Broxbourne Nursery, and among them *Bacille*, flowers large, mauve-lilac in colour, and the plant not more than 2 feet high; *M. H. Jacotot*, white shaded magenta towards the centre; *La Ville de l'Air*, white, with a clear purple eye; *Mars*, bright red; *Colibri*, pink shaded rose; and *Foutcheau* (whatever that may mean), pink with a carmine eye. The last-mentioned is a good flower spoiled by a foolish name. Such a race should become common in gardens. One clump was

clothed to the ground line with foliage and spreading out on every side more like a shrub than a hardy herbaceous perennial.

Spiræa gigantea.—This was in bloom recently in Messrs. Paul and Son's nursery at Broxbourne, where there is a specimen about 6 feet high in a moist damp situation between two hedges of Box. The plant was recently certificated by the Royal Horticultural Society, and its appearance caused some surprise, as it is uncommon, though grown in several good gardens. If it is not identical with the strong growing *S. kamschatkica*, it is a mere variety, and attains a height of 10 feet on the banks of the Kamtschatkan rivers where it abounds. It may be compared to a monstrous *S. Ulmaria*, the leaves over 1 foot across, deep green and lobed, the inflorescence crowning the gigantic stem and showing great similarity to that of our native Meadow Sweet, just as fleecy and white and with the same delicious perfume, but of course about five times as large. Pallas mentions that the Kamtschatkan natives eat uncooked the tender young shoots. Those who have large lakes and ponds will find the robust *S. gigantea* a noble adornment for the margins, too often destitute of either flowering or ornamental plants that, like this *Spiræa*, love to have their roots in a moist boggy soil. A good colony of it would look remarkably imposing, especially when the masses of foam-like flowers are at their best.

Hardy Gladioli are flowering well this season in the Broxbourne nursery of Messrs. Paul and Son, and the strength of flower-spike and robust foliage suggest that more might be made of this class of hardy bulbs. They have been out in the open unprotected for two years, and there can be therefore no question as to their hardiness, and though not so bold and showy as the florists' varieties, there is a fine range of soft colours in which a kind of cream-yellow is almost too predominant. No one has done more for them than M. Lemoine, of Nancy, and amongst the varieties blooming were *Le Vésuve*, dark scarlet shaded with carmine; *Marie Lemoine*, one of the most beautiful of all, cream coloured, with a vivid crimson blotch on the lower segments, this having a zone of yellow surrounding it; *Calmon*, pink flaked with magenta; *Sceptre d'Or*, fine yellow; *Alsace*, canary colour. Flowering beside these was a batch of Messrs. Paul's own seedlings, and here we have the possibilities of an excellent English race, the several types showing vigour and good range of colour. One named *Lamarque* was of a kind of salmon, and almost self. If we could get a selection in which the lower blotches were removed and the whole flower of one rich and decided colour, our gardens would gain much. Plant the bulbs in autumn in ordinary light soil, and when the garden is situated low it is well to raise the bed a few inches above the common level.

Beech tree unhealthy.—I have in my garden a large Beech tree which has fallen into bad health. The trunk is covered with a whitish powder, some of which I enclose. On many parts of the trunk are wet patches (as if the sap was issuing out) in the centre of which are little mounds in which, when scraped away with the nail, small white worms about one-eighth of an inch or less in length are found. The foliage is sickly looking, not nearly so dark as that of its neighbour, and I observe some withered leaves on the points of the twigs. As I have only lately got possession of the place, I do not know how long the disease has been in progress. Do you know what the disease is, and can you give me any remedy?—B., *Torquay*.

** In reply to the above, the white powdery substance on your Beech tree is formed by an insect, *Pseudo-coccus fagi* or *Phyllaphis fagi*. I am almost certain by the former, which is nearly allied to the scale insects, but the insects, &c., were so crushed and shrivelled in transit, that I could not make them out properly, and it is just possible they may be quite immature specimens of the latter, which is closely related to the American blight. As to the white worms, they are probably the grubs of some beetle, but without see-

ing them I cannot say more. Scrub as much of the powdery matter which contains the insects off as you can with a stiff brush and one part of paraffin oil, one part of soft soap, and two parts of water; make the soap and water very hot, then add the oil and mix thoroughly and keep well stirred.—G. S. S.

The rootless disease in Daffodils.—I send in a tin box a few specimens of what I understood to be snake millipedes referred to by "G. S. S." One of them is figured in Wood's "Natural History," vol. iii., p. 693, and described under the name of *Arthonomalus longicornis*. I shall be glad to know their true name. I assure "G. S. S." that I am thankful to anyone who will throw any light upon the obscure cause of the "rootless disease" by which I have lost several thousand bulbs. I am very glad to have any statement or theory of mine on the subject questioned or refuted. I feel quite convinced that no living organism visible to the naked eye can be the cause of it, because as I dig up hundreds of Daffodils in nearly every month of the year I could not have failed to observe it. Besides I have over and over again sent bulbs in different stages of this disease to experts who have failed to detect anything to account for it.—C. WOLLEY DOD, *Edge Hall, Malpas*.

** In reply to the above, the specimens of myriapods which you sent belong to the centipedes, usually known scientifically as *Geophilus longicornis*. The centipedes are carnivorous, and are provided with "foot jaws," that is, the first and second pairs of thoracic legs are transformed into organs which assist the creatures in capturing and devouring their food; the second pair of these organs form powerful and sharp fangs, and are furnished with poison sacs, which could be of no use if they fed on vegetable matter. This *Geophilus*, however, has several times been found under such very suspicious circumstances, that I am inclined to believe it sometimes varies its diet with a certain amount of vegetable food. In appearance I must admit this species much more resembles a snake than the snake millipedes. The latter are vegetable feeders, but they are said at times to feed on dead animal matter. They, however, certainly often attack the roots of plants, and in this way are very injurious creatures. They are very common, and are often of a very dark glossy brown colour; they are nearly cylindrical, have very short legs, are not provided with poison fangs like the centipedes, and move very demurely. A very destructive species (*Julus guttatus*) is greyish brown, and has a row of deep red spots on either side. I expect the snake millipedes more often than not attack plants which are already in an unhealthy condition. As to the rootless disease, it is very evident from your experience that it is not caused by snake millipedes. The bulb mites (*Rhizoglyphus echinopus*) may be easily overlooked, as they are hardly visible on the roots to the naked eye, and even with a pocket lens they are not easily detected, as they much resemble grains of sand and are very sluggish in their movements. I am not, however, prepared to say that they are the cause of the disease, but many bulbs suffering from loss of roots have been sent to me on which I have found these mites.—G. S. S.

Heaviest bunch of Black Hamburgh Grape (L. W.).—The heaviest bunch of this Grape ever shown was that exhibited at Belfast in 1874 by Mr. W. Hunter, Lambton Castle Gardens. It weighed 20 lbs. 12 ozs. Mr. Hunter exhibited in 1873 a bunch of the same variety weighing 13 lbs. 4 ozs.

Books wanted.—1. What is the best general encyclopædia of plants dating to near the present time? Also where can the same be procured? "Nicholson's Dictionary of Gardening," published by L. Upcott Gill, 171, Strand, London.—Ed.] 2. What are the best books for young botanists unacquainted with Latin fully explaining the Linnean system, or Dr. Withering's arrangement? also explaining fully the arrangement under the natural order? Where to be procured?—COSMOS.

Names of plants.—W. Maxwell.—The pale coloured flower is *Dendrobium transparens*, the other a very poor form of *D. Wardianum*. Please number the flowers you send another time.—W. A. S.—1, send a better specimen; 2, *Veronica incana*.

WOODS & FORESTS.

PLANTING AND MANAGEMENT OF QUICK HEDGES.

For a cattle-proof fence in parks or anywhere on an estate there is nothing equal to Chinese Quick, and in such situations it is worth while to bestow a little extra labour on the preparation and planting, so as to obtain a fence that will be a protection in every sense of the word. With a thorough preparation of the ground, and good Quick, well planted at the proper season, and well cared for afterwards, in a few years a fence will be in existence more formidable to either biped or quadruped than any ordinary wall. Let us first consider the nature of the plant of which we are treating.

First, it must have a dry bed in which to grow; it is perfectly useless to plant it where there is anything approaching stagnant water in the soil; consequently, if the land is not dry enough, it must be made so, either by an open ditch or covered drain. Next, it is a plant that will bear any reasonable quantity of manure. If the soil is shallow and wet, I should recommend a ditch to be formed on the outside of the hedge. It should be made 3 feet wide and 1 foot deep at the side next the hedge; the soil taken out goes to raise the bed on which the hedge is planted, elevating it in a way that precludes its suffering from stagnant water. The ground should be trenched 18 inches deep and 4 feet wide, with 6 inches of rotten manure well worked into it; this work should be done in autumn, if possible, before the land gets saturated with rain; it will thus be in a much better state for planting than if deferred until late in the winter. Planting should never be delayed, as is often done, until the buds have begun to swell; the sooner after Christmas it is completed the better.

In selecting Quick, mere size should never be the first consideration; on the contrary, choose robust stocky plants that have been twice transplanted, and the last time not too long before the final planting. Large old Quicks that have stood for years without being moved are all very well to tempt the inexperienced planter, but he afterwards finds out that they are some time before they make much progress, smaller plants in proper condition for planting far outstripping them. For such situations as those under consideration, I should recommend a double row of Quick, 1 foot apart in the row, and a similar distance betwixt the rows. In planting, angle the plants thus: * * * * *. The practice of heading down to about 6 inches from the collar at the time of planting is still carried out by some, but it is a bad practice; plants so treated make wretched growth the first year, and correspondingly little root progress.

Heading the plants down to within 6 inches of the ground is a most essential operation, but they should never be so treated until they have had a year's growth after planting, and then it should be done in the winter before the buds begin to push, using a good sharp pruning-knife for the purpose, always cutting upwards, so as to leave the stools smooth and clean. This cutting back is to cause each plant to break a number of shoots, instead of running away with one leader, leaving the hedge thin at the bottom. To the non-initiated it often seems a pity to cut them back in this way, and appears a waste of time; but the omission is fatal to the hedge ever acquiring the first essential—a thick close bottom. When headed down as described, this double-row fence will break back so thickly

as to be almost fowl-proof, and, by the autumn of the second year after planting, will be at least half a season's growth ahead of the fence that was beheaded at the time of planting. In the autumn of the second season after planting, any time after the leaves have fallen, the growth should be cut back to within a foot of where it was headed back to the previous winter, always using the switch-hook in preference to the shears. If all goes on well, the fence will each season make rapid progress, branching out and getting strong.

Every autumn go over it with the hook, pruning back within a foot of the preceding year's cutting, always preserving the hedge widest at the bottom, gradually tapering up to a point at the top. No other form of cutting will keep a fence full and thick at the bottom, which this does by counteracting the natural tendency of the plants to run too much to a head. Local circumstances will regulate the height. A 6-feet fence for such situations as those under consideration is a good height; but there is no objection to one even higher than this. But it must be borne in mind that the higher the fence is allowed to grow, the wider it must be at the bottom; otherwise it will there get weak and thin. A hedge 7 feet high must not be under 4 feet 3 inches wide at the base. When full size has been attained, it must at every pruning be cut right back as near as possible to where the hook went at the preceding cutting; otherwise it will soon get too large, which would require its being cut back into the old wood, giving it for some time an unsightly appearance. I have, as yet, said nothing about the usual paling to protect the young growing fence from cattle. When it is situated where it will be liable to injury from this cause, the paling must be put up before the Quicks are planted.

One of the principal things to be kept in view is to get the young hedge on so that it will be a sufficient fence before the paling is worn out and requires renewal. Neither have I alluded to the all-important matter of keeping the young Quicks perfectly free from weeds, especially during the first two years; but where this is not attended to, it is useless to expect them to thrive. If, after the second year, the hedge does not make satisfactory progress, give it in the spring before growth commences a good top-dressing of farmyard manure; this, unless there is something wrong in the soil through its being too wet, or other local cause, will greatly assist it. F.

The Canadian Poplar (*Populus canadensis*).—I have long thought that this tree deserved to be more extensively planted than it is, especially in situations for which it is more especially adapted, viz., moist water margins and similar places. Even when planted in elevated or dry situations, it overtops everything else. I have in my "mind's eye" a belt of mixed trees that was planted about forty years ago, and the Canadian Poplar, as it is locally called, is nearly double the height of the other trees, of which a goodly proportion are Spruce Firs; the Poplar far outstrips them all both in height and cubic contents of timber. It is, however, as I have said, in damp ground that its rapidity of growth and inclination to produce timber are more especially remarkable. The timber, likewise, is not without value. There are purposes for which it is very suitable, being almost incombustible. In Kent there has been of late years a great demand for it for the joists of hop kilns, which, being exposed to the action of a hot charcoal or coke fire burning openly a few feet below, are necessarily much exposed to the risk of being burned down. Poplar joists are, therefore, much sought after. Boards of Poplar, as well as those of Willow, are also useful

for insides of stone wagons or carts, where a harder wood is not so good, being liable to splinter during rough usage. There are other purposes to which Poplar wood may be turned to good account, but it is unnecessary to mention them here; suffice it to say that the rapidity of its growth is a sufficient reason for recommending it to be planted extensively by all who wish for immediate effect. I should like to know the difference between what in some places is called the Black Italian Poplar and the Canadian.—A. R. G.

Canker in timber trees.—This disease, though more frequently found upon fruit trees in orchards than amongst timber trees, sometimes attacks both the Elm and the Ash upon very wet soils, the drainage of which is imperfect. It is more especially found in low situations, where there is not a free circulation of air. It may also arise from an unwholesome substance in the soil becoming lodged in the vessels of the young shoots, causing blisters near the buds and at the bases of larger branches. The parts affected are generally chosen by insects, whose larvæ keep the diseased spaces open by feeding upon their margins. It is not unusual to find fast-growing trees in the above situations attacked by canker. The only effectual remedies for the disease seem to be good ventilation, by means of open cuttings or rides in the woodlands, and thorough drainage.—B.

The wood of the Plane.—Apart from the value of the Plane as an ornamental tree—and without doubt it is the best for London and other large towns—its timber is of considerable importance. The wood is used almost exclusively by first-class coach-builders and pianoforte makers. No wood takes the paint and stands so well for the sides of large wagonettes as this. In the case of pianofortes it is used exclusively for bridges, the toughness and hardness enabling the pins to be most securely held. The wood of the American Plane is splendid timber to look at, but of very inferior quality compared with that of English growth; soft and tender, it absorbs the paint and varnish, and is rapidly affected by damp and will not stand nailing. There being a scarcity of English-grown wood, I thought to supply its place with American, but I have had to take it all back rather than lose my customers. The grain is almost similar to that of the English, but smaller in the seed-like appearance and less bright in colour. It is strange, but, nevertheless, a fact, that all kinds of American timber, while far before ours in magnificence of growth, are far inferior in quality, and this almost invariably arises from the slowness of the growth, not, as would be supposed, from its rapidity. In all kinds you will rarely find the annual rings of growth of greater thickness than an eighth of an inch; of course it makes up in height, so that bulk for bulk, or growth of so many years, America produces far the larger quantity. My experience has always been that the fastest grown timber (that is on the best soil), with annual rings from $\frac{3}{8}$ inch to $\frac{7}{8}$ inch, gives the very best quality of wood, i.e., for toughness and weight. Planters ought certainly to take the Planes in hand as profitable timber trees.—M.

Rabbits & Pinus Laricio.—One who has planted this Pine extensively informs me that, unlike other Pines in a young state, rabbits do not molest it, or if they do so once they will not repeat the experiment; and so satisfied is he of this, that he partly attributes the comparatively high price of young plants to its being proof against the attacks of hares and rabbits.—G. S.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

FRUIT GARDEN.

W. COLEMAN.

NOTES ON PEACHES.

HAVING forwarded my notes on the fruit crops generally, I now proceed to answer your six questions upon Peaches.

1.—*Best Peaches for flavour.*

Peaches, now too numerous, may be divided into four sections, viz., very early, moderately early, midseason, and late. Each section has good commendatory points; but all the varieties contained in those sections, no matter how well they may be grown, do not occupy the front rank when flavour, the true test of merit, is set up as the standard. Being so numerous, no one owning acres of glass or miles of brick walls would think of growing more than a dozen or two of the best, neither need they, as a good baker's dozen, judiciously selected and duplicated, will keep up a supply of fruit from the beginning down to the end of the Peach season. To many people, especially those who do not grow their own, a Peach with a red cheek in March or April is a Peach to all intents and purposes, and such being the case, raisers have given growers extremely early sorts which force well and arrive quickly at maturity. Here, then, extreme earliness represents money value, but, to my thinking, it does not represent flavour. A few of these I will pass over, and commence with Early Grosse Mignonne, as handsome as it is good, and succession being my point, I will follow with A Bec, an Early Royal George, Alexandra Noblesse, one of Rivers' best; the old Grosse Mignonne, Belle Beauce, a most brilliant Peach; Violette Hâtive, Stirling Castle, now recommended as a substitute for Royal George, as it does not take mildew; the old Noblesse, not yet surpassed; Bellegarde, alike good for houses or open walls; Royal George, Dymond, very hardy and fine; Walburton Late Admirable, Prince of Wales, and Malta, a Peach now seldom met with, but, perhaps, the finest flavoured variety in cultivation.

2.—*Value of new kinds as to flavour.*

My remarks in reply to question No. 1 pretty well answer this, at least so far as I am acquainted with extremely early sorts, but some there are which I have not tasted; therefore, I do not commit myself by saying all the early sorts are deficient in flavour. Alexander and Amsden June, two semi-clingstones, are much grown for market and private use, but their point is certainly not flavour. Waterloo, I am told, is equally early and much better, but until I can judge for myself another season I will not express an opinion.

3.—*What are the causes of the inferior flavour so often found in market Peaches?*

Replies to questions Nos. 1 and 2 to a certain extent answer No. 3, especially in reference to the early section. Growers for market strive against each other, and those who win, if only by a single day, realise higher prices than those who come in a little later. Quality with growers is simply out of the question altogether. Colour they prefer, but first in the market is the motto. Consequently the mode of forcing third-rate varieties results in the production of Peaches

very little better than Turnips. The best sorts must have plenty of light, a moderate temperature, and a free circulation of air, but when poor, thin-fleshed varieties are denied these flavour-producing elements, we can hardly expect to find good early Peaches in the market. Coming to the next section, large, handsome, and all that can be desired when properly grown and given time to ripen on the trees, we make a long stride in the right direction, but here again quality is sacrificed to speed, as London salesmen give preference to full-sized, highly coloured Peaches detached from the trees before they begin to soften. Growers readily fall in with them, as hard fruit can be packed and sent from one end of the kingdom to the other without sustaining a bruise. In due course they find their way into the vaults beneath the pavement, where they ripen without spot or blemish, and although not quite equal to a good Noblesse, which hangs until nearly ripe, the market Peach, like the Pear if properly grown, ripens up much better than many people imagine. Indeed, this mode of gathering, packing, and ripening on the fruiterer's premises is the only method by which a large community can be supplied with good fruit worth eating. Indifferent fruit, although well grown, is that which has been allowed to hang too long upon the trees, which has lost its sprightliness, and is tainted by bad packing and bruising in transit. The grower for home consumption who knows what he is about does not allow his Peaches to hang until they are dead ripe and drop from the trees, but he gathers when transparent in the skin, fairly soft, and perfuming the house with their rich aroma. He detaches when they are dry and cool, and gives them twenty-four hours in a dry, airy fruit-room to finish. They are then in the best possible condition for use, and although perfectly free from finger mark or bruise, if not wanted or sent back from the table they rapidly depreciate in quality.

4.—*What is the stock that gives the healthiest tree?*

Although Peaches are so much alike, all the varieties do not grow equally well on the same kind of stock; indeed, some are so fastidious that the buds positively refuse to "take" upon one stock, and grow like Willows upon another. Our very best nurserymen have found this out, and work certain sorts on the Mussel, others on the Brompton or Mignonne. Those who excel in the art raise the stocks from layers or root cuttings, making the Mussel (the best stock for this climate) their sheet anchor. If this stock does not answer, they fall back upon the Brompton, using it for A Bec, Bellegarde, Belle Beauce, Chancellor, Royal Charlotte, Malta, and some others; and of Nectarines, Balgowan, Impératrice, and Victoria. The Almond has been tried, but north of France, even in our Peach houses, the trees look yellow, unhappy, and soon perish. The majority of the trees in the American Peach orchards are raised from Peach stones, and grow and fruit freely for a few years, but whether it be from the great summer heat, the intense winter cold, or heavy cropping, they are short-lived, and go off with the "yellows."

5.—*What is the stock, if any, that tends to disease and canker?*

Tender stocks like the Almond, I suspect, are most likely to produce disease, but the most common cause in this country is hard cutting back, whereby a small piece of dead wood is encased in living sap near the union; bad culture in cold rich soil; gross wood which never ripens, and loss of the early growth when attacked by insects. If anyone doubt this, he

may produce convincing proof by planting healthy young trees in cold, deep, undrained borders in the open air, also by the neglect of root-lifting or root-pruning. Further, he may search well-managed Peach houses for canker, gumming, and blistered leaves, but in vain; or, should he find an example, he may rest assured that hard cutting back in the nursery has produced a piece of dead wood just above the union. Gumming in Peaches and Nectarines, where the stocks are perfectly healthy and well adapted to the scion, may be produced by injury to the outer bark, say by a sharp blow from a hammer, also by bursting the cells, as sometimes happens when the strong branches of trees taken from walls are bent to make them fit against a curvilinear trellis in the Peach house. The disease in this case being local, it may be cured by good management, or under converse conditions it may become chronic, if not fatal. When the stems or large branches of stone fruit trees are injured by accidental blows, the bruised parts of the bark and wood should be cut out with a sharp knife, preparatory to the application of a piece of virgin turf of a stiff character. This should be tightly tied over the injured part and repeated if necessary until the bark has healed.

6.—*Outdoor culture in district—how far is it successful?*

Peaches do remarkably well in this part of England, producing excellent crops of fruit nine seasons out of ten in well-managed gardens. The crop this year is more partial than it has been since 1861, some trees carrying an abundance of fruit which has required much thinning, whilst others on the same walls are very light or completely barren. The cold, wet, sunless summer of 1888 left the wood green and unripe, the buds small and imperfectly formed; they opened, it is true, but lacking male organs, the fruit commenced dropping when the size of small Peas, and gradually in some cases rapidly decreased down to stoning time. Good culture has made rapid strides within the past few years, the main points being annual or biennial root-lifting, good drainage, sound compost innocent of animal manure, copious watering, cleanliness, and extension training.

Strawberries in small pots.—In answer to "C.," I have made experiments with various sizes of pots in which to grow Strawberries, and have decided to grow Black Prince for the earliest fruit in 5-inch pots, but the later varieties, Keen's Seedling, President, British Queen, &c., in 6-inch. I have tried 7-inch pots for the latest fruit, but that size did not answer so well as the smaller size. I have tried King of the Earlys against Black Prince for forcing, but it is not satisfactory. Mildew is troublesome most seasons, but it can be dealt with by the early use of sulphur.—J. DOUGLAS.

Cordon Currant trees.—The interesting note anent cordon-trained Currant trees at Ealing recalls an almost forgotten remembrance of a garden many years ago in which the gardener had trained some cordons over arches here and there, but in no systematic fashion. Still they always fruited wonderfully and were much admired. In these days of cheap netting and birds galore, would it not be a capital arrangement were Mr. Pegg, or indeed any other person, to plant cordon Currants, white and red, also yellow, green, and red Gooseberries, and train them cordon-wise over iron arches in the same way that Mr. Wildsmith, at Heckfield, trains Pear cordons so admirably and fruits so well. After seeing how successful he is in securing crops of Pears from arches, it is odd to find the method so rarely copied. Still farther, beyond the excellent crops of fruit obtained, there is much beauty found in the graceful drooping of the fruits. Currants and Gooseberries would have an advantage

over Pears that they do give some rich colouring and both variety and beauty. Trees of Red and White Currants alternating with various-coloured Gooseberries would prove very attractive, because the bulk of the fruit would be pendent. Cordon trees of bush fruits have also very short, thickset spurs, so that the effect would be more pleasing than is found in larger fruits. Then were the cordons planted, say, 18 inches apart on either side, the arches being sufficiently high to give about 7 feet run to each one before the tops meet, the whole of the arches could be netted over from end to end and thus readily exclude birds, especially if temporary netted gates were fixed at either end of the arched path. In either case, the cordons would cover space not otherwise utilised except for a path, whilst the product could hardly be other than very profitable.—A. D.

HOW TO PACK AND SHIP APPLES.

THE question how to get paying prices for the Apple crop of your State has induced me to offer a few suggestions, as I have been in the wholesale and retail fruit business some twenty years.

To get the best results, in the first place good barrels of uniform size should be used. The standard flour barrel size is the best. The fruit should be carefully picked, thoroughly assorted, and all small and imperfect specimens rejected and used for cider, as it does not pay to ship such stuff to a distant market. The fruit should be uniform through the barrel. It does not pay in the long run to pack small Apples in the centre of the barrel. Apple packers must learn to be honest, and aim to get a reputation for good, honestly-packed fruit. Such a packer will soon find that there is a demand for his fruit, even in dull times, at fair prices.

Care must be taken in pressing the Apples, and also to see they do not shake in the barrel; this fault will condemn the best of fruit. Then carefully head-line and nail the hoops. With a neat stencil brand the name on the faced head, and the packer's or shipper's name, but never the town, as wholesale dealers do not want that. Keep the barrels as clean and neat as possible. Some people think that anything will do for an Apple barrel, but let me say that a nice barrel, in good condition when it arrives at its destination, helps to sell the fruit. Some shippers think writing the name with pencil is just as good as a nice stencil, but they are mistaken. When a dealer goes to inspect a carload of Apples and finds poor barrels, some heads out, hoops off, and the name scratched on with pencil or chalk, he does not feel inclined to buy except at a very low figure. On the other hand, if on opening the car he finds nice clean packages, uniform in size, with name of fruit nicely stenciled, and shipper's name on the same, he says he will at once become a purchaser. Then when he comes to open up the lot and finds it of uniform size, such as he would be willing to turn out on the floor for his customer's inspection, he is delighted, and you will soon find him writing to the shipper, saying, "This fruit is all right; how many cars can you furnish me that will come up to this standard? I will take one or two hundred cars if you can guarantee them as good as this one." If the fruit had been such as is usually shipped, he would have written that the quality was so poor that he had to take a very low price, and did not care for further shipments.

If fruit growers and shippers would come to this end of the route, stay through one season, hear the language uttered over poorly-packed Apples, and see the frauds practised, they would see why prices seem low; and yet they are always high enough for the quality of the goods. In doing a large shipping business the most careful person will sometimes get imposed on. A good way to avoid this is to furnish each packer with a small bill on which is printed, "This barrel was packed by John Smith." Then if fraud is discovered it can be traced to the one guilty of it. There are packers who ship to me, and as soon as I get their list I can say to a customer, "Here is a car I can guarantee without inspecting it." I sell it, ship into the country, make a draft against it, which is paid and

no fault found. Soon there comes an order from same customer: "Send me another car; I want same man's packing as the last." This is much better than to have your draft returned with notice that the fruit is so poor they cannot use it, and it is subject to your order.

Give us good, fair-sized Apples, uniform through the barrel, in good barrels tightly pressed, neatly and correctly stenciled, and it will be found that far better prices will be realised.—A. M. ANSON, Minneapolis, Minn., in *Country Gentleman*.

WORK IN FRUIT HOUSES.

VINERIES.

EARLY Vines from which the last of the Grapes were cut in June will now be getting ripe and the premier foliage laying on those soft delicate tints which indicate a satisfactory condition of the roots. If quite clean and free from insects the use of the syringe may be somewhat relaxed, but a refreshing bath after a hot day will keep them fresh and cool and retard the fall of the leaves—no unimportant matter where early forced Vines are predisposed to breaking prematurely. Laterals having had full liberty must now be checked by partial shortening, a few fresh green leaves being left to draw the sap and keep the roots in action until the germs of the bunches are perfectly formed for another year. The house cannot be kept too cool and airy, but the foliage being good the removal of the roof lights once in favour need not be practised, as the ripest wood always gives the most compact and perfect clusters. Look well to the outside and inside borders, and if well drained do not be afraid of laying on the hose for a few hours, as the roots of Vines should never feel the want of water. The mulching, as a matter of course, has not been disturbed, neither must it be until the time arrives for top-dressing in September, when every particle of manure must be raked off, the surface pricked up, well dusted with crushed bones, and lightly covered with fresh compost to be washed down and solidified by autumn rains.

Succession houses in which the Vines, although clear of fruit, are still in full vigour, must receive generous treatment both as regards root-watering and good late syringing. If not over-vigorous and early maturity is certain, these, like the earliest, may be kept open throughout the hours of daylight, and a chink may be left on the top ventilators through the night. Vigorous young Vines, on the other hand, which require a good deal of ripening will be the better for early closing with strong sun heat, light syringing being deferred until towards 6 p.m., when a little top and bottom air may be put on for the night. If clean, morning syringing need not be thought of, but the trifle of night air may be gradually increased, as there is nothing like sun heat and fresh air for ripening the wood. Extra strong canes from which the maiden crop is expected next, in addition to this method of exposure to strong sun heat, may be improved by the removal of the laterals from the base upward to the pruning bud. These with a sharp knife may be secured close to the main bud, the only exception being those joints from which, accidentally, of course, the premier leaves have been removed. In these cases the laterals may be shortened back to one or two leaves, which, to a certain extent, will compensate for the loss of the main foliage. All the laterals above the pruning bud must be left, not only as safety-valves to the bunch-producing buds, but also to keep the roots in action until the Vines sink gradually to rest.

Houses containing Vines upon which ripe Grapes are hanging, and which it may be desirable to keep fresh and perfect in colour, must have plenty of shade during the hottest and brightest part of the day. The best of all colour-protecting shade is afforded by dense, healthy, leathery leaves and a few well-arranged laterals, always provided the latter are kept clear of the glass and do not choke the ventilators. If this natural shade is too thin, a double thickness of pilchard netting permanently fixed whilst letting in light will break the sun's rays, or light canvas may be drawn over the roof

on bright mornings and removed in the evening. White Grapes will stand any amount of light and some sun, but there comes a time when dead ripe and perfectly coloured bunches scorch and show signs of shrinking. These, then, must be closely watched, and when the first tinge of brown is detected, sheets of tissue paper may be placed above the most exposed bunches. Another important consumer of dense colour is a cool, fresh, and not over-dry atmosphere. It is, of course, possible to keep summer Grapes even too cool and too moist, but a watchful eye will soon detect condensation of moisture upon the foliage and berries, the best of all proofs that a little more warmth and a little less floor sprinkling will prove beneficial. When cutting Grapes from this time forward, it is a good plan to remove two or three of the laterals from the base of each of the spur shoots. The operation being gradual, it will not affect the vigour of the Vines, but it will tell amazingly upon the pruning buds, sometimes so small and elongated that timid knifemen are tempted to leave a second, which, as a matter of course, takes the lead, and showing a larger, but looser cluster is retained, perhaps not to the detriment of the Vines, as leaves and shoots make roots, but most certainly to the detriment of spurs, which soon run away from the main rods and look unsightly.

LATE GRAPES.

The scalding period having passed away, houses containing Lady Downe's and other bottling varieties may now be ventilated very freely, but by no means excessively, and shut up early in the afternoon with strong sun-heat and plenty of moisture. A close time extending over two or three hours is not too long, as it is during this period that the berries lay on pulp and expand to their largest size, rest, as a matter of course, being given by the admission of a little fresh air throughout the hours of darkness. Treated in this way, the Grapes will swell very fast with a minimum of fire heat and in extra warm districts absolutely without it. In the majority of places, however, especially upon cold clay subsoils subject to night fog or moist exhalations, hot water should be at hand for turning on when needed. If not already done the scissors should now be passed over the bunches for the last time, as the most expert thinner not only misses seedless berries, but sometimes finds large bunches inclining to bind, a very serious defect in Grapes expected to hang through the winter. Most generous treatment with weak clarified liquid not only to the roots, but also for damping purposes, for the next month is imperative; after this date, colouring being well advanced, pure water with no grudging hand may be substituted.

Muscats.—Early houses may now be thrown open by night and day, syringing being regulated by the health and cleanly condition of the foliage. If the wood is hard and approaching maturity all gross laterals may be removed; that is, unless root-lifting is premeditated, when they should be retained to assist in speedy recovery. Wash the foliage well occasionally, keep the borders thoroughly moist, but not too wet, and add stable litter to economise the frequent use of water. The main crop of Muscats now transparent, like the Lady Downe's, will pay for very liberal treatment; the borders must be kept well fed and covered with fresh stable litter not too rank with raw ammonia, and all available parts of the house, including the walls and stems of the Vines, may still be syringed on fine evenings. If laterals are abundant they may be gradually reduced or tied down, but on no account must full sun be let in until the berries have done swelling. There is, of course, no rule without an exception, and this exception may necessitate the partial exposure of a few early bunches of Bowood, which is the first to colour and ripen, but for late autumn and early winter use there is nothing like keeping a good covering, and allowing Grapes, leaves, and wood to ripen up together.

Pot Vines intended for early forcing should now be ripe and fit for full exposure, not by removal to the open air, as the shock not unfrequently injures roots and foliage, but by throwing open all the

roof-lights and ventilators on fine hot days, closing being confined to wet weather, when a heavy rainfall may not be beneficial. If rooting through the apertures is suspected, the roots should be disturbed or cut before the leaves fall, but this rarely happens where top-dressing and feeding have been generous. Pot Vines, it must be borne in mind, should never become dry at the roots, at the same time the ripening of the leaves must be accepted as the signal for a gradual reduction in quantity and quality. The best preventive of drought for the present is an extra mulch, and later on the pots may be completely buried in some moderately dry non-conducting material. The removal of the first laterals close down to the main buds from the base upward is an important matter, as bunch-producing buds cannot be too well ripened.

Planting Vines in 8-inch pots that were stopped when they had made 6 feet or 8 feet of wood will now be thickening fast and pushing many laterals. These to a certain extent must be encouraged by frequent syringing and judicious watering, but they must not be allowed to make more than one or two joints before they are pinched, whilst those nearest the pots may be cut out to facilitate plumping up and ripening.

FIGS.

Early trees from which the second crop of fruit has been gathered may be divested of all small figlets larger than Peas, also of useless shoots and spray and well syringed to cleanse the foliage from dust and insects. If trained over fixed trellises and not too near the glass, tying down is best left alone, as shoots which draw upward to the sun and light are improved by a thorough roasting. If planted out in brick pits or upon blocks of compost and root-pruning is considered necessary, now is the time to commence operations. My trees occupy squares of compost supported by turf walls, space being left for the introduction of fermenting material. When the time arrives for starting these squares we reduce annually by forking down the old turf walls and removing some of the compost, care being taken that the balls are made thoroughly moist prior to the performance of the operation. If the trees are extra strong we shorten back all the roots, but otherwise we cut away all the strongest, shorten the weakest, rebuild the walls with fresh turf, and relay the points of the roots in light, rich calcareous compost. This process hastens the ripening of the old leaves, but by keeping them well moistened with the syringe they hang until fresh roots strike into the compost. The house, it is hardly necessary for me to say, is deprived of all fire-heat and all the roof-lights are thrown open daily, the secret of success hinging upon keeping the point buds and embryo fruits dormant, or so nearly so that development is barely perceptible.

Pot trees may be treated in the same way, but instead of picking out the soil the balls may be pared down with a long knife, divested of crocks and crock roots, and repotted in the original sizes. These remarks apply to old trees occupying full-sized pots or tubs, to which a shift into larger sizes would be simply impracticable. Younger trees in smaller pots do not submit to this treatment, neither do they require it so late in the season, especially where they were potted on at the proper time, and the new compost as yet is none too full of roots to ensure successful forcing. If still under glass, the best place for them, they may be raised quite clear of the old plunging material, well top-dressed, and until the leaves fall, moderately supplied with water.

Successional trees, still giving a few small, but deliciously flavoured fruits, will require an abundance of air by day and a free current by night, otherwise the ripe Figs will spot and the ripening of the wood will be retarded. Fire-heat having been cut off, all watering should be performed very early on fine mornings, and the trees being clean, syringing may be dispensed with altogether.

Late houses now in full bearing require very similar treatment, but damp being the greatest bane, we find it necessary to withhold the syringe after the morning, barely damping the floor, and

prevent condensation of moisture by warming the pipes before nightfall. As these trees carry but one crop, and that a right good one, all, with the exception of one or two of the summer shows, are rubbed off each shoot at the outset.

WORK AMONGST HARDY FRUITS.

Never, perhaps, have hardy fruit trees made a cleaner and better growth than can now be witnessed in gardens generally, and although slightly late, the wood and buds may yet ripen well, when a full and abundant crop may be expected another season. Peaches are making unusually clean wood, and if close training be persisted in and crowding avoided, they will be in fine condition by the end of October. Apricots, equally clean, are a little too strong, and having but little fruit to mature they will not ripen their wood any too soon, but much may be accomplished by close and thin training, and by the pinching of all laterals and sub-laterals as they emerge from the trees. Trees carrying good crops of fruit must not feel the want of water, as no fruit tree with which I am acquainted so quickly resents dryness at the roots. Protection, too, from wasps, now very abundant, must receive careful attention, as well-kept fruit will be found unusually valuable when soft fruits have passed away, and early Pears are not forthcoming for the dessert. Choice varieties like the Moorpark, the Peach Apricot, and the Large Early are the best for the dessert; hence the advantage of keeping these sorts side by side for the convenience of covering with hexagon netting, not bagging in against the foliage, but a good distance from the trees, with an entrance at each end for getting in to gather the fruit. The commoner varieties generally used for preserving should be gathered as soon as they are ready, when the trees may be well hosed and watered as a preliminary to root-pruning when they are a little further advanced. This operation, by the way, is one which will keep all hands employed for a considerable time in the autumn, and time representing money, fresh compost for placing about the points of the roots should be got together by degrees as opportunity serves. The roots of Apricots, like those of Figs, I may say, should be restricted and confined to narrow borders, or flats, composed of sound loam, with plenty of drainage beneath them, and in warm sheltered gardens upon a dead surface level for the convenience of giving an even supply of water. I know a ducal garden in which a fine wall 18 feet in height is covered with magnificent trees, which for years gave very little fruit. The trees at last were lifted and replanted in narrow borders composed of strong loam, planks being let in edgewise 6 feet from and parallel with the walls. These trees now bear full crops annually, and the roots being kept out of the vegetable portion, they are well mulched and properly fed, and never require pruning. This, I believe, is the secret of growing good Apricots in plenty in rich vegetable gardens, in which the roots are glutted with food at one period of the year and robbed of every particle of moisture by hungry vegetables when they most need it—throughout the summer.

STRAWBERRIES.—All Strawberry planting should now be brought to a close, that is if good runners are expected to pay for netting next year. One of our very best private fruit growers never puts out a runner of the current year, but makes nursery beds of the different sorts when he trims his beds, divests them of all flowers in the spring, and plants out permanently not later than the 20th of July. He soaks his nursery beds thoroughly before he commences lifting, waters them well home, and is guided by dates, independently of dry or wet weather. The large, early, popular, but second quality varieties now so much in demand for shaking hands with fruit from forced plants may well be treated in this way, as such plants put out a foot apart upon warm borders as late as the end of July will give an abundance of fruit the following June. There are, of course, many modes of preparing and planting Strawberries, but in all cases and under all systems, one thing is quite certain: they must have deep tilth, heavy soil, and an abundance of good food; also, the roots must be

well established and the crowns ripe before they are overtaken by frost.

FIGS growing stronger than one could wish will not yield much fruit; but this falling off must not interfere with the performance of the most trifling details calculated to ensure ripe wood. Wall Fig trees are managed under two distinct systems, viz., thin training and close nailing, or the "let-alone." The latter, I believe, is most popular in maritime counties and extra warm districts, but inland, where wall Figs rarely pay, thin training and sharp root-pruning sometimes result in good crops, where the let-alone system fails. W. C.

DESSERT APPLES AND PEARS FOR YORKSHIRE.

WHAT Pears and Apples for dessert, early and late, would you recommend me to grow on light sandy soil, and what on a stiff clay subsoil? I wish to plant part of my two gardens with fruit trees.—E. BADDELEY, *Marston Rectory, York.*

* * Dwarf bushes, pyramids, cordons, or espaliers are best adapted for garden culture, as they produce very little shade, the fruit is sheltered from storms of wind, and the trees can be reached from the ground or by means of a pair of steps when summer pinching or winter pruning and gathering in the crop demand attention. The best stock for the Apple is the English Paradise or Doucin; for the Pear, the Quince, which should be worked quite close to the ground to facilitate the formation of own-root trees by the time they come into bearing. The subsoil being stiff and close, what is termed bastard trenching should be performed before planting is attempted. In other words, the ground should be broken two spits deep at least, the top soil being kept in the position it now occupies, whilst the lower stratum after being well broken up with steel forks may be enriched and corrected by having plenty of burnt clay, old lime rubble, dry road-scrappings, or other disintegrating correctives worked into it. This preparation applies to ground intended to receive consecutive lines of trees from 6 feet to 9 feet apart and 6 feet from tree to tree when thoroughly established. Some plant much closer, and in due course transplant every alternate tree, but unless extended culture is contemplated, it is best to give plenty of room and for the first few years grow sub-crops, say of Strawberries, Potatoes, or other dwarf vegetables between them. If the subsoil has been worked and corrected, and the trees are intended to occupy the margins of walks, stations must be prepared by taking out holes 3 feet or 4 feet in diameter and filling in with 6 inches of clean drainage, followed by 2 feet of compost. The distance from tree to tree is a matter of taste, but with the view to the formation of examples better than toys, 3 yards from centre to centre is quite close enough. The hills, some 6 inches above the surrounding level, having settled, a neat training stake, 2 feet to 3 feet in height when driven, should be placed quite upright in the centre of each, when planting may be performed from the beginning of October until the middle of November.

Apples on English Paradise.

Irish Peach	Blenheim Orange
Worcester Pearmain	*Cox's Orange Pippin
Kerry Pippin	*Ribston "
Red Quarrenden	*Cockle "
Golden Winter Pearmain	Court of Wick
*Margil	Sykehouse Russet
Wyken Pippin	Hereford Pearmain
*Lady Henniker	*Sturmer Pippin
*Adams' Pearmain	Court Pendu Plat
*Claygate "	

Those marked (*) pay well when planted 16 inches apart and obliquely trained as cordons against walls and buildings.

Pears on the Quince.

Jargonelle	Thompson's
Williams' Bon Chrétien	Winter Nela
Fondante d'Automne	Josephine de Malines
Souvenir du Congrès	Van de Weyer Bates
Burré d'Amanlis	Ne Plus Meuris
Burré Superfin	Burré Diel
Louise Bonne of Jersey	Flemish Beauty
Marie Louise	Haccon's Incomparable
Doyenné du Comice	Seckle

The whole of the above Pears may not only be improved by culture as trained trees upon walls, but they are well worth this attention.—W. C.

Budding old Peach trees.—It often happens that Peach trees lose their lateral branches near the base, sometimes by neglect, at others by too hasty extension. When the branches are bare from any cause, the bottom of the tree can easily be furnished by inserting a bud in any part of the old branch where it is desirable to have a lateral shoot. I have put buds into branches over twenty years old with complete success, and thus furnished the base of old trees with young wood. If the weather should be very hot after the branches are budded it is necessary to shade the buds from the sun's rays.—W. O., *Fota, Cork.*

Peach trees in Scotland.—At Dalkeith we are rather favoured in growing outdoor Peaches, and few other places in Scotland at this altitude—200 feet above sea-level—have such fairly regular crops; still they would never pay us to market them, and none of the market gardeners around us, most of whom are very enterprising men, care to invest in their cultivation for market. A few trees are grown by some of them, but none whom I know, and I know most of the market growers in the Lothians, care to extend their Peach walls. They find growing Tomatoes much more profitable on the same walls.—MALCOLM DUNN, *Dalkeith Palace Gardens, N.B.*

MARKET GARDEN NOTES.

WORK is plentiful in market gardens, many crops having been cleared off and the land cropped, or in course of preparation for crops that mature during winter or spring. Some nice refreshing rains have lately been very beneficial, and there is a promise of abundant crops. The work of lifting and storing, so as to get other crops in, is being rapidly pushed on, as every day is of importance at this time of year. Amongst the crops demanding attention are—

EARLY POTATOES, which are being lifted in quantity. Very fine crops are the rule, and I need hardly say that prices are low. As the late crops have improved wonderfully since the rain, there is no use in keeping back for the prospect of higher prices, there being no disease worth mentioning in this locality. The quality of all kinds is good; in fact, just the reverse of last year's crop. Beauty of Hebron, Pink and White, Early Rose, and White Elephant are the main early fill-basket kinds; and for the best class trade Myatt's Ashleaf Kidney and Sharpe's Victor take precedence. For late crops Regents are becoming popular, and Magnum Bonum again promises to be as fine as ever this year.

CABBAGE AND WINTER GREENS are being planted as the soil is cleared of Potatoes. In this locality, after the Potatoes are dug the soil is ploughed over, and any tubers that have escaped notice in digging are picked up, the plants then being inserted in every second or third furrow according to the size they are expected to attain. If the soil is very dry a light wooden roller is run over it before planting, and directly the plants are put in, a water cart with liquid manure follows, and each plant gets a good soaking. I may add that market growers make it a rule to get ready an abundant supply of dwarf, sturdy plants of all the kinds they grow, and give plenty of space to them in the seed bed, for not having such a number of varieties to cultivate as the private gardener, they pay more attention to the few kinds they rely on.

CELERY for late crops is still being planted, and the earliest planted lots that are making rapid growth are getting copious supplies of liquid manure, and are looked over frequently for the removal of suckers from the base. The plants are allowed to get nearly full grown before any earth is put to them for blanching, and one, or at most two mouldings up are all they receive. The white varieties are almost invariably used for early work, and the red for late keeping.

CUCUMBERS AND VEGETABLE MARROWS are producing fine crops this year, and large quantities are now being cut and sent to market. Ridge Cucumbers find a ready sale in towns, and in seasons that are sufficiently warm to cause them to grow freely they are a profitable crop. Last year they were a failure, but this season they have grown well, and are now producing fruit freely.

TOMATOES of home growth are now plentiful and realise good prices. Foreign grown ones, which are very plentiful, sell slowly at 3d. per lb. retail, while the home grown realise 8d. per lb.

FRUIT is scarce, and realises good prices in the market. The light crops of home grown will probably repay the growers as well as heavier crops do in years of great abundance, for there is very little French fruit in our markets up to the present. During some seasons we have been inundated with French Pears and Plums at this date, but whether their crops are light or they have better sales at home owing to the Paris Exhibition I cannot say, but certain it is that our local markets are at present not so well supplied with fruit. In this locality the home growers have no cause to complain of their crops or of the prices they can obtain for them. J. GROOM.

Gosport.

CHRYSANTHEMUMS.

E. MOLYNEUX.

RESULTS OF PROPERLY RIPENED WOOD.

THE great advantage gained by having the plants thoroughly ripened or matured is that blooms which contain the chief points of quality, viz., depth and solidity, do not when pressed with the finger and thumb present any marks; they are hard to the touch, more like a gutta-percha ball than an ordinary thin india-rubber one. Blooms of the character I have described nearly always carry with them smoothness of the petals, and are much more easily rendered fit for the exhibition table. The sort of blooms we expect to see from immature plants are those which are large in diameter, but devoid of depth, and contain a number of ill-shapen florets, in some instances without any semblance of incurving in the proper manner. The advantage of those which are more solid in character is often exemplified when the two kinds have stood two days at a show and borne the heat of crowded rooms. Those which are firm remain so longer than those which are more or less loose. These latter quickly show an "eye," which proves their weakness and non-sustaining form. Another reason that can be advanced in favour of perfectly ripened wood is that the blooms having done duty at one show and showing no signs of decay, can again be exhibited. I have more than once been able to gain several prizes at a show which extended over two days, and again the next day stage many of the same blooms successfully at another show, which necessitated nearly 100 miles railway journey. This is a good reason why the solidity of the blooms should be the first consideration.

I have endeavoured to point out the difference between the effects of maturation and non-maturation, and the advantages which the former method carries with it. I will now try to show the correct manner of attaining the maturation of the plants, and at the same time point out what to avoid in attaining that object. Seasons vary so much that the locality in which growers reside is a very important factor in the production of good or bad blooms. Circumstances occur over which cultivators have no control. They cannot, for instance, excel during a cold, wet summer in a low, damp district. Again, growers residing in high and dry locali-

ties have much to contend with in a hot and dry season. The method of culture I advise as the most likely to obtain the desired end is that of growing the plants from the first stage on to the culminating point in a regular, steady manner, not by fits and starts, such as applying water regularly for a time, then neglecting the plants for a few days.

Regular attention to potting is important, or before the plants become so root-bound that many roots must be broken in the process, causing a check to the steady growth that is so desirable in plants for producing the finest blooms. Crowding the plants in their younger stages of growth is most hurtful and antagonistic to the development of vigorous wood and foliage. Sufficient space should always be allowed the plants when in their summer quarters; they should be arranged so that the sun can shine directly on them, but protection should be given them from easterly winds, which do much damage to the tender foliage early in the season. A loss of leaves thus early in the season is not the way to produce properly ripened wood, as the leaves are a primary agent in the welfare of the plants. As growth proceeds the stems from the base upwards gradually assume a brown colour, and the leaves of such plants towards September have a bronzy appearance, though some varieties indicate this character more clearly than others. The greatest difficulty growers have to contend with in a high and dry district is that of preventing the soil becoming constantly dry during a spell of hot weather. The remedy in this case is to shade the pots from the sun during the hottest part of the day by boards set on edge in front of them, Fern, Cocoa-nut fibre, or mats. During hot and dry weather much attention is needed to retain moisture about the plants, such as thoroughly drenching the foliage both morning and in the evening; the latter application cools the plants for the night and invigorates them after a parching hot day, while the application early in the morning gives the air moisture for a time during the early part of the day. The greatest of all faults is in not making the soil firm enough, particularly at the last potting. Under such conditions the roots ramble quickly into the soft soil and the growths are correspondingly soft and devoid of that hard wood-like character that is so desirable. Using soil of too rich a nature and the excessive application of stimulants, such as nitrate of soda, induce an undesirable luxuriance of growth. If the plants are overcrowded, they grow weakly, and the leaves are, of necessity, imperfect; or if the plants are burdened throughout the summer with an excess of growth of numerous side shoots, the stems and main leaves of the plants are crowded, and cannot obtain a sufficiency of light and air to mature the growth as it proceeds.

Name wanted.—In a small box by parcels post I send you two buds just on the point of opening of *Lilium auratum* with dark crimson bands. Will you please say whether this is *rubro-vittatum* or *L. auratum cruentum*, figured in THE GARDEN of December 27, 1879 (Vol. XVI., p. 576)? I fancy that the colour and crimson band in the flowers I am sending you are both superior to those figured on the plate referred to. The stem of this variety is about 2 feet to 2½ feet high, somewhat slender, and the leaves of a dark green colour and rather broader than in the ordinary *auratum*. I have had as many as from six to eight flowers on one stem, those first opening measuring from 10 inches to 12 inches across from tip to tip, and they are of a saucer shape.—A. L. LANGE, *Ghent.*

* * Your Lily is *L. auratum cruentum*.—ED.

THE CALIFORNIAN WILD GRAPE.

I HAVE never seen any description of a peculiar feature in the California landscape—the natural thickets and arbours of the wild Grape (*Vitis californica*). This beautiful Vine is found in its greatest perfection in the coast range valleys north of Monterey Bay, and in the richer portions of the Sacramento—San Joaquin Valley—plain. Over a territory some 500 miles long by fifty or sixty miles in width, the botanist is certain to find, in the bottom of cañons no less than in the open, vast growths of the wild Grape clambering over forest trees, shrubs, or rocks. Early in May, at which time I write, the fra-

in California is produced by planting wild Grapes by streams and planting trees to sustain them. The Vine in autumn, with its myriads of small purple clusters, is as attractive as in spring, and in winter its leafless draperies and entangled branches are no less interesting.

A fine place to study the wild Grape is on Alameda Creek, about thirty miles from San Francisco. Here, since the first pioneers of California discovered the region, the groups of giant Sycamores in the ravine near the stream have been loaded with immense Grape Vines. They extend over the boulders in the bed of the creek, and cross from tree-top to tree-top in

to the very tops of Sycamores and Oaks. In one place a sloping bank of 20 yards in height and 100 yards in length, lying exposed to the sun, has been covered by the Grape Vine. As far north as Shasta these massive effects of the wild Grape, in combination with our native trees, continue to attract attention, and as far south as Kern the wild Grape is beautiful beyond description. The wild Grape grows in the southern counties, but not to the same extent as in the central and northern districts. Above all it is the warm and fertile river-bottoms that produce the finest examples of Vine architecture.

In the old days of the stage coach I have travelled by moonlight along the Upper Salinas and beside the Russian River—Pines on the hills, Oaks in the valleys, masses of shrubbery, copses, openings, long lanes of light, deep shadows, park-like groups of trees reflected in the broad reaches of the river. Then suddenly, as I looked ahead along the clear river distance, towers and domes smooth and vast, with sweeping curves and marvellous beauty, rose in giant groups, and as the stage coach hurried on and into the midst of a colony of wild Grape Vines established on their Sycamores, it was hard to believe that it was other than a ruined Aztec city, so wonderful were the walls, towers, arches, steeples, columns, and vast architectural illusions built up by Vines and trees.

CHARLES HOWARD SHINN.

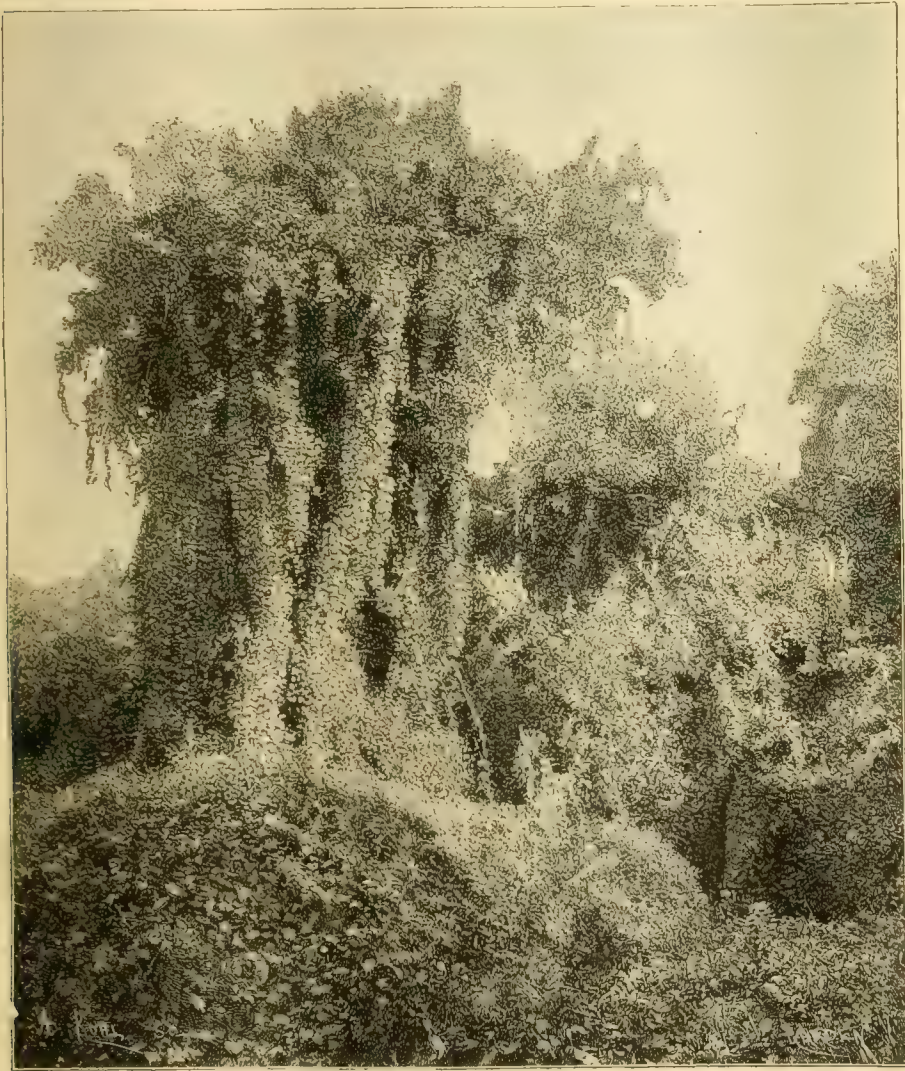
Niles, California, May 2, 1889.

STOVE AND GREENHOUSE.

BEAUTIFUL BEGONIAS.

I AM, or rather was, not particularly in love with Begonias. One of the poets has told us that "pleasures are like Poppies spread. You seize the flower; its beauty's fled," and the simile is in a manner true of these flowers, for if you lift up a gorgeous rosette to look it in the face, it will possibly fall off, and roll in the dust at your feet. I am like a cynical old earl to whom I once recommended Daffodils as nice things to grow. "Ugh!" he snarled; "there are only three or four things worth growing in a garden. Fine trees—I like noble old trees. Good turf—I like a fine velvety lawn; and I like plenty of Roses, and fruit, and vegetables, and I don't see what else one wants to grow in a garden!" I have always felt glad in my heart that I did not recommend the culture of Begonias to him. Yet, when you see tuberous Begonias beautifully grown in a cold house, and elevated on beds quite near to the eye, as I saw them grown yesterday at Bushy Park, Treenure, near Dublin, they are very rich and fair to see. But then I saw them in a fine old garden, not altogether devoted to Begonias. It is that, I think, which makes me tolerant enough to sit down and write about them. A noble old garden facing the Dublin mountains and containing noble trees, good turf, and many flowers other than Begonias. The Grapes, and Peaches, and Melons are good. The Cabbage, and Celery, and Tomatoes, and Cucumbers were good also, and so I can afford to say that the Begonias were really splendid.

The sight of a cool house filled with the best double and single-flowered Begonias is almost, even if not quite, enough to make one take to the culture of these flowers. The following were especially noticeable among the double-flowered kinds: Leon de St. Jean, orange-scarlet, in size like a small Hollyhock, its flowers set off most exquisitely by its deep green leafage; Ovide, a charming, pale creamy or white



Wild Grape Vines in the Upper San Joaquin Valley, California. Engraved for THE GARDEN.

grance of these Vine wildernesses, which is wafted to a great distance, is peculiarly spicy and refreshing.

As a rule, Water Sycamores by the streams, more often than Oaks, or Laurels, or any Conifers, become completely covered by the Vine. The Cotton-wood (*Populus monilifera*) is another favourite tree for the Vine.

The girth of the stems is small; a Vine that entirely covers a tree 60 feet or 80 feet high, and makes it seem like a leafy temple, springs from a stock less than 6 inches in diameter. One of the finest wild garden effects possible on the new estates that men of wealth are creating

such strong and twisted bridges, that an active man could pass in safety across 50 feet of space 40 feet above the ground. They form arbours which could shelter a large picnic party, and often, when a tree decays, it is still kept nearly upright by the Vine ropes which moor it to its neighbours.

Along the Sacramento, on the Rancho Chico, for instance, the Grape Vines have become the most striking features of the region, so smooth, graceful and vast are the hollow domes, arches, and green towers they have reared. One drive, I remember, along Rio Linda passes several hundred Grape Vines of great size, clambering

kind; Blanche Duval, an exquisite blush white; Madame Arnoult, blush or flesh, and of very good habit, Mistress Hall being a similar variety of a primrose tint fading to white at the edges of its shapely rosettes; Lucy Closon is a noble-blossomed double white or creamy variety, as also is Madame Vincinet, while Madame Comesse is a dainty rosy salmon, or pink flesh-tinted form; Felix Crousse is a vivid orange-scarlet, of good habit, as also is Monsieur Duvivier, a vivid crimson-scarlet, and Grandeur, a well-known kind, and much to be admired when at its best.

Of the single-flowered forms I was very much delighted with Raphael (Crousse), a plant of sturdy vigour, barely a foot in height, and bearing a flower fully 6 inches deep and nearly 4 inches broad. The colour is an intense fiery crimson, intensified by the dark velvety lustre of the leaves. Ball of Fire is a vivid fiery scarlet, with smaller flowers, and Golden Gem is a bold and effective yellow-blossomed kind. Marquis of Bute (Laing) is a free and bold variety, with shapely crimson flowers; Virgin Queen is a good white, and Lord Salisbury, a noble crimson-scarlet, very free and effective in its port and blossoming; while Alexandre (Crousse) is a fine and effective rosy crimson variety. A very fine apricot or buff-tinted flower is Countess of Rosslyn (Laing); Sir Peter Lumsden (Laing) is a good crimson, and La Vésuve is, as its name implies, a deep fiery scarlet of intense shade.

The above are only a selection from a houseful of glorious specimens, not grown in pots, but planted out in a deep border elevated 3 feet or 4 feet high on either side the central walk. The lights overhead are removed during fine weather, and the result is the plants are now practically in the open air. This seems the most rational method of culture, since shelter during rough storms is easily supplied, and one can examine the flowers with ease and comfort, not having to stoop or kneel, as is necessary when these flowers are cultivated in open-air beds. As I said before, I am not an abject worshipper of Begonias, but I really think that a couple of dozen of the best kinds, single and double-flowered, ought to be grown in all good gardens. They only demand shelter, being really very impatient of artificial heat, so that a cottager, if he cares to plant the tubers out in a cold frame, may grow them as well as anyone else.

Some of the kinds named above are really wonderful in form and colour. Beside Raphael, Lord Salisbury, or even Ball of Fire, I know no Masdevallia that could hold its own in brilliancy and depth of colouring. Sir Robert Shaw, who cultivates the above varieties among many others, is very fond of these brilliant flowers, and has raised many seedlings of great merit, some of which are bedded out with excellent effect on a fresh green turfing of mossy Saxifrage, and there are hundreds of hybridised seedlings on trial for the first time of blossoming in his classical old garden at Terenure.

Dublin.

F. W. BURIDGE.

Tecoma jasminoides.—This beautiful greenhouse climber is so seldom seen flowering in a satisfactory manner, that the sprays of it recently shown by Mr. Ross, of Pendell Court Gardens, should serve to add to its admirers. The finest flowering example of it that has ever come under my observation was a large specimen which was planted out in a greenhouse and trained to a part of the roof. Owing to change in tenancy, the plant was entirely neglected, as it was simply watered occasionally and allowed to run wild. When I saw it the long flexible branches were hanging about in

all directions and profusely laden with blossom, while others that had been shaded and tied in severely had not a single flower. Apart from its flowers, the dark shining foliage of this Tecoma is also very ornamental.—H. P.

WORK IN PLANT HOUSES.

CARNATIONS FOR WINTER FLOWERING.—The demand for these favourite flowers keeps increasing, as shown by those who grow them for market. Even in the season during which they are plentiful out of doors they fetch three or four times as much as Roses. With the public the self-coloured sorts are by far the most in favour, and deservedly so, for, pretty as many of the edged flowers are, they lack the distinct appearance of the selfs, which are far more effective when used in a cut state, either in combination with other flowers or alone. It would be difficult to point to any flower that is of so much service to gardeners who have large quantities of cut blooms to provide, for though Carnations that are propagated from cuttings or layers and grown on in pots do not give flowers in bulk equal to that of some things, yet the length of time the perpetual flowering varieties keep on blooming, and the long endurance of the flowers, is such as to make up for any deficiency in quantity. One of the chief things that should be steadily kept in view by those who have not had much experience with perpetual Carnations is to see that they always have enough stock coming on to give the requisite quantity of flowers. With even skilful management the plants cannot always be depended on to come into bloom exactly at the same time winter after winter. To make sure of the flowers at the time they are wanted, it is necessary to have the stock in slightly different stages of growth at the close of summer. With a sufficient quantity of plants this can be well done. It is now too late to do much in the way of altering the condition of the stock this season, but it is not too late to do something in providing for another year. Cuttings put in now on a gentle hot-bed will strike and get established before winter provided the warmth is kept up a sufficient length of time to admit of their being well rooted. Any attempt to strike cuttings in a cold pit or frame now when the shoots are getting hard will most likely end in failure. So treated they will keep fresh and green, but will make no roots. Plants that were turned out in the open ground in spring will have attained strength and vigour such as are rarely seen under pot culture. It is from such that the best cuttings can be had; and, in common with strong cuttings of other things, when once rooted, they always keep ahead of those that are weaker. Plants raised in this way, and wintered out of the reach of frost, will be in fine condition in spring for either growing on in pots or for planting out.

CARNATIONS PLANTED OUT.—Plants that were put out in the open ground in spring, and that are intended to flower in winter, must very soon be lifted and potted. The necessity for prompt action in this depends on the more or less forward state the growth is in. If the potting is put off until the bloom-stems are so far advanced that the buds are nearly visible, the chances are that most of them will go blind through the check the plants receive in lifting, in which case there will be no flowers until spring. It is through a want of studying the nature of the plants, and noticing how they behave under certain conditions, that the system of planting out Carnations that are intended to bloom in winter is not approved of by some who have tried and failed with it.

CARNATIONS IN POTS.—This has been a good season for pot-grown plants, the showery weather and the consequent humid condition of the atmosphere having helped the plants to make more growth than usual. To still further assist them now, when the soil should be full of roots, weak manure water must be given at times, for though slow-growing subjects that have hard-textured leaves, like Carnations, do not require stimulants, nor will bear them in such quantities, or of a strength equal to grosser feeding, quicker-growing

things, still moderate assistance in this way is helpful.

PRIMULAS.—Seedlings of both the single and the semi-double varieties of Primula that were raised from early sown seed, and afterwards pricked off into boxes, will now have made sufficient growth to require potting. When grown in this way they make much more progress than is possible when they are at once transferred from the seed-pans to pots; but, so managed, it is not well to allow them to remain too long in the boxes. If their roots get too far away and become matted into each other, the plants suffer when they come to be moved. They should now be put into the pots in which they are to be grown. Give them good turfy loam, to which add a moderate quantity of rotten manure, some leaf mould, and sand. In most cases, 6-inch pots will be large enough, as if well cared for, and assisted with manure water later on after the roots have begun to move freely, the plants can be grown as large and strong as it is necessary to have them. After potting stand them in cold shallow frames that are filled up with fine coal ashes, so that the leaves will be within a few inches of the glass. If the plants are deep down in the frames so that their tops are from the light, the leaves will inevitably become more or less drawn, in which condition the appearance of the plants is spoilt, and their ability to flower well is to a proportionate extent reduced. Give plenty of air in the daytime, and throw an old fishing net over the glass when the weather is bright. The lights will be better drawn off altogether in the night-time when there is no danger of heavy rainfall. Exposure in this way to the dew and moist night air will greatly benefit the plants.

DOUBLE PRIMULAS.—Plants that have been raised from side shoots during the early part of summer and are now well rooted should be moved into larger pots. Give good, rich, free soil, such as is recommended for the single and semi-double varieties. In potting, drain thoroughly and sink the plants well down in the pots, so that the base of the bottom leaves will be in the soil. I find it necessary to repeat this whenever speaking of the potting of these plants, as it is so far opposed to the practice that used to prevail, and to the apparently fixed ideas of many people, that they think that low potting will tend to aggravate the tendency which double Primulas have to damp off at the collar. The fact is, that it is the best means of preventing disease of this kind, to which the double varieties are particularly subject if kept too cold in the winter. The best safeguard against damping is to grow the plants during the summer as sturdily as possible by keeping them near the glass, to pot low, and in the winter to give all the light that is possible, and keep them in an intermediate temperature.

CYCLAMENS.—Where the plants are wanted to flower early in the winter of next year, seed should be at once put in. Large seed-pans or shallow boxes may be used. It is not well to limit the room in which the seed is sown; if this is done the young plants get drawn before they are large enough for potting. Use finely sifted soil with some leaf mould and sand mixed with it. Cover the seed with about a fourth of an inch of soil, press the surface down a little and cover with tissue paper to keep the soil from drying up quickly. Stand in a temperature of 60° in the night with a moderately confined atmosphere. The seed will soon germinate, and directly the little plants appear they must be shaded whenever the weather is sunny. All through the autumn and winter they must be kept at something like the temperature named, if good cultivation is intended and they are to be in flower within the time mentioned. The roots of plants that were raised last year at this time should now have a good hold of the soil in the pots in which they are to flower. Continue to shade them in bright weather until the end of next month. Few things have such a dislike to their leaves being exposed to the sun. If it is allowed to reach them when at all powerful it causes them to curl, and also brings on attacks of red spider. Still syringe the whole of the stock overhead every after

noon, and look well to the plants being free from insects of all kinds. To get *Cyclamens* up to the size and condition that the market growers have them, and in the limited time they require to grow them, they must be kept growing freely from the time the seedlings appear to when they come into flower. To do this the plants must have a small house or pit to themselves, or else only such things must be associated with them as will do with the treatment that they require. Nothing less than close attention to their wants will ever bring them up to their best form. They will repay the extra care which is necessary to grow them well.

CYCLAMENS, OLD PLANTS.—Old plants that flowered last winter and have been kept in cold frames or stood in the open air in partial shade through the summer will now be pushing up a fresh lot of leaves and will require repotting. Discard all the old soil, and give them new of a like description to that advised for sowing the seed in, except that it does not require to be sifted. A little cow manure that has been kept until it is old and mellow should be added for all *Cyclamens*, both old and young, after they have passed the first stages of their growth. The cooler nature of this manure suits them best. Give pots proportionate in size to that of the plants. After potting they will be better if stood in a cold frame or pit than out of doors, for though they want the soil to be always moderately moist, it should not get saturated with water in the way that will occur in the event of heavy rains.

WINTER-FLOWERING SOFT-WOODED PLANTS.—The different kinds of winter-blooming subjects that will succeed under the planting-out system in summer, such as *Salvias*, *Veronicas*, *Solanums*, and others of a similar description, should now have their roots cut in with the object of preparing the plants for lifting and potting. With strong, quick-growing things like the plants in question, it is better to go over them twice than to limit the work to a single operation. If the roots are severed now and again in about a fortnight the plants will feel the check less; there will then be no danger of the lower leaves suffering in the way that sometimes happens when the roots are allowed to go on unchecked until within a short time of the plants being potted.

CELOSIAS.—Plants of *Celosia pyramidalis* that have been raised from seed sown late with the intention of having them in bloom about the end of the year, will now require moving into the pots in which they are to flower; 7-inch are as large as it is necessary to give them, as much may be done to give the requisite strength by the use of manure water. Stand the plants close to the glass from this time onwards in an intermediate temperature. Syringe freely every afternoon; this is necessary to keep down red spider, to which this *Celosia* is subject. Medium warmth is sufficient to grow the plants well. Those who require a really fine strain of this useful subject should save their own seed, and select only the plants for the purpose that have the best feathery plumes, clear and decided in colour. The best forms produce seed sparingly, and the seed-bearing plants should be selected from those which have been raised from early sowings.

CHRYSANTEMUMS.—Where plants are grown in the open ground for the purpose of layering, so as to have small, dwarf examples in small pots, the shoots should be layered as soon as the bloom-buds are set. Varieties should be selected for this purpose that bear medium-sized flowers, and that are capable of perfecting a considerable number. Some of the old sorts—now not so much grown as the formal-shaped varieties, yet nevertheless more beautiful—are the best for use in this way. By this system, when fairly carried out, much finer flowers and better furnished plants can be had than the poor, badly-grown examples that are often met with where the cultivation of small plants is attempted. All that is necessary is to strip off the leaves from the portion of the stem that is to be covered in the little hillocks of fine soil in which the shoots are layered, and to peg the shoots down so as to hold them secure. The stems should be

layered a little below the buds, the ends of the shoots being turned upwards in an erect position. The hillocks of soil must be kept moist, and the layers will be well rooted in four weeks.

T. B.

Kämpferia Kirki.—This is the correct name of the Ginger-wort that has been often noted in THE GARDEN under the generic name of *Cienkowskia*. It is one of the most beautiful stove flowering plants that we possess, for it will continue to produce its large showy blossoms for some weeks. It is of very easy culture, as after a long winter's rest the light green, Plantain-like leaves are produced, then in a short time the flower scape is pushed up. This reaches a height of a foot or more and bears a great number of its large showy blossoms, which open in pairs. It does well in any ordinary potting compost, such as good loam, lightened by an admixture of sand, leaf-mould, and well-decayed manure. After the flowering is over the plant should be watered as hitherto until the foliage shows signs of decay, when less must be given, and during the winter, when the plant is leafless, the soil should be kept moderately dry.—H. P.

Bouvardias.—Great changes are taking place in the cultivation of this beautiful class of plants, for whereas at one time they were regarded as essentially winter-flowering subjects, it seems probable that before long we shall have them in bloom nearly all the year round. Still, for all that, the blossoms are more valuable during the autumn and winter than at this season; but where cut flowers are in demand at all times, a very good plan is to plant out any old plants that are available in a somewhat sheltered spot when all danger from frosts is over, when they will soon start into growth and flower till lifted in the autumn or cut off by the frost. If a bed of these *Bouvardias* is planted in the reserve garden, the plants can generally be depended upon to help towards the making of sprays, button-holes, and bouquets throughout the season. They must not, however, be relied upon for propagating, as the shoots produced under such conditions do not strike root nearly so well as those formed under glass early in the spring.—H. P.

Double Cinerarias.—Since these were introduced a few years ago, they have been much improved, but there is still much to be done before they become thoroughly popular. The colours do not seem to be so distinct as in the single-flowered kinds, neither do the plants, in a general way, grow so vigorously. These defects will doubtless in time be remedied. In the meantime, these double *Cinerarias* are well worth growing for the contrast they afford to the ordinary strain. In every collection of them that I have seen there was a considerable proportion of small badly-coloured flowers, and, in some cases, really good ones were rare. In such cases the better plan would be to pick out the good forms and isolate them, as when allowed to stand together it is unlikely that any of the seedlings from them will show improvement, and the greater portion of them will most likely be very deficient in quality. Some years ago, before the strains of single-flowered *Cinerarias* were brought to their present degree of perfection, it was customary to grow named kinds that had to be increased from cuttings, and this plan might well be followed in the case of every good double variety. After blooming, the plants should go into a cold frame having a north aspect, keeping them moist, but not very wet. As soon as the side growths form, they should be taken off with, if possible, a bit of root to them, and potted singly into small pots in light sandy soil, keeping them rather close until they begin to grow. If shifted as required and treated in the usual way they will make good specimens by winter.—J. C. B.

Begonia Scharffii.—About this time last year a very fine *Begonia* was exhibited at one of the meetings of the Royal Horticultural Society, from the Royal Gardens, Kew, under the name of *B. Haageana*, and it attracted a considerable amount of attention, owing to its being so distinct and beautiful. The plants at Kew continued to flower

for months, and towards the end of the year a coloured plate of it was given in the *Botanical Magazine*, under the name of *Begonia Scharffii*, bestowed upon it by Sir Joseph Hooker, though I see the name of *Haageana* is still retained at Kew. It is a bold growing species, reaching a height of a yard or thereabouts, with stout erect stems and large bronzy-green leaves veined with red. The most prominent feature, however, is the blossoms, borne in large densely packed clusters, and which from their weight assume a drooping character. The individual blooms are of a pale pink colour, while the sepals are at their base thickly clothed with reddish hairs, which become much less numerous towards the upper part. It is undoubtedly one of the very best *Begonias*, beautiful as many of them are, a great merit being that it will flower well on into the winter. Like the rest of its class, it is of easy culture, for cuttings strike readily enough, and as seed was plentifully offered last winter great numbers of young plants have been raised in this way.—H. P.

Rhododendron balsaminæflorum aureum.—The list of greenhouse *Rhododendrons* raised by Messrs. Veitch is now a long one, commencing, I believe, with Princess Royal over thirty years ago, and from the glimpses one occasionally sees of their resources, it bids fair to be continually augmented. Notwithstanding the many distinct breaks that have from time to time been obtained, the most marked stride was seen in *R. balsaminæflorum* and its varieties album and aureum, which were put into commerce a couple of years since, though they were exhibited and received certificates as long ago as 1882. These *Rhododendrons* appear to be as free flowering as the rest of their class, and the blossoms being perfectly double they remain in perfection much longer than those of the single varieties. The yellow flowers of the variety aureum are wonderfully bright and pretty, while, judging from one specimen, it is freer than the white-flowered form.—H. P.

Oleanders.—The Oleander and its varieties now in flower are in the shape of large bushes very ornamental objects for the conservatory, as their showy blossoms are widely different from any of their associates. They may be kept in good health with but little trouble, and will stand for years without repotting. Oleanders are somewhat liable to run up tall and naked, and in order to prevent this, as far as possible they should be freely stopped during their earlier stages. Should any specimens, however, have got too tall, they will break freely if cut down directly after blooming, but of course it will be at the expense of the next season's display of flower. Cuttings of the growing shoots strike readily if dibbled into light sandy soil, or they will also root in water alone. There are a great number of varieties in cultivation, the majority of them with double rosette-like blossoms. I have induced the double white-flowered variety, *Madonna grandiflora*, to bloom freely in the shape of small bushes less than a yard high, and doubtless several of the others would also flower well in this way. The plants under notice were plunged out of doors directly the frosts were over, and kept there till the flowers were nearly ready to open.—H. P.

Early-flowering Gladioli.—There is a group of *Gladioli* that flower much earlier than those of the *gandavensis* section; so early, indeed, that, if required, they may be forced for the embellishment of the greenhouse during the spring and early summer months. Yet, with the exception of the white-flowered *G. Colvillei albus*, very few of them are cultivated for such a purpose. In the open ground these *Gladioli* require a warm, well-drained spot, conditions such as are to be met with in the island of Guernsey, where the cultivation of these and many other somewhat delicate bulbs is made a speciality of. In THE GARDEN, Dec. 22, 1888, there is a coloured plate of four varieties of this class from the nursery of Messrs. Hubert and Mauger, Guernsey, who succeed remarkably well in their cultivation, and from whom I have received a beautiful gathering of select varieties. Besides those figured in THE GARDEN, viz., *Blushing Bride*, *Rosy Gem*, *General Scott*, and *roseus maculatus*, I

should recommend *Ardens*, a wonderfully bright flower, and *Colvillei albus* (The Bride), pure white. Though I have seen them announced as distinct, it seems to me that Blushing Bride, Fairy, and delicatissimus are one and the same thing, or, at all events, so near each other that only one of them is required. Where grown in pots, the bulbs should be potted as soon as received in a soil consisting of loam and leaf-mould, with an admixture of sand and decayed manure. About half-a-dozen bulbs in a 6-inch pot form very convenient little masses when in flower, and the time at which this takes place will depend upon the treatment given them, as if just protected by a cold frame they will bloom but a very little earlier than those in the open ground. With a little forcing, however, they may be had in bloom by the spring. The spikes are extremely useful in a cut state, and the blooms will remain in beauty a considerable time early in the season.—H. P.

FLOWER GARDEN.

IRIS KÆMPFERI.

IRIS LÆVIGATA or *Kæmpferi*, to use a name by which it is better known, closes the *Iris* season, and there is no more fitting species to end the flowering period of such a race as the *Iris*, in which we have an endless variation in habit, characteristics of flower and cultivation. There are few bad *Irises* and many good kinds, as the one we have now under special consideration. This is one of the greatest treasures we have received from Japan, and, as in that land of flowers, we also can grow it by the rippling stream, the pond, lake, or brook. It is to the Japanese what our own beautiful Water Flag is to us; it is their great waterside plant, and in a few photographs in my possession of glimpses of Japanese scenery, the noble *Iris Kæmpferi* can be discerned sending up its spikes of flowers above the Reeds and waterside plants that abound in Japan. We want such a condition of things to exist here. There are too many closely shorn banks in English gardens, and seldom are the waterside plants made the good use of they might be, as at Pendell Court, or Mr. G. F. Wilson's delightful garden at Weybridge. I was charmed with some photographs the other day of breaks of *Iris Kæmpferi* taken in his Weybridge garden, and if those who have just as good opportunities would grow such water-loving plants amongst the Reeds and Sedges that usually monopolise all the space, we should be great gainers, as there are few more beautiful bits of garden scenery than a fringe of flowers and Sedges to a pond or brook, or whatever piece of water it may be. An English brook fringed with the golden flowers of the common *Iris* is always worth imitating in the artificial garden, and if gardeners and others would form their ideas more from such natural models, there would be fewer paltry, tasteless effects in gardens. It is not only *I. Kæmpferi* that may be used thus, though by its nature this is one of the best, as there are the Siberian *Iris* and its several beautiful varieties that will flourish there, and then we have the many lovely forms of *I. spuria*. From one genus alone we have a good selection of the finest flowers for the enrichment of the waterside bank.

It is proper to speak of *Kæmpferi's Iris* now, as the last flowers are fading, and on the whole this has not been an indifferent year, although in many places the flowers have been undersized, and wanting in that strength of petal that characterises them in the best seasons. The wet weather of the past month has helped it, for it is of all *Irises* the one that loves its roots in water; and seldom has it failed so conspicuously

as in the dry and unpleasantly hot season of 1887, when the plants were almost burnt up by the unusually fierce spell of sunshine. I was reading a communication the other day from a man who complained of the failure of *Iris Kæmpferi*, and finished up by mentioning that he had the plants in a border. Here was the secret of the failure—want of water. It is as unreasonable to try and grow plants without soil as to expect *Iris Kæmpferi* to flourish and flower properly without moisture at its roots. But this does not preclude those who have no streamside or pond from growing this Japanese Flag. It may be planted in a common border, even though naturally dry, but it is necessary to give the clumps of *Iris* copious draughts of water. The plant is not, as many suppose, particular as to soil. Mr. Gordon, of Twickenham, who has made the cultivation of this *Iris* a speciality, has the plants in strong loam, but they will do equally as well in peat, although the more solid staple is the best. It seeds freely, and seedlings show an interesting variation, while stock of any particular kind that it is desired to increase may be divided, though it is not wise to disturb the clumps too often, as, like many other plants, *I. Kæmpferi* has a dislike to frequent disturbance at the root. When it is done great care should be taken. The best times are the autumn and spring, and in the case of imported roots the spring is the season to select for planting.

Very few flowers are free from the meddling of the florist, who, not content to raise good single flowers, must give us a hideous double Siberian *Iris*, and a monstrosity in the shape of a double form of *I. Kæmpferi*. It is strange to account for taste, but no one, we should think, could perceive beauty in such a contortion of a lovely flower. There is an increase in the culture of double varieties of *I. Kæmpferi*, and those who read glowing advertisements of them should remember this condemnation. By doubling and trebling the number of segments we lose that beautiful symmetry, the bold curves and outlines such a flower gives us; they are lost in the mass of substance to which all natural grace gives place to irregularity and lumpiness, without a vestige of the original beauty. We may compare *I. Kæmpferi* to the grassy *Iris* of Siberia, as the two have much in common besides that of habitat, as *I. Kæmpferi* is also a native of Siberia, and we can well plant them together so as to secure a succession, though there is an interval of many weeks between the flowering of the two species. Of course, we have to thank the Japanese for much of the present perfection of the flower. Considerable importations take place each year, and with them also comes a list of coloured drawings, roughly done, but boldly and correctly coloured, typical of the kinds sent; thus the purchaser knows the character of his plants by these well-executed sketches. There is a wide range of colouring, from the purest white to the deepest purple. Few flowers have such purity, breadth of segment, and striking individuality as the variety shown recently by Mr. Ross, of Pendell Court Gardens, Bletchingley. This was imported from Japan by Sir George Macleay, and named after him. It is the largest of its group, the flower having falls of immense width, these and the other part white, with just a trace of lilac that is exceedingly delicate. Such a noble flower, poised on a strong stem standing up amongst Reeds and Rushes by the water-side, would have an uncommon charm. There are deep purples of many shades, no carmines, although perhaps in the loose language now used they might be so called, and several mottled and speckled flowers, like bits of mosaic, which should be avoided as dross. It is the self kinds of rich decided

shades that are wanted, and it is only these that give good effects in the garden.

When gardeners have learnt to grow the *Kæmpferi's Flag* in its proper position, our gardens will be made more interesting, beautiful, and natural. C.

YELLOW CARNATIONS AND PICOTEEES.

IN these, as in *Roses*, there are many sorts that, although bearing different names, are too much alike. It is very annoying for those purchasers who, for various reasons, are not able to select the sorts when in flower that they would prefer to have, to buy and grow at least for one year many kinds that, for all ordinary purposes, are almost exact counterparts of each other. I have before me as I write flowers of four yellow self *Carnations* that are almost identical as seen off the plants. These are *Edith*, *Maréchal Niel*, *Pride of Penshurst*, and *Lady Primrose*. Unless there is a difference in the character of their growth, the flowers are so nearly alike, that, for ordinary purposes, only one of them is wanted. Of the three first mentioned, the *Pride of Penshurst* is unquestionably the best, as it is the strongest grower, but even this popular kind is much inferior in the matter of growth to *Lady Primrose*. Does anyone know of a yellow self *Carnation* called *Lady Primrose*? I cannot find it in any list. No growers with whom I have consulted know it under that name or any other, nor do those who have seen the plant growing and in flower recognise it. I may mention that a fairly strong plant of this variety was sent to me early in the spring of last year. By layers and cuttings I obtained ten plants, which I put out in February last. All of these have flowered in the most satisfactory manner. The plants obtained from cuttings flower as well as those raised from layers, and the number of shoots produced is seventy per cent. more than on any other yellow sort in my collection. The growth is wonderfully free, but compact, forming neat tufts. I had not the least difficulty in striking the cuttings in a cold frame. So far as I have seen, there is no other yellow-flowered variety to equal it.

Some of those with yellow grounds are very indistinct in colour unless carefully protected from bright sun and rain. They may suit those who make a speciality of *Carnations* and grow them in pots, but they are not suitable for the average grower, who cultivates his stock in beds, as they do not bear exposure well. J. C. C.

Border Carnations.—There can be no doubt but that "*A.*" is quite right in stating that *Carnations* are not so popular (*i.e.*, not so widely grown) as they deserve to be because of the need for layering yearly to increase stock, and indeed to preserve the stocks. But it is just there where the raising of seedlings comes in to help sustain popularity, which would otherwise speedily wane. It is so very easy to sow a packet of seed to obtain thereby some 200 or 300 plants, to dibble them out into beds or borders, and to give them a stake or two early in the summer that the flower-stems may be neatly supported. No one objects to so much trouble in relation to seedlings. It is when the necessity for layering comes on that there is a break down, for whilst the work may be pleasant enough to those who know how to perform it and have ample leisure, to those ignorant of the practice of layering, the work is wearying and laborious. Of course layering must be done if special varieties are to be preserved, but in the case of *Carnations* for ordinary border decoration seedlings give far more beautiful effects and are obtained at such inconsiderable trouble. Those who have not flowered strong seedlings have little idea of plants carrying from twenty to fifty stems covered profusely with fine double flowers, rich in colour and in perfume. Some may be deficient in grass because blooming so profusely, but that matters little when it is the rule to put out a batch of seedlings yearly. Very much may be done in securing a stock of fine blooming plants by putting into a frame or under hand-lights a quantity of pipings. This should be

done in the autumn, and although few of the rooted plants may bloom next year, yet they will the following year carry large heads of flowers and amply compensate for being longer about than is the case with layered plants.—A. D.

HOLLYHOCKS.

THOSE who anticipated, after the bright promises of three years ago, a complete restoration of the Hollyhock to its pristine vigour will have no reason to rejoice over its appearance this year. Disease has affected the plants more or less everywhere, though I learn from some places that they are thriving well. In the Royal Gardens, Kew, the clumps are in full bloom, but the leaves are blighted and disfigured by the fungus that threatened at one time the very existence of our stateliest herbaceous perennial. In one nursery near London scarcely a trace of the plant remains, but it is in few gardens or nurseries that such complete destruction can be chronicled. The great point in Hollyhock culture is not to use artificial heat, and to this we can trace so much of the harm that has resulted to the plant. The disease found a ready foothold on a flower weakened through years of unnatural treatment as the quick raising of stools necessitated to supply the large demand. In Messrs. Blundell's nursery at Dulwich, almost wholly devoted to the Hollyhock, little or no artificial heat is used, and therefore we have strong plants, each carrying such fresh and finely-formed flowers as would have delighted the fanciers of olden days. The time to sow seed is March, and if sowings are made in succession, a good display of bloom may be had over a long season. Sow thinly in a south border, and transplant the plants when of sufficient size to beds, from these removing them to their permanent quarters the following March. Strong seedlings will occasionally bloom in six months, and this is an advantage, as the finest types can then be selected, the others thrown away. It is only of course by a rigid selection of the best and strongest varieties that a good race of plants can be raised. Now is an excellent time to plant out the seedlings, as they will have a long season of growth before undergoing the trials of winter frost and wet. After the best types of seedlings have been selected, and the seed, if any, has been saved, cut down the spikes, so as to throw the whole energy of the plant into the suckers, which should be taken off with a heel. Even these will root without artificial heat, but if there is any at hand, it may be used to promote quick root action. They may, when rooted, be removed to a cold frame, given plenty of air through the winter, and in the spring be planted out in strong loamy soil. This is also the time for striking cuttings or eyes, and the compost Mr. Blundell uses for these is made up largely of sewer sand mixed with loam, leaf-mould and charcoal. It is useful for potting up the cuttings or eyes after they are struck. There is no difficulty in Hollyhock culture, the plants requiring simply a rich soil well manured and plenty of water in the summer if the weather should be unduly warm. In such a season as the present, of course, no watering is required.

If flowers are required simply for exhibition, the practice is to top the spikes before they run up too tall and thin out the blooms, so as to increase the size of those that are left. It is an unnatural practice and to be condemned, simply because it shows the Hollyhock in a false phase on the exhibition board. A few fat blooms, so crowded with petals as to lose symmetry, form, and grace, give no idea of the stateliness of the Hollyhock, yet stands of flowers are not now in-

frequent at shows. They remind us of miniature Cauliflowers placed on a board without foil of any kind, either artificial or natural.

There are several named varieties of which we have made a note in the Dulwich nursery, and those well deserving special mention are: Shirley Hibberd, scarlet; Venus, white; Primrose Gem; A. F. Barron, deep crimson; Mrs. Sharman, salmon-buff; Ettie Beale, flesh colour; Princess of Wales, salmon-pink; Rubens, carmine-red; and Magnet, crimson. Those who do not care for named kinds will



Hollyhock flowers in a vase.

secure a good variety of colour from a packet of seed if saved from a choice strain.

One word as to the placing of the Hollyhocks in gardens. A long row at the back of a wide border is not the best way of showing off its stateliness, but rather in large clumps placed at a distance, so as to make distinct breaks of colour. It is too coarse for a near position, but planted on the outskirts of the lawn, shrubbery, or the rougher parts of the garden it gives a homely picturesqueness to the scenery. A surfeit produces a sameness that

destroys the rich harmony to be looked for in every good garden. In small villa plots Hollyhocks are seen to signal disadvantage simply through too liberal planting. It is scarcely a flower for a small garden. Its very character seems to require scope and breadth. And here we may allude to another use of the Hollyhock, and that is as a cut flower, as shown in the accompanying engraving. Hollyhocks are lumpy and heavy, but arranged as we see them here, with no attempt at fancy designs or arrangements and in an old-fashioned vase in rich keeping with the flower, a charming result is obtained. C.

Campanula carpatica.—This is a most beautiful and free-flowering Harebell, and deserves to be grown largely in important positions in the flower garden. Whether upon the rockery, as a broad edging, in a wide and open group, or as a carpet plant to things of taller growth it is charming, spreading out into tufts which through July and August send up numerous flower-spikes, each about 1 foot high. Still more charming and effective and, I think, more free-blooming than the type is a pure white form sold as *C. carpatica alba*. It should be in every garden where hardy plants are cared for. This *Campanula* is as easily raised from seed as any annual, but the white form cannot be relied upon to come perfectly true, although in a large batch we have raised from seed at least ninety per cent. of the white have come true to name.—A. H.

Crocuses in the Grass.—Some years ago I planted some *Crocus* bulbs of various colours in an old hedgerow where the Grass grows rankly. I did this just to prove the truth of the statement that I have more than once seen made, that this bulbous flower will not live long among herbage. The result of my experiment was that the bulbs flowered very well for three or four years, and would probably be in good condition there now, but that they were at length dug out by some boys. This seems to prove that *Crocuses* may be classed with those bulbous flowers that are suitable for naturalising in the Grass. I found, however, that the rate of increase was very slow, but I think that this is the rule with bulbous flowers in the Grass. It is noteworthy of *Daffodils*, for instance, that whilst in gardens they soon grow into crowded clumps and need transplanting every now and then, they never seem to do so in pastures. This is an advantage, as the bulbs always have enough room and so bloom regularly. Soil may influence the *Crocus* to the extent of causing it to fail in some places among Grass, but that this is not always the case I have now proved, and in no position does the *Crocus* look so much at home as amongst herbage.—J. C. B.

Dressing Carnation flowers.—Personally, I have no objection to any flower being manipulated in whatever way the exhibitor chooses, but I take it that flower shows are got up for the delight and edification of the public, so that they may see naturally grown flowers. How, then, can it be said that the spirit of such an undertaking is properly carried out when some of the *Carnation* flowers are made to appear larger and more perfect in form by the art of the dresser than those which are put before the public as they are taken from the plant? Many a visitor would turn away disappointed if he was to turn round the spikes of *Gladioli* that are placed before him and catch a sight of the pins and ties of cotton that have been used to bring all the flowers so as to face one way. I do not say that this is practised in every case, but having seen it at flower shows more than once, I know that it is sometimes done, and without any sufficient reason, because most of us know the form which these flowers take when left to themselves. Of course I am speaking of ordinary varieties. There are many of the better class of flowers that are grown for exhibition by regular exhibitors that do not require any of the dresser's art to bring them into shape. With regard to what "A. D." says about dressing *Carnations*, it is perfectly true

that when exhibited they are often made to appear much larger than what they are when not dressed. I saw abundant evidence of this at a flower show lately. There was a box of dressed and one of undressed flowers standing side by side. The sorts were for the most part the same, but the difference in the space covered by the individual blooms was most marked. The flowers that had been so skillfully manipulated with the tweezers were much the largest. This is not fair to the public. If the florists, to keep up their ideal of a perfect flower, must resort to the art of dressing, by all means let them do so; but in justice to those who go to flower shows to learn and admire, they should take some means of letting the public know that the productions they place before them are not quite in the form that Nature produced them, and then no one could accuse them of misleading.—J. C. CLARKE.

NOTES ON HARDY PLANTS.

Saxifraga ohioensis is one of the sweetest things on the rockery at the present time. The small pure white flowers are loosely, but neatly arranged on short, erect stems, and have the effect of crystallised stars. The foliage, too, is distinct; the shining leaves remind one of those of the Galax. It may be grown at the base of rockwork, and it is as hardy as any of our European species.

Haberleas and Ramondias.—I have again succeeded in getting small plants from leaves. The way is to select perfect leaves—without any serenity—of good size; they should be carefully removed by a right and left action, which brings them away cleanly at the natural joint of leaf and plant. No other preparation is needful. The leaf should be set not deeply, but quite flat. Shade and moisture are given, and in time the young plant appears springing from the base of the leaf-stalk. Old Cocoa-nut fibre is a good medium for rooting, and I find April a good time to begin to put in the leaves.

Lychnis chalcidonica.—The rich scarlet colour of this good old plant is well known and appreciated, but a few plants here are more highly coloured than usual, and no doubt the fine sunny season is to be thanked mainly for the more intense colour. All the plants, however, are not equally good, and what I wish to observe is that there may be something in soil to account for the better colour, for the plants on the rich plot of an old Asparagus bed where, of course, manure and salt were freely used, are simply superb.

Vincetoxicum officinale is not a showy plant, but its straight stems, neat arrangement of fleshy leaves, and small and singular creamy white flowers are interesting. When in flower, as it is for two or three months, the plant gives off a pleasant smell, and the roots are richly perfumed. Those who care for old historic plants might grow hundreds of less interesting subjects than this Swallow-wort.

Spiræa kamtschatica (Pallas).—In these notes I referred to this noble Meadow Sweet last year under the name of *S. gigantea*. Those who have water or stream gardens have a glorious subject in this plant. It would, however, have but a limited sphere for displaying its decorative qualities if it could only be grown near water. The only difference is that near water it may grow 7 feet or 8 feet high, and in a dry garden like my own, it grows only 4 feet or 5 feet. Perfectly hardy even in frozen water.

Waldsteinia trifolia.—I was delighted to see a coloured plate in *THE GARDEN*, Aug. 10, of this pretty, but neglected plant. If amateur gardeners did but know the many uses to which this creeper can be put with success, it would surely have been better known ere now. It is one of the plants that used to charm the late Rev. Harpur Crewe. Long ago he sent this plant to me saying how fond he was of it. I have always, however, grown it under the old name *Comaropsis trifoliata*, and though I have often been inclined to follow the times and adopt the newer name, I have kept to the old one, as answering the double purpose of recalling both

a favourite plant and its donor. The plant is evergreen, and is in no way particular as to soil or situation. It makes a capital carpet plant under shrubs by walks or drives, but I ought to say that its habit of growth is so densely matted that many shrubs might be starved if surrounded by it. It looks better nowhere than in bold patches on ledges of rockwork in full sunshine; in such positions it flowers more freely than in richer and moister soil.

JOHN WOOD.
Woodville, Kirkstall.

INTERMEDIATE STOCKS.

FEW plants are more acceptable than these Stocks in early spring, but it is not often that one meets with a good batch of plants, except where they are grown for commercial purposes. Even for market work the supply is often somewhat limited. To succeed well with these useful plants it is of the first importance that the seed should be sown at the proper time, for if sown a little too early the young plants get spindly through the weather being too warm, while, on the other hand, if the seed is not sown early enough, the plants will not get sufficiently established to stand through the winter well. Consequently, when the weather becomes more favourable they are weakly, and take some time to start away freely.

I like to sow the seed about the first week in August. A cool shady position should be selected, and a hand-glass or frame placed under the shade of a wall with a northern aspect is best. The seed may be either sown in pans, or the frame may be prepared, and the seed sown on the surface. The seed should be sown thinly so that the young plants may get established before they have to be disturbed. If the seedlings are not crowded they may remain in the bed or pans until they are large enough for potting into 3-inch pots; this will be about the middle of September. In taking up the seedlings, care must be taken not to damage the roots. The plants should be potted rather firmly, using good loamy compost, which should be enriched with some well rotted manure, and the addition of some old lime rubbish will be very beneficial. After the plants are potted they should be plunged in a cold pit. It is better to keep them as close to the glass as possible. They should be kept close and well shaded for a few days, but as soon as the plants begin to take root in the new soil a little air should be given and shading may be gradually dispensed with. After the plants are well established plenty of air must be given, or the lights may be taken off altogether on all favourable occasions, but care must be taken that the plants are not exposed to heavy rains.

WATERING.—It is important that great caution should be exercised in using the watering-pot. When the plants are first potted, they may have one good watering, after which they will require only a slight sprinkling over the surface for some time, but this should not be repeated too frequently, and sufficient water should be given at a time to pass through the pots. The roots being very slender, they are easily damaged by either extreme, and it is difficult to decide which is the most destructive, excessive moisture or drought, but I believe mischief is often ascribed to the former when the latter has really been the cause of damage. The roots, having suffered from drought, refuse to take up moisture when water is given; consequently, damage is detected while the soil is wet, and of course the evil is put down to over-watering, while the opposite is really the case. The plants should be ready for potting into 4½-inch pots about the middle or towards the end of January. The same compost may be used as previously recommended, but a little more manure may be added, and as the pots get filled with roots, liquid manure may be used freely. Intermediate Stocks are nearly hardy, but it is best to protect them from severe frosts, although no artificial heat should be given. Anything in the way of a close warm atmosphere is sure to draw the plants up weakly, and is also liable to produce mildew, which is sometimes very troublesome. Intermediate Stocks when started well with ordinary care

give little trouble, but once let them get into a bad condition and they will never recover sufficiently to make really good plants. A.

Clematis Jackmani alba.—What is the experience of your readers with respect to this Clematis? I have two plants of it doing well, but they do not bloom. They are growing quite rampantly, but up to the present there is no sign of a bud on them. The appearance of the foliage appears to indicate a hybrid origin between a spring or early summer-flowering kind and perhaps Jackmani, the former predominating. If this is its true character, it ought not to have been distributed as a white Jackmani. It strikes me that we have not yet got a good continuous-blooming, large-flowered white Clematis.—J. C. B.

Viper's Bugloss (*Echium vulgare*).—This is one of the prettiest and most effective hardy flowers, and is as well worth a place in gardens as many cultivated plants. The flowers are of a beautiful blue, crowded on stiff stems, and when the plants have room they branch and form compact specimens a foot or more across. I lately noticed some large patches of this Bugloss in a meadow which had been once mowed, and the second crop being thin, the intense colour of the flowers was very noteworthy. It struck me that this plant might be made good use of in the wild garden, and really good blue flowers are scarce.—J. C. B.

Spiræa gigantea.—I fear that in this huge and far from attractive plant we have but added to our list of garden plants what some do now irreverently term weeds. Here is a plant carrying huge Raspberry-like growths from 6 feet to 8 feet in height, and the outcome of each shoot is a panicle of flowers just about what we see on the Meadow Sweet everywhere and far more effectively, because the Meadow Sweet flowers may be looked down upon, whilst those of the giant variety are so high up, that a special platform is needed to enable one to see them. If out of all this height and growth the flowers produced were beautiful and attractive, the exceeding height of the growths might be forgiven. As it is, we have a giant *Spiræa* that has dimensions only to recommend it.—A. D.

British Mulleins.—Our native representatives of this family are pretty when found wild in quantity. Recently, when strolling in a large park, I came upon a wide pit with steep chalky banks where Grass could not grow, but the Mulleins thrived in large natural groups. *Verbascum Thapsus* was in fine form. Is this kind subject to variation? because there were several plants that had the growth of *Thapsus*, but a much larger flower than is usually seen upon that species; in fact the blooms were as large and good as those of *V. phlomoides* of gardens. There were several fine colonies of *V. nigrum*, and it is a beautiful species, the broad green leaves forming a good base from which the flower-spikes stand erect, 3 feet or more high, and densely clothed with small yellow flowers, the stamens being beautifully fringed with purple hairs. I did not find the pretty white Mullein here, *V. Lychnitis*, but I believe it is somewhat local in its distribution. I once found it growing in quantity along the grassy fringe of a wood near Arundel.—A. H.

Varieties of Coreopsis.—The old *Coreopsis*, or *Calliopsis tinctoria* has long held a foremost position among hardy annuals, and it well retains this place, being showy and excellent for cutting from. There are, however, other kinds that are equally worthy of general cultivation, but that do not seem to be much grown. Among these *atro-sanguinea* and *coronata* are conspicuous, the former for its richly-coloured bloom, the latter for the duration of its blooming period. *C. atro-sanguinea* has an extremely fine appearance grown in a mass. With me it shows some variation, the majority of the flowers being blood-red, whilst others are edged with rich yellow. This kind is of a rather more compact growth than *C. tinctoria*, and certainly produces a finer effect. *C. coronata* has bright yellow, well-formed blooms, is more dwarf in habit than the preceding, and with good culture will re-

main in bloom for two or three months. There is one way of growing these varieties of *Coreopsis* that may be practised where a tall growth is not desired. They may be topped back in the same way as other plants and with the same results. In the back row of small borders they, however, look very well growing naturally.—J. C. B.

Daffodils relifted annually.—I can assure Mr. Wildsmith (p. 129) that all the Daffodils are very much the better for being relifted and replanted every year, provided the operation be performed at the right time. This is when the leaves turn yellow in June, and they had better be lifted too early than too late. The practice is general in Holland, and of recent years in England and Ireland, wherever *Narcissi* are really well cultivated, and not simply allowed to take their chance, as they do in the woods and meadows where they are wild or naturalised. A friend of mine has two sets of Daffodils of all the finest kinds. One set he grows in pots and tubs to flower under glass in cool structures, such as the Rose house, Camellia house, orchard house, &c.; and the other set he grows in the open air on a sloping sunny border. It follows, of course, that one lot is planted out, and the other lot relifted for forcing every year, and this is carried out with perfect success. The bulbs replanted annually always flower better than those left in the ground year after year, and, what is more, they increase more rapidly and form larger and more shapely bulbs, besides which, for bedding-out purposes one has the advantage of knowing exactly that there will be no weak spots or failures in the bed, a drawback sure to occur if the bulbs are allowed to remain in the same soil year after year. I am pleased to know that Mr. Wildsmith has taken the Daffodils in hand, and if he will boldly uproot them every year in June or July at latest, replanting them at once or a month later as convenience demands, he will soon find that it is by far preferable to the old plan of allowing them to become well established or to die out, as the case may be. The best growers always relift and replant every year.—F. W. BUBBIDGE, *Dublin*.

SHORT NOTES.—FLOWER.

Lilium longiflorum, forced last year and planted out, is now blooming freely at Kew, while late-flowering Lilies are now at their best.

Salvia patens.—A small bed of this and the white variety is very pretty at Kew near the Palm house. There are few finer *Salvias* than this.

A double **Snapdragon** is a monstrosity we noticed in a garden the other day. We hope it will go no further. It is as ugly and lumpy as a double Pansy.

Montbretia crocosmiæflora.—This looks well in a bed by itself on Grass, and in this way it is grown at Kew. The plants have produced a forest of flower-stems, which make a distinct break of (an unusual colour at this season of the year.

Gladiolus branchleyensis is flowering brilliantly at Kew. There are two large beds of it on either side of a walk near the Palm house, and we have seldom seen plants of such vigour both in leaf and flower-spike. It is an excellent way to have single beds of it on the Grass.

Groups of Tiger Flowers in the border associated with Lilies, *Gladioli*, &c., are charming, far more so than when the bulbs are dotted about here and there indiscriminately. The bulbs should be planted in spring in a light soil and warm aspect, lifting them in the autumn.

Oswego Tea (*Monarda didyma*) is the most brilliant plant on the Kew rockery, where it is blooming freely in a boggy recess in which *Spiræa palmata* and other moisture-loving plants delight to run riot. The rich scarlet flowers are remarkably showy peering up through the mass of greenery.

Willow Gentian (*Gentiana asclepiadea*) is blooming well on the Kew rockery. There is a vigorous mass of it in a sheltered position, the deep purple-blue flowers appearing almost the whole length of the stems. Growing with it is the white variety, which shows no other difference than in the colour of the flowers. The Willow Gentian is charming when naturalised in the Grass.

Tigridia Pringlei.—On a sunny border at Kew, where the soil is light and just suited for the Tiger

Flowers, this new *Tigridia* was recently in bloom. It may be now, but as the flowers only last a day it is not safe to predict. They are of the most fiery scarlet, except within the cup, which is blotched with clouded crimson on a yellow ground.

Pyrethrum uliginosum.—This is another of the tall forms of hardy plants, the stems often running up to 6 feet in height before blooming. But at last they terminate in a cluster of beautiful flowers, every one of which may be cut singly and be effectively employed in table decoration, nosegays, &c. The shoots may also be layered, and they will root and make capital plants about 2 feet in height. The tops of the shoots may also be taken off in June and be easily rooted, thus ensuring a batch of dwarf plants for pot flowering, and very charming are they under glass late in the autumn. Then the shortened stems break back lower down and bloom profusely very much dwarfer than would otherwise be the case. Of all tall-growing hardy border plants the *Pyrethrum* is one of the best.—A. D.

KITCHEN GARDEN.

KITCHEN GARDEN NOTES.

TOMATOES FOR WINTER.

It is important that an early start be made with the plants that are to produce fruit in quantity during the late autumn and winter months. Those placed in their quarters much later than the present time, if they grow strongly, may yet refuse to flower and set fruit properly, and in any case it is the wisest course to be rather too early than late, as it is an easy matter to retard the crops after they are once set. All things considered, there are no varieties to excel a good form of the Large Red for winter work, Dwarf Orangefield, Open Air, and Earliest of All, also corrugated varieties, being the next best substitutes. Ham Green Favorite, Hackwood Park, and Perfection are all fine handsome varieties, but as a rule they do not set nearly so freely as the ribbed sorts, especially during cold, dull weather. It will also be found that the trellising on the roof of a light, well-ventilated forcing house is the best position for winter Tomatoes, and in many instances they might be put out in close succession to either Melons or Cucumbers without changing the soil. An unlimited root-run, especially when this is of a rich nature or consisting principally of old hot-bed material, predisposes an over-luxuriant top-growth, and this is the least to be depended upon to produce good crops. Our plan, and which answers remarkably well, is to shift strong plants from 6-inch pots into 12-inch pots late in July or early in August, and as soon as the house is ready they are placed in their fruiting quarters. The roots are not confined to the pots, but are allowed to spread out at will into the bed of soil and manure on which they are set. The pots serve to check rank growth, while the plants derive great support from the bed beneath, this doing away with the necessity for very frequent waterings and the use of liquid manure. Whether the plants should be disposed along the fronts of houses and trained up the roofs or in the centre, and, after the trellis is reached, trained both up and down the roof, ought to depend upon circumstances—the latter plan best suiting our long flat roofs. For these winter crops I prefer to have a few plants and train them on the extension system than a much greater number put out 12 inches apart and kept trained to a single stem. The latter are apt to become too luxuriant; whereas the less restricted plants form harder haulm, and are much more productive accordingly. The simplest course is to lay in leading growths wherever there is room for them, though whether these shall be trained 12 inches or nearly double that distance apart ought to depend upon circumstances, the less distance being allowed when the house is principally devoted to Tomato culture. All leading growths should have the side shoots kept closely removed from them, the only exceptions being when more fruiting

wood has to be laid in and when the plants are diseased. Being trained either up or down the roof, they will produce bunches of flower at short intervals. A high temperature and moist atmosphere prove fatal to a good set, but if air is given freely, a buoyant atmosphere maintained by the aid of fire heat, and the flowers fertilised every morning when the pollen is dry, large clusters of fruit should result. A night temperature ranging from 55° to 60°, with a further increase of from 5° to 10° in the daytime, is ample for winter Tomatoes, air being given both night and day when the weather permits.

DISEASED TOMATOES UNDER GLASS.

Tomatoes are now fairly plentiful and cheap in the markets generally, but were it not for disease the present supply would be more than doubled. Apparently there are several forms of fungoid diseases overrunning Tomatoes in various parts of the country, and for none of them has an effective remedy been found. These diseases may be prevented or checked to a certain extent, but there is no cure—at any rate, I should be very glad to learn one. In this district alone there are three market growers who have failed badly with Tomatoes for the second season in succession, and in many private places the crops, from the same cause, are very poor. The Potato diseases (*Peronospora infestans* and *Fusarium Solani*) are principally destructive among open-air plants, and may usually be prevented under glass by the maintenance of a warm yet dry atmosphere, air being given freely whenever the weather permits. Strange to relate, the disease which proves so deadly to Tomatoes under glass, and which I believe to be a form of *Cladisporium*, makes but little progress among plants growing in the open air, heat and moisture combined being conditions most favourable to its spread. All the while infested plants under glass are given abundance of both top and bottom air to a certain extent the disease is stopped, but directly the houses are kept closer it quickly overruns the plants, the foliage being ruined in a few days. First the under side of the leaves becomes covered with large patches of thick mildew-like mould, next yellow spots of corresponding size are to be seen on the upper side, followed by a general spread all over the leaves. The older leaves are the first affected, and, unfortunately, the early removal of these does not save the later ones, the disease evidently being in the system, and the fruits are both small and few in number accordingly. I refer to this now more especially with the view of pointing out that it would be simply a waste of time and house room to depend upon plants raised from a diseased stock for producing fruit during the winter. Unless the start can be made with thoroughly clean plants, it is quite useless to attempt their culture. If disease once gains a footing, it is no easy matter to get rid of it, as it reappears even though no Tomatoes have been grown in the houses or the open air for a whole year. Experienced growers who have had the *Cladisporium* to contend with have recommenced with an apparently clean stock of plants, and in addition have put out these in a border of common loamy soil, trampled as hard as it can well be made, plenty of room being allowed, and a dry, airy atmosphere maintained as much as possible. Under this treatment the growth is of an exceptionally sturdy, fruitful character, and though not absolutely disease-resisting, it is very much less liable to succumb to it than the more soft, sappy growth incidental to more liberal culture. Should the disease appear, disbudding or the close removal of side shoots ought to cease, or the time will soon come when no sound leaves will be left. A portion of the side shoots ought therefore to be reserved, and either trained up the main stems or else all should be stopped at the second or third joint. In this manner the plants will be kept moderately well furnished with healthy young leaves, these having to do the work of the diseased older ones necessarily removed.

LATE KIDNEY BEANS.

Early frosts not unfrequently destroy the rows of runner and kidney Beans before September is past,

the consequence being a scarcity of choice vegetables at a time when a good variety is often needed. Those, therefore, who have a few heated pits at their disposal may well devote the whole or a portion of them to the culture of kidney Beans. Supposing the start is made now, a moderately good supply ought to be available towards the end of October, a succession being maintained either by sowing more seed in the pits or else in pots a fortnight or three weeks later on. If the pits are newly cleared of either Melons or Cucumbers, the beds being raised to within 18 inches of the glass, all that is necessary is to loosen, level, and well water the surface prior to sowing the seed in shallow drills drawn fully 15 inches apart. If there is no bed already made, it is advisable to utilise a mixture of old partially exhausted hotbed material and some fresh, well-prepared stable manure. The bed should be put together firmly, on this being placed a layer of about 10 inches of light, fairly rich loamy soil. *Ne Plus Ultra* is the best variety for either early or late sowing, and the newer the seed the stronger will be the plants. While the weather keeps warm the lights may be left off, but on the approach of cold, wet weather they ought to be in position, air being given during the warmest part of the day. If the plants are duly thinned to about 5 inches apart in the row, supported by Birch spray, watered as required, and given overhead syringings when the frame is closed after a hot day only, they will produce several good dishes of Beans. A little fire-heat turned on in cold weather will be of good service in prolonging the productiveness of the plants.

KIDNEY BEAN DWARF MANGETOUT.

Among the varieties tried here for the first time this season was one received from Messrs. Vilmorin, of Paris, designated *Nain Mangetout*. The seed somewhat resembles that of the *Ne Plus Ultra*, and so also does the habit of growth. It is quite as early as the last-named popular variety, the only difference being in the shape and thickness of the pods. Quite young pods are very thick and succulent, and there is no necessity to trim them beyond taking off their points and foot-stalks. There is really nearly double the substance in the pods than is the case with the ordinary varieties, and, on the whole, I consider it well worthy of general cultivation in this country.

LATE SOWN CARROTS.

If the seed in July has come up well it ought to be possible to draw tender young roots from a comparatively small bed throughout the winter. Any only just coming through the ground will scarcely have time to attain a serviceable size before wintry weather intervenes, but if covered in the autumn with a frame they will continue to grow, and eventually become useful. Where a continuous supply must be maintained it is necessary to sow seed now in frames set on a gentle hotbed, the French Forcing Horn being the best variety for the purpose. The seed may either be sown broadcast on a newly moistened surface and covered with fine soil, or in shallow drills drawn 6 inches apart and duly watered. A little additional protection will be needed during the winter.

W. I.

Peas for market.—In the interesting article by "J. C. B." in *THE GARDEN*, August 3 (p. 102), he says that *Kentish Invicta* is the variety of Pea selected by market growers for the earliest crops. As there is a large space of land devoted to Pea culture for market within a few miles of where I write, the produce of which is sent to Bristol and other large towns in the north, I have had many opportunities of seeing how they manage their crops, as well as of noting the behaviour of the sorts they grow. *Kentish Invicta* is only grown to a limited extent, as it is not found to bear so well as others. *Harrison's Eclipse* is the favourite sort, and more largely grown than any other. As a second early sort the west country growers confine themselves a good deal to an old variety bearing purple-coloured flowers, which is a great cropper and always meets with a ready sale. The yield of Peas when they are shelled is greater than any

other variety. No doubt the conditions under which the crops are grown influence the behaviour of the sorts. What may do well in one part of England may not do so well in another. At any rate, Pea culture for market is not losing its hold, as in favoured localities in the west almost fancy prices are paid for the land for the production of that single crop only. There is no reason to find fault with the men who conduct this business in the district from which I write. They are for the most part willing to try new sorts of Peas which the seedsmen's travellers bring under their notice from time to time, but they are sufficiently alive to their own interests only to do so on a small scale.—J. C. C., *Taunton*.

BROAD BEANS.

A REMARKABLE feature of the Broad Bean crop this season has been found in the comparative failure, through the attacks of black aphid (*Aphis fabæ*), of the earlier sowings, and the admirable crops, clean and good, produced by late sowings. No doubt very early sowings suffered a good deal, because the ground was so wet and cold in April and May so gloomy. Thus, from the first the plants came both thin and weak. These when attacked by the black fly, which settled upon them in places till the plants were literally black with the parasites, soon succumbed. Later sown breadths, whilst having to weather the heat which was experienced through June, benefited greatly through the heavy downpours of rain enjoyed during the middle of July, and wherever the fly was in evidence it was speedily washed completely away. Now we see these late sowings cropping remarkably well, very likely the example may prove to be an excellent argument for later sowing of Beans, but in districts where under the influence of hot sunshine the ground becomes hard and dry, late sown Broad Beans, as a rule, stand a poor chance of giving a decent crop. This year the unusually heavy rains and cool weather of July not only saved the plants, but cleansed them and enabled the breadths to produce excellent crops. Still it is very possible that we often sow seed too early, especially when as last year it was so badly ripened. If the present warmth continues there will be no difficulty in securing plenty of hard ripened seed presently, and half the battle in sowing is gained, but the season for sowing should depend very much upon the general condition of the seed at the sowing time. Large-seeded Beans such as the Broad Windsor are more difficult to harden than are those of Early Longpod. One of the worst on the whole perhaps is the *Seville* or *Leviathan*, because both pods and Beans are so succulent and need ample warmth to thoroughly harden the seed. Broad Beans are not much in favour as a market crop; indeed, with a wealth of Peas and Runners in the market all other vegetables of a coarsenature find little demand. If Broad Beans can be got into the market before the Peas become abundant, a fair price may be secured. It is therefore needful to sow early. The chief kind grown in fields is the *Harlington Windsor*, an assumed selection from the Broad Windsor, and which at first produced three large Beans in a pod, but the form is fugitive and uncertain in character, readily falling back to the twin-seeded pods. *Seville* and *Leviathan* pods are long enough to gratify the appetite of the most exacting of judges or exhibitors. Long pods especially, such as *Johnson's Wonderful*, usually give the best main crop in small gardens. *Beck's Gem* or the *Dwarf Fan Cluster* are admirable for those who prefer small Beans, but the market grower finds his chief demand in the large broad-podded *Windsors*, and if three Beans can be produced in the pods instead of the average pair the crop is greatly increased. I secured a capital three-seeded Broad Bean from out of the *Seville* a few years ago, and have been very hard roguing it, but it seems as if a long time would have to elapse ere it becomes fixed. It has, however, done better elsewhere this year than in our stiff cold soil, but at Chiswick the Broad Beans almost entirely failed owing to black fly. The product of the *Harlington* selection does not afford much encouragement, but

still a good deal may be accomplished in time by perseverance and hard selection. A. D.

Sowing Cabbage seed.—August is the great month for the sowing of Cabbage seed for the production of autumn and spring plants. In the neighbourhood of London the demand for plants of any good kinds of Cabbage is enormous, immense quantities being sold by the hundred and thousand. Not unfrequently a market grower who has been unfortunate with seed wants 10,000 plants to put out towards Michaelmas, but generally the bulk of the plants is bought up by persons who live by dealing in roots in the winter and spring, and by selling Broccoli, Savoy, Kale, and similar plants in the summer, and Cabbage plants in the autumn. Some of these dealers attend local markets, some go to the London market, some hawk from house to house; indeed, in every way Cabbage plants find a market, and the owner of a good piece of some standard variety can usually find a purchaser for the bed as they stand. Whilst all the strongest plants are run out rapidly in the autumn, the smaller ones are left over for the spring trading, and as because of so much loosening of the soil by hard pulling the roots have been disturbed, and perhaps the stems are too much exposed, these small ones are lifted and dibbled out thickly into fresh ground where the stems get greater protection, whilst the old bed area can be further utilised for other crops. The usual rule is to sow in drills a foot apart, and the American hand drill answers admirably for the purpose, as the seed is sown evenly, thinly, and at proper depths. The surface of the soil should in this case be well pulverised to enable the drill to work easily and regularly. Where a drill is not at hand a hoe may be usefully employed in drawing the drills. Shallow sowing being done with care, when drilling is adopted it is so very easy to keep the beds free from weeds.—A. D.

GARDEN FLORA.

PLATE 714. THE ILLICIUMS.

(WITH A COLOURED PLATE OF *I. FLORIDANUM*.)

THE genus *Illicium* is closely related to *Magnolia*. Five species are known, one being a native of America, the others of China, Japan, and India. Except in an economical sense the only species worth any notice is that of which a figure is here given, and which is, as the name denotes, a native of Florida. This plant appears to have been introduced into England among the first of the American plants, as it was in cultivation in England in 1770. John Ellis, whose letters to Linnaeus are full of interest for gardeners as well as botanists, was the first to obtain seeds of this *Illicium*, as is shown by the following extract from one of these letters, dated London, November, 1769:—

I send you enclosed some seeds of the *Illicium*, fresh gathered, which I believe will grow. I have sent the king (Kew) some, with a specimen of the plant. It is a different species, I think, from the Japanese *Illicium* (*I. anisatum*). I am in hopes it will bear frost, as they have smart frosts both in East and West Florida where it grows. Its smell is aromatic, not rank like the oriental species. They drink it with Cassia as tea in Florida.

It is interesting to note that Ellis also introduced *Venus's Fly-trap*, of which he sent a very good description to the Duchess of Norfolk, to whom also he sent seeds of the *Illicium*. In the *Botanical Magazine*, t. 439 (1799), there is a figure of this plant, and it is stated to thrive both in a stove and a greenhouse. Notwithstanding its early introduction, it has not, how-

* Drawn for THE GARDEN in the Royal Gardens, Kew, April 5, 1889, by H. G. Moon. Lithographed and printed by Guillaume Severeys.



ANISEED TREE *ILlicium floribundum*

ever, become at all known in English collections. That it is possessed of real beauty is shown by the plate, which was prepared from a plant grown in a warm greenhouse at Kew, where it was a great attraction for about six weeks. About a year ago Messrs. Veitch exhibited a plant of it in flower at one of the meetings of the Royal Horticultural Society, when it obtained a first-class certificate. It forms a compact shrub, with ovate, pointed, shining green leaves, which have a very agreeable aromatic odour when rubbed. The flowers are developed from the leaf-axils, and are clustered, drooping, not scented. Each flower is composed of about thirty twisted petals, which are coloured deep crimson, with a pretty pale coloured corona formed by the short stamens. The flowers are produced in early winter. Although this plant has been kept in fair health



Illicium floridanum, showing flowering branch and detached flower.

when planted in a very sheltered position against a wall out of doors, it does not flower freely nor look happy under such conditions. It really requires warm greenhouse treatment, shade from very bright sunlight, and plenty of water always. The soil we use is a mixture of peat and loam. Cuttings of the young wood, if placed under a bell-glass in pure sand will sometimes root, but layering is the best method for propagating this plant. It is said to be common in West Florida on the banks of the Mississippi, in moist shaded situations. Probably it would thrive in very sheltered positions out of doors in Cornwall.

I. anisatum and *I. religiosum*, both natives of Japan and China, are the source of the star anise of commerce. The carpels are arranged exactly in the form of a star, and these are imported largely to Europe, America, and India for flavouring liqueurs and drugs and other similar purposes. *I. religiosum* is held sacred by the Japanese, who employ its flowers in the making of wreaths, &c., for the graves of their friends, whilst the bark is used by the priests for making incense. In their native haunts this and *I. anisatum* are said to grow to the size of Cherry trees, but here they are small shrubs with Laurel-like leaves and greenish-yellow flowers. *I. anisatum* is hardy against a wall at Kew.

W.

Destroying wasps' nests.—Some wasps' nests are suspended on the trees, but the majority are in holes in the ground, and we have lately been destroy-

ing many there by emptying about a quart of paraffin oil into each and closing the hole up with soil immediately afterwards. The best time to perform this simple and efficient operation is when the wasps are all in late at night. I have not hitherto heard of this easy means of destroying the ground nests of these fruit pests being employed, but here not one of them has survived it, and we have destroyed many during the last three or four weeks.—J. MUIR, *Margam*.

FERNS.

W. H. GOWER.

CHOICE PELLÆAS.

THESE are beautiful plants, and of some few kinds I have received fronds from a reader of THE GARDEN who adopts the name as a *nom de plume*. As Pellæas are plants of great interest, a few words respecting them may not be out of place. In the late exhibition at the Temple Gardens I observed that the Messrs. Birkenhead, of Sale, had some rare species and varieties, and I believe that this firm possesses many forms of this genus. All the species are beautiful, many being suitable for Wardian cases, which I am pleased to observe are again becoming popular, for they are specially valuable for dwellers in towns, as in them can be grown many lovely mountain gems, which without these structures could not be done. Some of the kinds are also admirably adapted for small hanging baskets in the cool fernery. The genus contains many species, scattered over the Eastern and Western Hemispheres, but few of them assume large proportions, and therefore in planting them in a naturally arranged fernery it is well to bear this fact in mind, as to obtain the greatest effect from them they should be planted in prominent positions not above the level of vision. They should be planted in well-drained positions, and should not be overburdened with soil about their roots, neither should they be subjected to heavy drenchings from the syringe. The species from the Eastern Hemisphere are mostly warm house plants, whilst the majority from the West thrive best under cool, but not cold, house temperature. I know it has been said that as many of the species are North American they should be treated as hardy Ferns, but as most of these kinds are found about the States of New Mexico, Arizona, and California, something more than open-air treatment is necessary to their well-being. The same remarks apply with equal force when these plants are grown in pots, as when planted out the roots must not be surrounded with a superabundance of wet soil. Do not place them in large pots, as this, coupled with insufficient drainage, is sure to lead to their death. Again, some few species are deciduous; these require watering very carefully during winter, but by no means allow them to become quite dry, or evil results will follow. I well remember receiving a severe reprimand some years ago for keeping deciduous Ferns moist through the winter months, and asserting it was the correct thing to do. I would strongly urge those who are still not of the opinion that such is the case to put it to the test during the coming winter.

Subjoined is a brief notice of a few choice Pellæas well deserving cultivation from all those who have the convenience at command. They are out of the common run of kinds, and present an entirely different aspect to the majority of Ferns.

P. ANDROMEDA-FOLIA.—This is No. 1 of the fronds sent. Although "Pellæa" says the frond is of full size, it is only about 6 inches high; this may be as large as he has grown it, but in a state of Nature the fronds grow each from 1 foot to 18 inches long, with a breadth of 6 inches, and some-

what ovate in outline; they are two or three times divided, the segments being small and deep green. It comes from Southern California.

P. ASPERA is a very pretty plant, and one which much resembles a species from the East, but as I intend to confine these remarks to kinds from the West, the particular species (*P. involuta*) must be here omitted. The species here named is a small and dwarf grower. The fronds seldom attain a height of more than from 6 inches to 9 inches. The stems are black, furnished with numerous pale brown scales, the frond is about twice divided, the texture is leathery, and the segments are pale green, more or less furnished with short, whitish hairs. It comes from New Mexico.

P. BREWERI is the frond marked No. 2. It is a dwarf kind, seldom to be found larger than the specimen sent—6 inches. Its fronds are pinnate, bearing about half-a-dozen pairs of opposite pinnae. These are leathery in texture and pale green; the stem is wiry and bright reddish-brown. It comes from California.

P. BRIDGESI is another Californian plant (No. 3 of those sent by "Pellæa"), but it is very different from the previously named kind. It has bright brown stems, unfurnished with scales. The total length of the frond and stem sent is about 6 inches, but it will grow to about 9 inches or more in length. The fronds are only once divided; the pinnae are somewhat heart-shaped at the base, coriaceous in texture, and light green in colour.

P. DENSA.—This is No. 4, and it is an exceedingly beautiful plant, which grows in dense tufts, with bright brown, slender stems, which, together with the leafy part of the frond, reach to the height of about 6 inches. The fronds are somewhat deltoid in outline and three times divided, the segments being narrow, slender, pointed at the ends, and deep green. It comes from California.

P. ORNITHOPUS (No. 5) is a lovely plant, but it is one of the deciduous species, losing its fronds during the winter months. The fronds attain a height of from 9 inches to a foot, or even more; they are twice divided. The pinnae are wide apart and glaucous, and of leathery texture. It comes from California.

P. PULCHRELLA.—This is a pretty tripinnate species from New Mexico, and No. 6 of the collection before me. It seldom grows more than about 6 inches in height, the stems being polished and reddish-brown; the segments are small, leathery in texture, and green on both sides.

This by no means exhausts the pretty kinds included in this genus, but it does those kinds sent me by "Pellæa," and I hope to see them growing more frequently in collections of choice Ferns.

Fern spores.—Early in the autumn is the best time to collect fertile fronds for the spores, as fronds which have developed during the summer while the fernery is not kept quite so close are much more likely to contain perfectly matured spores than those from the early spring growth. Unless they are looked after at this season it not unfrequently happens that at the time when spores germinate best, *i.e.*, early in the spring, fertile fronds cannot be found. It requires some care and judgment to ensure success in obtaining the fronds just at the proper time. Some of the species shed their spores very soon after they are matured, and unless they are taken at the proper time the best spores will be lost. In most cases the best time is as soon as the spore cases show the first sign of bursting. The greatest care that can be taken will not prevent the different species getting mixed together to some extent, but keep each isolated as much as possible. Where this cannot be done, the surface of the fronds should be carefully brushed over with a soft brush; this will remove any foreign spores that may have settled on them. Among the Ferns which are especially troublesome as weeds are *Nephrodium molle*, *Gymnogramma Martensi*, and several of the common *Pterises*. As these germinate more quickly than most species, they often overgrow the surface of the pots and

destroy or prevent the choicer sorts making a start. When collecting the spores no two sorts should be brought in contact with each other; even the paper which is to be used for wrapping the fronds up in should be kept away from where the fronds are taken. It is also very important that in cleaning the spores only one sort be done at a time, or at least in the same place. I have often been puzzled to account for certain sorts making their appearance among others in the seed pots, especially when those that have come up as weeds have not been growing in the same house as the sort from which the spores were saved. I have known this to occur in several instances. However, as I have previously said, these evils may be avoided to some extent by using great care in selecting and preparing the spores. One other cause of spores getting mixed should be guarded against—that is insects. If a number of packets are kept together where creeping insects abound, the insects will travel from one to the other and thus carry spores with them.—F. H.

Ferns for a case in a north window (Marian).—The following kinds will give you variety of foliage, but do not trouble about a heating apparatus, as it will cause more harm than it can do good: *Adiantum Capillus-veneris*, *A. formosum*, *Anemidictyon Phyllitidis*, *Blechnum occidentale*, *Davallia canariensis*, *Doodia lunulata*, *Litobrochia vespertilionis*, *Lomaria Patersoni*, *Onychium japonicum*, *Pteris cretica* Mayi, *P. serrulata cristata*, *Todea superba*. The surface should be diversified, drain well, and do not use too great an amount of soil. Means should be adopted for draining off superfluous water.—W. H. G.

Nephrolepis Bausei.—In the note on propagating the different kinds of *Nephrolepis* on page 30, no mention is made of a mode of increase available for some of them, and notably for *N. Bausei*, a very distinct and handsome kind, the fronds of which are of a bipinnate character. This *Nephrolepis* is quite deciduous; in fact the old plant frequently dies, leaving several small tubers, which, placed under conditions favourable to growth, will in the spring push forth fronds quickly, and if shifted on when required form good specimens before winter. I once saw several plants of this handsome Fern thrown away, thinking they were quite dead, but a more minute inspection of the soil revealed the fact that there were a number of these tubers, many no larger than peas, all of which grew readily and increased the stock considerably. It is certainly the easiest method of increasing this particular *Nephrolepis*.—T.

ORCHIDS.

W. H. GOWER.

CATTLEYA LODDIGESI.

THE species in question is one of the old Orchids in English gardens and, indeed, was in cultivation long before the genus *Cattleya* was established by Lindley. It was then known under the name of *Epidendrum violaceum*, and I suppose it is on account of its antiquity that it has been neglected by modern growers. Some ten or twelve years ago it was largely grown by the Messrs. Rollisson, of Tooting, with whom the plant was a great favourite. They imported it largely from time to time, and many fine forms of this species were obtained. I believe to this firm is due the credit of its being at the present time a popular plant in this family of large-flowered and highly coloured species, and which of late years have so increased in numbers that at the present time we can boast that no month in the year can be found without its *Cattleya* blooms. The plant in question is amongst the smaller flowered kinds, and it varies considerably in colour, but not much in size. The flowers are borne four or five together and usually measure each 4 inches across, large

forms reaching to 5 inches. They appear during the months of August and September and in the typical plant the sepals and petals are rosy lilac; the lip is outside of a similar colour, the front lobe white, tinged with yellow, with a purplish margin, where it is crispate. The whole flower is thick and fleshy in substance, and lasts a long time in perfection. A pure white form which I have seen in The Woodlands collection, at Streatham, under the name of *candida*, is one of the most chaste-flowered of white *Cattleyas* at the present time. It differs only in colour, which is pure white, with a tinge of yellow on the disc of the lip, this latter colour being advantageous to it in my opinion. There are few white Orchids without this addition of yellow, in a more or less quantity, and I always feel that pure white Orchid flowers have a dead appearance. There appears to be something wanting. Even in the most beautiful of pure white forms (*Ceologyne cristata alba*) this feeling is always present. Another form of the plant in question bears the name of *maculata*, the sepals and petals of which are freely dotted with dull purple. The most admired of the coloured forms is *violacea*, the sepals and petals of which are of a rich rosy purple. The outside of the lateral lobes of the lip is of the same richly coloured hue, the front lobe being white, the edges beautifully crisp, the disc bearing a broad streak of deep rich yellow. This form, when well established, will bloom in the spring months, and again in autumn, which is a material advantage. Another form which I have now before me, from Dunedin, the residence of Mr. Sherwood, at Tulse Hill, resembles the before mentioned very much. This flower is of an intense violet-purple throughout, saving the yellow disc of the lip, and is by far the most beautiful form of the species which I have ever seen. The last two varieties referred to would by some be called forms of *Harrisonia*, which is a name bestowed on a plant years ago by Bateman, but which, with the means of comparison which we now have at hand, I think he would hesitate to bestow, as he would find it difficult to sever it from the older plant, which bears the name of the most celebrated nurseryman and large grower of plants in the olden times. The last recognised plant from the world-famed nurseries at Hackney passed away in the fire which so crippled the appearance of our Palace of Glass at Sydenham.

The species in question is a native of Southern Brazil, and has a wide range of growth, and as it is found in all kinds of situations, it is a plant which may be expected to vary considerably, and if grown in our gardens in larger quantities this would become more plainly visible. The importations of the late Messrs. Rollisson, of Tooting, which came from the Organ Mountain district, alone produced many fine and distinct varieties, and it was from about the same region, I believe, that it was first imported by the Messrs. Loddiges now nearly seventy-five years ago. From whatever part it may come, however, I have always found it to thrive best at the cool end of the *Cattleya* house, that is to say, in a temperature which seldom falls below 60° during the winter months. It requires thorough drainage, and the usual treatment accorded to other Brazilian species of the same genus, but it requires attention through the winter months, because in the plants which flower late in autumn new growth has to be perfected, and therefore if the plants become starved through the winter months the growth is finished in a premature and weak condition, and not only does not produce flowers in the spring months, but is not of sufficient strength to send forth strong growth in the summer for

autumn flowering. To young beginners in Orchid culture it may be well to point out that many *Cattleyas* and *Laelias* require attention in this matter, as numbers of *L. purpurata* and others finish up their growths during the winter months, when it used to be considered all ought to be at rest. *C. Loddigesii* and its varieties should be potted in a mixture of chopped Sphagnum Moss, some nodules of charcoal, and good peat fibre from which all the fine particles have been beaten. The plants should be potted firmly, and water supplied to the roots in a moderate quantity. More *Cattleyas* are destroyed by a superabundance of water than perhaps any other Orchid. It enjoys a full supply of light, but not full exposure to the sun.

PHALÆNOPSIS MARIE.

In reference to this plant I should like to say that it is one of the hardiest of all the known species of *Phalænopsis*. I found it on a mountain nearly 2000 feet in height, between Borneo and the Philippine group, and out of four plants as originally discovered three came home alive. This plant has been on several occasions compared to *P. sumatrana*, a plant found in Sumatra and on the Palembang River near the sea level, in Borneo. There may be a superficial resemblance, but their constitutional vigour is very different. *P. sumatrana* is a notoriously delicate species. Of the thousands collected not a tithe—not a third, I may say ever reach Europe alive; and when they do arrive living, it is by no means easy to grow and flower the plant year by year. *P. Marie*, on the other hand, is a good grower and flowers every season with quite commendable constancy. The smallest plants will bloom. I shall never forget the day I found this species. Weary, footsore, and parched with thirst, high up on an old volcanic range I stopped to rest, and looked around on the withered leaves and desolation wrought by five months of continual drought under a tropical sun. To find Orchids in such an arid district seemed a forlorn hope, but I determined to reach the old crater, now extinct, on the topmost peak, and so pushed on again once more. I had barely started when a fallen branch half as thick as my body blocked the way, and there nestling on a smaller branch—let as thick as my arm was this dainty little Moth Orchid, its leaves hanging parched and limp, while its branching flower-spikes bore altogether over thirty white and ruby-tinted flowers! I felt quite dazed at this sudden apparition, and for the moment could scarcely believe my own eyes. But there it was before me, in all its unknown beauty, and I felt humbled for my despondency and want of faith of but a moment or two before. The branch was carefully cut off on each side the plant, which firmly adhered to the wood by its strong thong-like roots. I carefully carried it for miles, partly on foot, partly in the saddle, and the branch with its precious burden scarcely ever left my cabin on the return voyage home.

For days and days I tried to find the plant again, but failed, as also did the natives of the region, who assured me that they had never seen a flower quite like it before. The plant was again discovered, however, and Messrs. Low introduced a few more plants of it, but I am confident many thousands must have perished in the forest fires that I saw raging in its habitat during what I was told was the driest season within the memory of man. The highest plants on the mountain had alone escaped.

The late Prof. Reichenbach used to call it *P. sumatrana* var. *Marie*, but my own opinion is that it is totally distinct in vigour, constitution, hardihood, and in leaf-aspect and

structure from *P. sumatrana*. Be this as it may, *P. Marie* is a dainty, free-growing, and constant-blooming little plant. F. W. BURBIDGE.

SHORT NOTES.—ORCHIDS.

Masdevallia demissa.—This rare species is now flowering with Mr. Hall, of Tulse Hill, and though not a very showy kind, it is an exceedingly pretty flower. The ground colour is reddish brown, the tails of the sepals being yellow.

Lælia xanthina.—This is a rare, but distinct Brazilian species, the flowers between 3 inches and 4 inches across, sepals and petals deep buff-yellow, and with the edges rolled back. The front of the lip is white, marked with lines of magenta. It is in flower at Kew.

Cattleya Sanderiana is now flowering in many collections and in various forms, but all are extremely showy and very beautiful. A very fine variety is flowering in Mr. Sherwood's garden, Danedin, Tulse Hill, and another in Mr. Hall's garden at the same place; the former plant is very large and the flowers are very rich in colour. It appears to be a superior and free-flowering form of *C. gigas*, which should be grown by everyone who loves Cattleyas.

Cypripediums.—In this large family there are always to be found some rare beauties in bloom. Two of these are now flowering in Mr. Measures' collection at Camberwell. The first, *C. Morganæ*, of which a coloured plate was given in THE GARDEN (Vol. XXIII, p. 58), is now bearing a three-flowered scape; the blooms are large and exquisitely marked. It is a Veitchian hybrid, and, in my opinion, the finest of its race. The other is a unique form of *C. callosum*, called *giganteum*. It does not, however, strike me as being of remarkable size, but the markings are very distinct from those of the type, the large, broad dorsal sepal being white suffused with emerald green, and streaked with lines of a deeper green, and destitute of any other colour. It is a beautiful form. Both plants require the warmest house.

ROSE GARDEN.

PINK-COLOURED ROSES.

PINK is a colour everyone appreciates, and we have this refined and charming tint in its fulness in the Rose, whether it is the Hybrid Perpetual, the delicate Tea-scented variety, or the Noisette that clambers over pillar, chain, and post. This section presents a contrast besides colour to the group described in THE GARDEN (p. 45), and that is in the abundance of good types at command. There are many good pink Roses, and our thoughts naturally revert to La France as typical of this colour. But while there is an abundance of old kinds, there are several new varieties which deserve our notice, and in this category Mrs. John Laing stands in the first rank. It is a hardy, vigorous and constant variety, the flowers soft pink in colour, full, handsome, finely shaped and with the desirable quality of sweet fragrance. Such a Rose combining so many valuable traits is a great addition to the list, and its rapid rise in favour is a guarantee of its genuineness. For this bold type we are indebted to Mr. Bennett, of Shepperton, the raiser of so many good varieties, and it is a seedling from François Michelin. We may liken it to Mons. Noman in colour; and though this is not uncommon, it is clear and beautiful as seen in Mrs. John Laing. I have seen it in several nurseries this season, and it does everywhere, flowering freely and continuously. It was shown splendidly in several stands at the Crystal Palace Show, and the flowers stood the insufferable heat the best almost of any. It is one of the Hybrid Perpetuals that should be planted this autumn by

those who have not already tried it. Another Rose not less valuable is *Pride of Waltham*, and well named. It was the pride of Messrs. Wm. Paul and Son's nurseries in the month of July, when it was giving a welcome supply of its large finely coloured flowers. Its constitution and habit are both good, in the latter respect bearing an affinity to Countess of Oxford. The flowers are not unduly large, but are above medium size, and of a delicate shade of pink that is brighter in the centre of the well-formed flower. It has succeeded remarkably well this year, and the admirable flowers of it shown at the exhibitions should tend greatly to increase its cultivation. There is another Rose that may be singled out as one likely to be added to the list of generally cultivated Roses, and that is Messrs. Wm. Paul's *Duchess of Albany*, a variety that has had many recommendations in THE GARDEN. It is a sport from La France, and has inherited all the good points of this famous Rose, but differs from it particularly in colour, which is deeper, more uniform, and suffuses the whole of the flower with but little shading into a paler tint. Its flowers, besides their difference in colour from those of La France, are also larger and of fuller form, without losing a trace of the fresh perfume of the type. The growth is exceptionally vigorous as I have seen it, constitution good, and the flowers thrown up in great abundance, even in such a hot year as 1887, when the fierce and prolonged sunshine allowed the Roses but a short season. Although so free in bloom, it is an exhibition as well as a garden Rose, if we may judge from the good flowers to be seen constantly at the shows. *Queen of Queens* has a proud name, but it deserves the title. It is a vigorous Hybrid Perpetual, excellent for garden and exhibition, and every one of the strong shoots is crowned with a flower. This is of a rich pink colour, shading to blush at the edges of the firm bold petals, and the form is full and handsome without that irregularity and coarseness so conspicuous a fault in Roses of large size. Just as meritorious is *Silver Queen*, another of Messrs. Wm. Paul's acquisitions, and of which I have heard from growers good accounts. It is not so pink as many of the other varieties described in this notice, but sufficiently so to be classed amongst pink-coloured Roses. The flowers are silvery blush, the centre pink, and the form of the flower is both large and full. As in the case of *Duchess of Albany*, it blooms freely and also in the autumn, thus having an additional value. It is unnecessary to describe such a Rose as *Mme. G. Luizet*, which every grower of Roses values the most highly perhaps of pink-coloured varieties. It is of the *Jules Margottin* type, and one of *Liabaud's* gains of 1878. It is not only of the most delicate pink, but has a sweet scent. Brighter in colour is *Mme. Eugène Fremy*, a full, bold flower, the plant vigorous in growth, as is *Lyonnaise*, a beautiful pink-coloured Rose of globular form. *Duchess of Leeds*, as far as I have seen it, seems a good garden Rose, with somewhat the colour of La France, but my acquaintance with it is very slight; perhaps, however, other readers can give information respecting this new Hybrid Perpetual Rose. *Duchess of Edinburgh* bears well-shaped flowers, the colour delicate pink in the outer petals, but deepening to a richer, fuller tint in the centre of the flower. *Diana*, one of Messrs. Wm. Paul's acquisitions, bears cup-shaped blooms of a clear rich pink, large, and very full, besides which qualifications we have hardiness, vigorous constitution, and a perpetual character, three essentials in a good Rose, besides those of mere colour and shape of flower. Garden Fa-

vorite (William Paul and Son), as its name denotes, is a garden Rose; it is vigorous in habit and very free, producing an abundance of bright pink flowers that have the requisite substance for long-lasting. The vigorous *Captain Christy*, *Centifolia rosea*, *Baroness Rothschild*, *Thérèse Levet*, and *Magna Charta* are Roses that may be described as pink, and each is well known, too much so to require detailed description. The last of this five is one of the largest of all Roses, and another of Messrs. William Paul and Son's introductions. It is very free considering the large size and fulness of the flowers. A very sweetly scented and finely cup-shaped pink Rose is *Comtesse de Chabillant*; and *Princess Beatrice* has several desirable characteristics, as the growth is vigorous, the colour deep pink shading to blush, and the form globular. I saw this in the Waltham Cross Nursery flowering freely recently, and from the plants there formed a good opinion of it. A variety that has flowers of a self colour is *Queen Eleanor*, and this also was good in the same nursery this season. The flowers are quite pink, large, of good form, full, and sweetly scented. It is a Rose that should, judging from its appearance there, become a favourite.

The foregoing are a few good types of what may be called true pink-coloured Hybrid Perpetual Roses. We could of course range further, as in the Tea-scented section there are many varieties in which this colour is richly represented, and occasionally charmingly mingled and associated with other shades. C.

ROSE NOTES.

ALTHOUGH the first show of Roses in the garden was of brief duration owing to the heat and drought, it is satisfactory to know that on the whole the flowers so far have been very good. This year has been remarkable for the manner in which some of the varieties of Hybrid Perpetuals have developed their earliest flowers. It is not desirable that Roses should be too large, for there is nothing very refined or pleasing in abnormally large Roses, as were to be met with this season in such varieties as *Her Majesty*, *Magna Charta*, *Comtesse de Nassau*, *Mme. Catherine Soupert*, *Anna de Diesbach*, *Auguste Rigotard*, *Annie Laxton*, and *Mme. Marie Finger*. A reduction in size and an improvement in form are, in my opinion, more desirable characters. At the same time we have no choice in the matter. Climatic conditions must bear the blame if in this instance the blooms were too large to be pleasing. Before the first crop of flowers had faded mildew attacked the plants rather seriously. It seemed to settle upon the plants as if the disease was brought from a distant locality, for all alike are affected, regardless of soil or situation. It is so bad in some cases that I fear the young growth, which just before the attack was in the most satisfactory condition, will be injured unless the fungus is destroyed. It is impossible in some cases where the roots of the Rose trees are badly nourished for the plants to grow out of it, so that unless the enemy is destroyed the crop of autumn Roses will be a poor one. Not the least remarkable character of the present season is the freedom with which climbing Roses have flowered and have made their growth since. *Maréchal Niel* has been in grand form and colour on south aspects in the open air, but the once favourite *Lamarque* has been the most conspicuous. It has produced a great number of large clusters that under a bright sun have almost faded to a pearly whiteness. The climate of the west of England evidently suits this Rose, as not far from where I write a single plant covers half of the front wall of a fairly large house. The variety *W. A. Richardson* has also behaved remarkably well. In a good soil and warm position it grows freely and flowers as well as one could wish. I have been a good deal interested lately in the behaviour of some strong growing Hybrid Perpetuals that were planted out

of pots last September for training round pillars. Knowing the ground to be rather poor, I commenced early in the spring to water them with sewage water whenever they were dry. The roots frequently had a good soaking twice a week during the late hot and dry weather. As I write in the first week in August, such sorts as Bessie Johnson, Victor Verdier, Mme. Nachary, Jules Margottin have made shoots nearly 6 feet long, and even Her Majesty promises to make a start from the wood that has flowered this season, which I have not known it to do before. The stimulating liquid has evidently had an effect on its behaviour in that respect. J. C. C.

AMONG THE BRIERS—AFTER BUDDING.

WHAT may be called post-budding culture is often greatly neglected, though it is of the greatest importance to the future health and full and free development of the Roses. So soon as the buds have taken, vital questions arise as to the future relations of the Brier towards them. Most rosarians agree that a growing Brier ahead of the Rose buds is a most potent force in securing a perfect union between the two. But from this point the opinions and practice of rosarians vary widely. Some even question the necessity or potency of a growing Brier shoot as a means of ensuring a speedy and perfect union. Bringing their practice into harmony with their theories, such rosarians stop their Brier shoots a week or two before budding. It has also been found that buds take with tolerable freedom on such stopped Brier shoots. In fact, the non-stopping of Brier shoots has been generally accepted in the future interest rather than in the effecting of the mere union of the bud with the Brier.

This brings us back to the distribution of force between the Rose buds and their wilding foster parents and the time when the whole of the strength of the latter shall be diverted into the former. Were it not for the vicissitudes of our climate this diversion of force could hardly take place too soon. But chiefly owing to the latter and the weather losses among our newly budded Roses it can hardly be effected too late, for the time of breaking the Rose buds lies at the very core of the post-budding culture of Briers. If these are to be rushed into breaking so soon as they have formed a union with the Briers, the sooner the Brier shoots are stopped back within a leaf or so of the bud the better. Some stop the Briers right up to the buds, and at the same time cut off any and all other outlets to the sap. This of necessity concentrates all the growing force of the Brier into the Rose bud, and, consequently, forces it to form a shoot or bloom in as short a time as possible. The time will be further shortened if the Brier shoots were shortened before budding. If this express mode of forcing buds into shootlets is adopted, the earlier we bud and the sooner all Brier is removed after the union of the two the better; for, as our climate goes it needs every day from June or July to November to force our buds into shoot-blossom and maturity of wood before the frost is down upon them, often with killing severity.

It is this risk of killing, or, in other words, the alarming mortality among budded Roses that has suggested and enforced a very different course of treatment after budding. This consists in what may be termed the sleeping or resting system for the newly inserted buds that results in keeping most of them dormant until the following spring. This culture of dormant buds, at first adopted for their greater safety, was found to have other advantages. It had two collateral advantages—these buds produced the finest blooms for show, and they also broke into the most vigorous shoots. In other words, the most perfect Rose blooms and the strongest Rose bushes sprang out of dormant buds. The discovery of these facts necessarily gave a powerful stimulus to this mode of culture, until it has almost superseded the more speedy if less safe mode of concentrating the entire growing force of the Brier into the bud so soon as the union between the two is completed. The habits

of the Roses themselves run them into every imaginable variety of growth between these two general methods of forcing and repression. Some Roses almost instinctively burst into growth so soon as the buds have taken; others refuse to start till late in the autumn or spring, be our culture what it may. But our efforts should be directed either to an early start into growth or an entire rest till next spring; and either of these results is in the power of the rosarian who cuts in his Briers early or leaves them almost full length till the winter or following spring. D. T. F.

OWN-ROOT ROSES.

RECENTLY a correspondent in THE GARDEN complained of the difficulty of obtaining Roses upon their own roots. I do not doubt the truth of that statement, as a large grower of Roses for sale told me that he could not raise them in sufficient quantities to meet the demand. The best way, therefore, for those to pursue who want own-root Roses is to set about raising the plants themselves. The present time is the best in the whole year to begin to do so. The principal reasons why the month of August is the best is because the growth is then in just the right condition to make roots quickly, and because there is a decided gain in time when the plants are rooted and placed in single pots before winter. The gain in time almost amounts to one season, because cuttings that are put in in the autumn require to be left undisturbed until the following autumn, as I have found in practice that when late-struck plants are disturbed before that time, that as many or more losses occur in moving them as take place during the process of rooting. In every case when a gentle bottom-heat is available it should be utilised, as it hastens the formation of roots. Bottom-heat, however, is by no means indispensable, as I have propagated hundreds of plants in the months of August and September with no other assistance than solar heat and a bed of soil made up in a cold frame. The chief points in the management that require particular attention are to have the frame and the pots ready to receive them before a cutting is taken, and as soon as they are made and inserted to moisten the soil in the pots thoroughly, and then plunge them to their rims in the bed of earth. Propagators of Roses in this way differ in the number of cuttings they put into a pot, the general rule being to put six or seven into a pot 5 inches in diameter, but I have been most successful when I have put a single cutting into a 3-inch pot. That the single pot for each cutting is the best will be readily understood when I say that it enables the operator to shift it into a larger pot without disturbing the roots. Owing to the roots not being disturbed, the plants quickly become established in the larger pots, and if kept in a cold frame or other cool structure out of the reach of frost they continue to make roots all the winter. My practice has been to get the plants shifted on not later than the middle of October, and to stand them on the floor of a cool Peach house during the winter. Under this treatment plants can be had that have made growth 1 foot or more in length and that have filled 5-inch pots full of roots by the end of April. These plants, if hardened off, may be planted out at the end of May where they are to flower. There may perhaps be a little more labour in the plan which I have adopted so successfully, but the gain in time more than counterbalances for the extra labour. I am not sure but that all the advantages are in favour of the plan of putting each cutting into a single pot. That process may, however, be too troublesome for some people; if so, they may put several cuttings into a pot, and as soon as they are rooted pot them off in the usual way. They will, however, require to handle them very carefully or serious losses will occur. The treatment of the cuttings before they are rooted is simply careful attention to an ordinary routine. For the first three weeks the frame must be heavily shaded in bright weather. Partial darkness is in fact far better than too much light; no air should be given for the first fortnight, and a wedge of wood a quarter of an inch thick placed

under the back of the light will be all that is required for another fortnight; after that more air may be admitted. Dry soil in the pots for any length of time will be fatal to the rooting of the cuttings; once they are allowed to seriously flag for want of moisture they will take a long time to recover, if they do so at all.

In practice I have found that if the taking of the cuttings is delayed until August and there is no bottom-heat available, that it is better to wait a month longer and then plant them in a sheltered border in the open air with an east aspect, or, better still, devote a frame to them where the plants can remain until the autumn. The lights and the frame, too, may be removed in the month of May. In either case the plants should not be disturbed until autumn. J. C. C.

TREES AND SHRUBS.

VARIEGATED TREES IN GARDEN SCENERY.

No one, I think, would question the value of variegated or golden-leaved trees when intelligently employed in producing pleasing effects in garden and park landscapes or any scenery of artificial creation. Their power of relieving the monotonous greenery that prevails among trees throughout the summer is recognised by all, and therefore the chief object in planting variegated deciduous trees should be to render garden and park scenery more interesting and cheerful. If you ask a landscape painter why he prefers to paint an autumn or winter landscape to that of summer or spring, he will probably tell you that in summer the monotonous greens that prevail everywhere in natural scenery among trees are without character and rarely suitable for painting. In spring, when less critical people are charmed by the bursting bud and unfolding leaf suggestive of new life and vigour, the painter will say that Nature's colouring is crude, and to him a spring scene is insipid. He waits till autumn, when the greens break into a multitude of rich and mellow tints—here a Sycamore a mountain of cloudy gold, there a Thorn, Cherry, or Cornel radiant in scarlet, red, and purple, while between these extremes the whole gamut of subtle tints is displayed and brought out in strong relief against the verdure of the trees that do not change their leaf colour at the fall. Such is the scene that the painter delights in, and in a mild way, with the rich material we now have, we can produce throughout the summer the striking effects that charm the artistic soul in the season of decay.

The effect of planting trees and shrubs with strongly pronounced foliage tints may be good or bad, according to the way these strong colours are grouped and distributed in garden scenery. Generally the result is bad, either because the variegation is too abundant, producing a spotty effect, or because the trees have been grouped in a careless way in respect of colour. Rather, I should say, too much care is taken to produce striking contrast, for how often do we see a Purple Beech grouped with a Silver Maple in order to get a contrast. Contrast it certainly is, but one that is too harsh to be pleasing—the one quite neutralises the effect of the other. Golden Elders and Purple Hazels is another favourite mixture, but how seldom is the effect produced pleasing. This injudicious grouping of colour, however, is far less objectionable than the commoner error of dotting the whole place at regular intervals with white and yellow patches, which is far too prevalent in small suburban gardens and in not a few large ones planted in accordance with the nurserymen's recipe. I venture to assert that nine out of every

ten gardens about London planted within the last twenty years by nurserymen exhibit the glaring fault of too many variegated and golden trees, and too few of those that are really beautiful either in flower, leaf, or growth. One can tolerate a nurseryman's specimen border however common-place and tasteless the arrangement may be. He has trees to sell, and he naturally aims at displaying them to the best advantage, but when he attempts to plant a private garden the case is different, though it is seldom thought to be. I could point to several prominent large gardens about London that

golden trees and shrubs that are now to be seen in the nurseries, I should have to make out a very long list, but I hold that there is but a comparatively small number of kinds that are of real value to the landscape gardener. The nurserymen are always eager to seize upon a sport of variegation, but not equally wise in discriminating that which is really ornamental. The result of this is that we have numbers of so-called variegated and golden trees and shrubs that are anything but ornamental, always wearing a sickly look. A list of choice deciduous kinds should include the variegated Sycamore

concordia), variegated Turkey Oak (*Q. Cerris variegata*), Golden Acacia (*Robinia Pseudacacia aurea*), Golden Elder, Golden Spiræa (*S. opulifolia aurea*), Golden Snowberry (*Symphoricarpos racemosus variegatus*), Golden Elms (*Ulmus Dampieri aurea* and *U. Rooseelsi aurea*), Silver Elms (*U. campestris variegata* and *U. glabra variegata*), Golden Weigela (*W. Looymansi aurea*). Among purple-leaved trees and shrubs there are numerous beautiful kinds. Besides the Purple or Copper Beech, the Purple Sycamore, Purple Birch, there is the newer Purple Cherry Plum, so effective if properly placed, and among shrubs there are the Purple Barberry, quite indispensable to a picturesque shrubbery, and the Purple Hazel. What charming effects one can produce with these in combination with the beautiful *Elæagnuses*, *Shepherdias*, silvery *Poplars* and the like, not to mention the delicate greens and dark greens which abound now among ornamental trees, evergreen and deciduous.

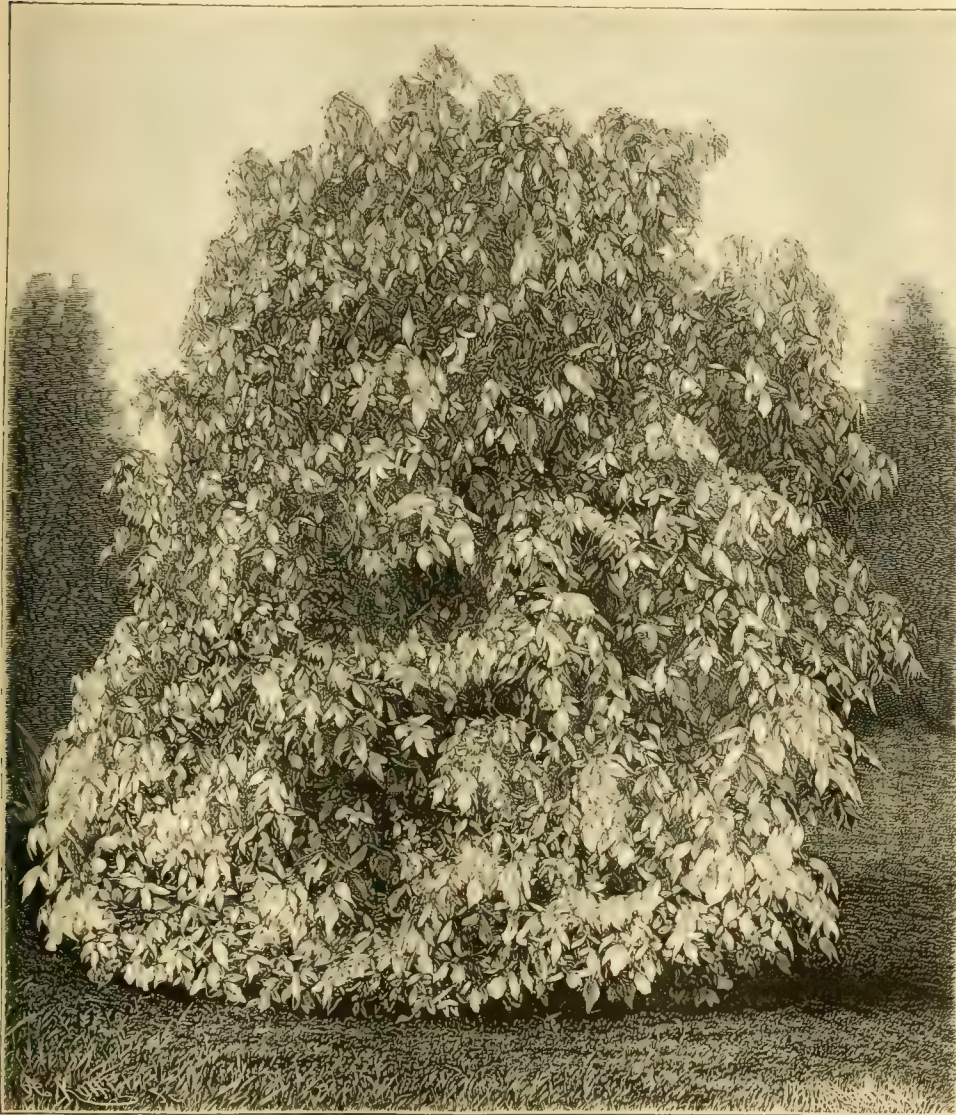
The plants are from a nursery list under the names by which they are known best, and I think it includes all the finest of the common kinds, and they afford abundant material for planting for ornamental effect. How to distribute and group this colour cannot be told in writing. The experienced eye of a tasteful planter, and that alone, will be the guide. He will aim at producing distinct and decided effects in relation to the surroundings; he will avoid dotting the plants about in a haphazard way; he will blend his greens, golds, silvers, and purples in such a way that one colour will not destroy the effect of the other; and he will aim at a scene on a small scale imitative of that which Nature does in autumn when strong and rich tints of varied shade prevail in every wood.

W. GOLDRING.

Double-flowered Spanish Broom.—As far as my experience of this goes it is very inferior to the common form, and if grown at all it can only be regarded as a curiosity. The flowers, though undoubtedly double, are borne but sparingly, and many fail to open in a satisfactory manner. On the other hand, the ordinary Spanish Broom is one of our most beautiful shrubs just now, for the rich golden blossoms are very conspicuous, especially when the long flexible shoots are overtopping a mass of deep-tinted foliage.—T.

Vaccinium rugosum.—This is a very pretty free-flowering shrub that succeeds well in a greenhouse; indeed, the treatment given to *Rhododendrons* of the Himalayan section will suit it perfectly. It forms a somewhat sparsely branched upright-habited bush, clothed with lanceolate leaves of a rough harsh texture and dark green in colour, while the flowers which are produced from the old wood are pendent, of an elongated five-angled urn shape, while their ground colour is yellowish, marked transversely with zig-zag lines of reddish brown, the calyx being entirely of that hue. The individual blooms remain fresh for a considerable time, and a succession is also kept up which carries the blooming season over many months. The latest name for this *Vaccinium* is *Pentapterygium rugosum*.—H. P.

The Clammy Locust (*Robinia viscosa*).—Peeping out here and there from amongst the small growing trees and shrubs on the lawns at Holwood are some pretty examples of this handsome and showy Acacia. It well deserves to be commonly cultivated, as it is during June and July one of the richest tinted and most conspicuous of the many rare trees and shrubs that adorn the Holwood grounds. Being of later introduction than the better-known False Acacia (*R. Pseudacacia*), one could hardly expect that the Clammy Locust would yet be very widely dispersed throughout the parks and woods of this country, but as its ornamental qualities become better known, I venture to predict



The Silver Maple (*Acer Negundo variegatum*), illustrating the effect of an isolated specimen on a lawn in contrast to its common aspect in a crowded shrubbery.

reflect the nursery specimen border, some where a sallowness is cast over the place by the superfluity of the beautiful, but much abused Golden Yew; others having the effect of a laundry-ground from the abundance of Silver Maples, and not a few where ornamental Conifers—those destroyers of beautiful gardens when used in excess—have been planted at regulation intervals of a few feet, just as a nursery border is set out with young trees that are constantly transplanted.

Were I to enumerate all the variegated and

and the variety Leopoldi, the variegated Negundo (*Acer Negundo variegatum*—a fine specimen of which is here represented), Worley's Maple, with pale bronze-yellow foliage; Golden Catalpa, Golden Sweet Chestnut, variegated Dogwood (*Cornus alba variegata*), Spath's Siberian Dogwood (*C. sibirica* Spathi), Golden Ash (*Fraxinus excelsior aurea*), Golden Oval-leaved Privet (*Ligustrum ovalifolium aureum*), Golden Mock Orange (*Philadelphus coronarius aureus*), Golden Canadian Poplar (*Populus canadensis aurea*), Golden Oak (*Quercus Robur*

that it will be a much-sought-after tree. In the grounds here there is an informal line of *Acacias*, which include the present species *R. Pseudacacia* and the less known, but very desirable *R. Pseudacacia Bessoniana*. How well these look when in full bloom. The flowers of the Clammy Locust are of a bright pinky hue, and produced in thickly packed racemes often nearly 8 inches long. They remain good for a reasonable length of time, and it is no uncommon thing during favourable seasons for two crops of flowers to be produced, the second but little inferior either in point of quantity or quality to the first. I cannot say that the Clammy Locust is particular as to soil, for in one instance as fine a tree as could be desired is growing in a cool, rather damp loam in the Holwood grounds, while another grows as freely as could be desired and flowers abundantly where there is but a thin coating of loam on a deep bed of shingly gravel. The purplish branches and clammy exudation with which they are covered renders the identity of this species a by no means difficult task even in winter, while the bright pea-green foliage differs but little from that of the common Locust. Usually the Clammy Locust does not exceed 20 feet or 30 feet in height, but it is more frequently seen as a bush of say 10 feet or 12 feet. It is a native of the hilly grounds of Carolina and Georgia.—A. D. WEBSTER.

Double-flowered Brambles.—Though objections might be urged against planting these in some parts of the garden, there are in most places plenty of spots for which they are well suited, and at this time of the year they make a goodly show with their wealth of blossoms. The most conspicuous of the two is that with pink blossoms, known sometimes as *roseiflorus* and at others as *bellidiflorus*, and certainly this last name conveys a very good idea of the individual blossoms, for they are simply little rosettes of closely packed quilled petals of a most pleasing shade of pink. It is a strong growing Bramble, and may be employed in various ways. A large mass rambling over a bush in the wild garden is very pretty, or an isolated specimen may be formed by giving the branches at first the support of a few stout sticks and then allowing them to grow at will, as the long, flexible shoots dispose themselves in a graceful manner, and flower most profusely. This is a form of the variable *R. fruticosus*, while the double white is altogether a different plant, being of weaker growth and not so free blooming, neither are the individual blossoms so double. Both are, however, well worth attention, not only from their flowering now, but they also resist drought well. A good way to increase these Brambles is to bring the points of a few shoots in contact with the soil and peg them there, when they soon root.—T.

SHORT NOTES.—TREES AND SHRUBS.

Lonicera Ruprechtiana.—Among the bush Honeysuckles, *Lonicera Ruprechtiana* is now by far the most striking. Its abundant bright scarlet fruit, carried gracefully on arching branches, would make it one of the most desirable of hardy shrubs, even if it were not beautiful in general habit, foliage, and flower. Its only fault is that the flowers lack perfume.

Desmodium japonicum.—This is a pretty half-shrubby plant that forms a dense mass a yard or more in height, the shoots being terminated by spikes of rosy purple pea-shaped blossoms and clothed with trifoliate leaves. There is also another species now in bloom, viz., *D. Dilleni*, with larger leaves and flowers of a somewhat paler hue. Both are neat little shrubs, well adapted for planting in warm well-drained soils, where they furnish a bright bit of colour at this season, though they are not equal in beauty to the better-known *D. penduliflorum*, which is, however, some weeks later in flowering. All of them push their roots deeply into the soil, and they are consequently well adapted for planting in dry spots.—H. P.

Irish Heath (*Daboecia* (*Menziesia*) *polifolia*).—In any selection of hardy Heaths this must certainly find a place, for it is not only beautiful when in bloom, but the flowering season extends over a more lengthened period than is the case with any

other of its class. The blooms are large and showy and borne in good bold spikes well above the mass of foliage. It will flower for months together, and will therefore compare favourably with many of the tender bedding plants. The typical form has blossoms of a bright rosy purple colour, but there is a variety in which the flowers are pure white, while another bears both the purple and the white flowers on the same stem in varying proportions. The *Daboecia* is a native of Ireland, but it is not planted in this country so largely as it ought to be.—T.

Diplopappus chrysophyllus.—This has been spoken of as the Golden Heath, but such a name is certainly misleading. The plant is really a composite, and very nearly allied to the *Asters*. The blooms, however, are by no means showy, for though the plant is now in full flower, it is no more attractive now than at any other season. It is a native of Australia and has proved quite hardy in this country, where it forms a neat, much-branched bush, a couple of feet or thereabouts in height, and thickly clothed with small leaves, whose undersides are of a golden hue, which tint, from the peculiar arrangement of the foliage, is very conspicuous. The flowers, which are borne in terminal heads, are individually small and of a yellowish-white colour.—T.

THE FRUIT CROPS.

SOUTHERN DIVISION.

Shirley Cottage, Croydon.—In this neighbourhood Strawberries have been abundant and fine. Gooseberries abundant. Currants a good average crop. The same may be said of Raspberries. Morello Cherries are an excellent crop. Plums in most cases abundant. Apples and Pears a very light crop.—H. SHOESMITH.

Hatfield House, Herts.—This I consider the worst fruit season we have had for some years here. Strawberries were over the average. Plums, Cherries, and Peaches are average. Apricots, Pears, and Apples are under, the last two named (the most important kinds) being not only scarce, but the few we have are much damaged by a severe hailstorm we had on the 7th of June.—G. NORMAN.

Wonersh Park, Guildford.—We in this district (West Surrey) are greatly disappointed in our fruit crops, for considering the fine show of bloom we had and the poor crops of last year, we naturally thought of having at least a medium crop. Apple trees in many cases were completely stripped of their foliage by the maggot, and rows of trees may be seen with scarcely a fruit on. The same remark applies to Pears and Plums. Apricots are very poor. Morello Cherries abundant. Heavy crops of all kinds of soft fruit. Walnuts and Filberts plentiful.—ARTHUR HORSELL.

Yattendon Court, Newbury, Berks.—The fruit crops in our neighbourhood and in our garden are very variable and partial, Apples being a complete failure. The cause was bullfinches and the caterpillars. Stem binding with cloth smeared with grease and tar proved useless. Pears, Plums, and Cherries on standards have nearly all suffered alike. Morello Cherries on walls are excellent crops and healthy. Strawberries were an excellent crop, our ground being heavy. The following varieties have done best: Vicomtesse d'Éricourt de Thury, Sir Joseph Paxton, President, La Grosse Sucrée, Helene Gloëde, and Sir Charles Napier. Raspberries good. Gooseberries very good. No caterpillars. Red, White, and Black Currants good. Apricots on walls a fair crop. Our wall space is not large, and is occupied with Cherries, Pears, Plums, Apricots, and Morello Cherries. Of outdoor Peaches and Nectarines we have none.—R. MAHER.

Hackwood Park, Basingstoke.—Apples in this neighbourhood are much under the average, and in some places quite a failure. The following are the best: Keswick and Manks Codlin, Irish Peach, Lord Suffield, Warner's King, King and Sturmer Lippins. Pears are very bad; the sorts

we have a few of are Forelle, Winter Nelis, Marie Louise, Louise Bonne of Jersey, Beurré Rance, and Josephine de Malines. Apricots none. Peaches under the average. Plums not more than half a crop; Early Rivers, Orleans, Denniston's Superb, and Victoria are the best. Dessert Cherries very thin, Morellos good. Strawberries heavy crop, fruit large and of good flavour. Gooseberries, Black and Red Currants above the average. Raspberries not half a crop and fruit small. Nuts a failure. Altogether the worst fruit season I have known here for ten years.—JOHN BOWERMAN.

Elvetham Park, Winchfield, Hants.—The Apple and Pear crop here is the poorest we have had for years, although the trees promised well when in bloom, but within three days the bloom disappeared, which we attribute to blight, as in some instances the trees presented quite a scorched appearance. The following are bearing a few fruits: Cox's Orange Pippin (this and Ribston Pippin are the best for flavour), Margil, King of the Pippins, Blenheim Orange, Cox's Pomona, Dutch Codlin, Hawthornden, Golden Noble, Beauty of Kent. Of Pears we have a sprinkling of the following kinds: Jargonelle, Louise Bonne of Jersey, Seckle, Durandau, Beurré Clairgeau, Marie Louise, and Winter Nelis. Plums partial. Cherries—Elton, May Duke, Bigarreau Napoleon, and Morello are bearing an average crop. Strawberries have been an abundant crop and of fine quality. Raspberries and other kinds of bush fruit have been splendid crops.—T. JONES.

Leigham Court, Streatham Hill.—Of Apples few kinds are carrying a full crop, Kerry Pippin, Hawthornden, and Manks Codlin being exceptions; King Pippin also had a fair crop. The early flowering sorts have proved rather the best, having got well into growth before maggot got to work. Most Pears have a few fruits, but there are no heavy crops. Plums are above the average for this district and the fruit promises to be very good. Damsons are thin. There are no sweet Cherries. A good part of the Morellos dropped while stoning. Gooseberries and Currants have been abundant, and the Strawberry crop has been very good, in fact, the best we have had for eight years. Raspberries are never good with us, but have been poorer than usual this season. The crop of Peaches and Nectarines varies considerably, some gardens having a full crop while others have scarcely any. With us Peaches are thin, while Nectarines are a fair crop. Bloom was plentiful and strong, but the fruit fell after setting on account of the cool dull weather. I consider the following a few of the best flavoured Peaches: Royal George, Violette Hâtive, Dymond, Bellegarde, and Walburton Admirable (with markings like Noblesse). Hale's Early is of first-rate quality, but it has proved a bad setter with us both indoors and out. The only new kind we have is Alexander, which has not yet fruited. I am inclined to attribute the inferior flavour to over-cropping, want of exposure to sun and air, and deep rooting. When the trees are properly attended to, outdoor culture is a decided success in this district.—E. BUTTS.

Maiden Erleigh, Reading.—Having so many partial failures to record, I will commence with crops which are and have been satisfactory. Of these Strawberries were an enormous crop. Of bush fruits, Red Currants and Gooseberries were heavy crops and very fine, but Black Currants were a light crop. Of sweet Cherries, Governor Wood and Cleveland Bigarreau were good crops, but other sorts were thin. Morellos are a good crop. Plums are a good crop on walls, but poor on orchard standards. Peaches also are an average crop. Apples here and in the immediate neighbourhood are considered a failure; the trees were attacked by caterpillars about the middle of May, and by the end of the month many of the trees were quite leafless. About this time the caterpillars disappeared, and most of the trees have since made a good growth, but many are permanently injured. Pears also are almost as much a failure as Apples, and only the following sorts are bearing anything like a crop, viz., Brockworth Park, Beurré Diel, Winter Nelis, and Bergamote d'Esperen. Apricots

are quite a failure, as also are Walnuts, and Cobs and Filberts are a poor crop, the trees of the last-named having suffered nearly as much as the Apples from the caterpillars.—T. TURTON.

Ashdown Park, East Grinstead.—Apples and Pears are almost a failure. Plums and Damsons a very heavy crop. Black Currants half a crop. Gooseberries free from caterpillars by early hand-picking, and plenty of fruit. Raspberries plentiful. I find Carter's Prolific the best for fruit and canes.—J. DOWN.

Castle Hill, Bletchingley.—Apples and Pears very few. Cherries half a crop. Currants (Red, White, and Black) plentiful. Figs very few. Gooseberries half a crop. Grapes plentiful. Medlars, none. Nectarines, Peaches, Plums, Raspberries very plentiful, and there was an abundance of Strawberries. Nuts are quite a failure.

It has been a very trying season for most vegetables, the slugs being so destructive in the spring, and the worst season for blight and caterpillars on the fruit trees I have known.—D. ROWLANDS.

North Mimms Park, Hatfield.—Apples, Cherries, Pears, Plums, Peaches, Nectarines, Strawberries, Currants, Gooseberries, Raspberries are all very good and full crops. Apricots and Nuts are poor. This year the Moorpark Apricots are very badly attacked with the disease that variety is so subject to. Strawberries were a most magnificent crop all round. The weather was dry, fine, and not too hot during their season of fruiting. The new variety named Waterloo is a very attractive variety. It is quite distinct in appearance from any other sort. The fruits should be allowed to remain on the plants until they are quite black, and then the flavour is delicious. It is a late-fruited sort.—JNO. MCNICOL.

Denbies, Dorking.—The fruit crops in this locality have been fairly good with the exception of Apples, which are nearly a failure. The garden is about 600 feet above sea level and exposed to cold winds. There was a promise of an abundant crop of Strawberries, but owing to drought and east wind at the time the fruit began to ripen, the crop was only moderately good. Bush fruits have been very fair. Cherries on walls very good. Plums on wall a fair crop. Pears on south wall very good; on other aspects none worth mentioning.

The vegetable crop has been very good here, with the exception of early Peas, which were a failure.—J. BEESLEY.

Woburn Abbey, Beds.—The crops are very disappointing, through the cold, wet, and sunless season last year producing immature wood. Apple trees were again stripped of their foliage by caterpillars, leaving but very little fruit. Apricots are a total failure, the bloom being too weak to set. Pears very thin. Plums much below the average. Morello Cherries a fair crop; dessert kinds scarce. Damsons under average. Strawberries have been a heavy crop. Raspberries and Gooseberries good. Currants thin. Nuts a failure. On the whole, leaving out Apple trees, the foliage looks strong and healthy, and promising for next year.—ALEX. MCKAY.

Brookwood Asylum, Woking.—The fruit trees in this neighbourhood have suffered very much from the ravages of the caterpillars, and the Apples were the worst affected. Plums were badly attacked, but were not defoliated like the Apples. Bloom was abundant on fruit trees generally, and a very heavy crop was anticipated, but our hopes were soon destroyed by the ravages of the caterpillars. Birds are plentiful here, but they did not seem to perceptibly abate the nuisance. In many gardens the Apple trees had the appearance of having been scorched up. We have only a sprinkling of fruit where we had anticipated tons, and many of these are falling off. Plums—Green Gage is a heavy crop on standards, and the trees are in good health. Victoria only a partial crop; this sort suffered most from caterpillars, the trees being in a weak condition owing to the enormous crops they had borne for three years in succession. Diamond, which had been heavily laden for two years, has very few fruit this year, and so with most of the other sorts. Pears are a thin crop, although

the bloom was abundant. Cherries—what few we had on the caterpillar-eaten trees were destroyed by missel thrushes before they were half ripe. Bush fruit has been good, but the fruit has not swelled up well owing to the dry weather. Strawberries were good, but soon over, owing to the dry weather. Apricots are a fair crop, trees healthy. Peaches and Nectarines are poor, our soil and climate not being suitable for them, and mildew and blister attack them very badly. Nuts very few.—R. LLOYD.

Morden Park Gardens, Mitcham.—Our Apple trees had an enormous bloom this year, but owing to immature buds, consequent on the wet summer last year, the flowers were wanting in their usual robustness. The trees were afterwards attacked with caterpillars, and I feared we should lose the crop, but now the fruit has swollen the trees show fair crops, and we have decidedly a far better crop than last year. Pears bloomed well and set a fair crop of fruit, but after the hot days we had in May the winter Pears fell, while large standard trees of Williams' Bon Chrétien are carrying heavy crops, but the fruits are much deformed and speckled. Plums are a fair average crop. Strawberries have been most abundant and of excellent flavour. Raspberries are a fair crop. Gooseberries are a very heavy crop all round, the birds not having pecked out the buds last winter. White and Red Currants are very abundant and clean, but Black Currants dropped the best fruit after the hot May days. Apricots, Peaches, and Nectarines are a very thin crop, but the trees have made a very good growth, and look exceedingly promising for next year.—CHAS. GIBSON.

Great Gearies, Ilford, Essex.—The Apple trees have looked healthy all through the season, and at the time of blossoming the promise for a good crop was all that could be desired, but a large proportion of the flowers was defective in the parts of fructification, which is the only reason I can find for the deficiency in the crop. There does not seem to be any cause why the blossoms should be imperfect, except the unfavourable weather during last summer and autumn and a deluge of rain on the last days of July, which flooded the ground so much that part of it was under water for forty-eight hours. I found that even such hardy plants as Chrysanthemums were injured, and a portion of the roots killed. If the blossoms had been perfect we would have had a large crop; as it is there is not more than half a crop, taking one tree with another. A few trees have a good crop upon them, such as Juneating, which is now (July 24) dropping from the trees ripe. Lord Suffield is laden with fruit; so also is Lane's Prince Albert. Court of Wick is an excellent crop on espaliers. The New Hawthornden in the same position has an excellent crop; it is also bearing well as a bush tree. A large tree of Golden Noble is bearing well; and on Peasgood's Nonsuch there is a heavy crop. What we do have, even on the few trees that are well laden with fruit, is of excellent quality. There are a few maggot-eaten fruits, but this troublesome pest is not numerous. A few of our best Apples will be very scarce, amongst them the best dessert variety, Cox's Orange Pippin, and the best kitchen variety, Wellington; Cox's Pomona, usually well laden with fruit, is not so this year. It may not be worth while to enumerate all the varieties that have failed or that have succeeded, for those that were heavily laden last year have few fruits on them this. A large crop and an unfavourable season together might be expected to unfavourably affect the formation of blossom buds. The Pears are not such a good crop as the Apples, nor is the quality so good. The fruit is in many instances deformed, and such free-bearing varieties as Williams' Bon Chrétien, Beurré Hardy, and Beurré d'Amanlis have but few fruits on them. The best crop in the garden is on a large old standard tree of the Jargonelle, and a large one on the wall has a poor crop. Louise Bonne of Jersey has a fair crop of fruit on it, but the best of all our dessert Pears, Doyenné du Comice, has produced but a poor lot of fruit. Beurré Superfin is also a comparative failure. Josephine de Malines,

usually a free-bearing variety and an excellent late Pear, is also a failure. Even Passe Colmar, which has not failed to bear a crop of fruit during the last six years, has nothing like a crop upon it. Upon the whole, therefore, we may say that the Pear crop is a comparative failure. Plums are producing an average crop, and the quality might have been good except for the immense number of aphides, which invariably attack these trees more or less. The under sides of the leaves were quite covered with this pest; indeed I cannot remember the year that they were so badly attacked. They have now disappeared, and have left the leaves and fruit in a filthy state. The rains have washed them a little. We have no better Plums for a general crop than Victoria, Pond's Seedling, and Autumn Compôte. The last is a seedling from the Sawbridgeworth Nurseries, and it comes in after Victoria and Pond's Seedling. Goliath is an excellent large, reddish, purple-coloured Plum and bears well. We also obtain a good crop from a standard tree of the Magnum Bonum (white). They are all excellent kitchen Plums. The wall trees are not so well furnished with fruit as the standards; our favourites are Transparent Gage, Jefferson's, Coe's Golden Drop, and Kirke's. Cherries as standards and from walls have borne an excellent crop of the finest fruits we have had for some years. The finest by far of all our Cherries is Early Rivers; the fruit is black and of the largest size. Bigarreau Napoleon has also produced an abundant crop of large handsome fruit. Bigarreau Noir de Schmidt is an excellent black Bigarreau, but its serious fault is that it is a shy bearer, the worst in this respect of all the Cherries we grow. Black Tartarian and Elton complete our collection, and I do not care to grow any others. Apricot trees have gummed worse than usual, and there is but a poor crop. I noticed that the blossoms of these were more more imperfect even than those of the Apple trees. The dead wood has now been cut out, and the trees nailed up to the walls. They are making good growths, and if the weather continues favourable we will probably get a good crop of fruitful spurs for next season. Frogmore Early is an excellent variety, and so far our tree of it has not gummed. Peach and Moorpark are the others we grow; but the fault of Moorpark is that the tree has a greater tendency to gum than any of the others. Strawberries have been abundant and good, the hot weather set in at the right time for them. The late Rev. W. F. Radcliffe, an excellent fruit grower, stated that Strawberries required an Indian summer and plenty of water. We still cling to Black Prince for early work, Keen's Seedling next. Other favourites are President, British Queen, Frogmore Late Pine, and our own Loxford Hall Seedling. Gooseberries and all kinds of Currants are plentiful and of good quality. Filberts are a failure, but the trees are growing more vigorously than usual.—J. DOUGLAS.

Fulham Palace, London.—With great pleasure I give you a short report of the fruit crops here for the present season. Of Apples there was a magnificent show of blossom, followed by a remarkably good set of fruit, but within a month or six weeks, more than three parts dropped; yet so freely did the fruit set, that on many trees now there is a very fair crop. Pears are in the same condition. Plums, a grand show of blossom on both standard and wall trees, but did not set on the wall trees; on some standards a good crop. Peaches are very bad; but Peaches here are yearly getting worse, due to the increasing smoke, owing to the enormous addition to the buildings in and around Fulham. Figs, a very bad crop. Morello Cherries, a very fair crop. All bush fruits are exceedingly good. Gooseberries, an excellent crop. Currants of all kinds are very good, Black Currants in particular, being large, good, and clean, and above the average. Strawberries, an excellent crop, the principal sorts I grow being President and Vicomtesse Hélicart de Thury. I have tried many sorts here, but find none to succeed like these, and have therefore discarded all others. Tomatoes—of these I have four sorts, Mikado, Livingstone's Perfection, Stamfordian, and King Humbert. The last began to set very early,

and the vines are now loaded with fruit in all stages, some quite red. Mikado shows an immense quantity of bloom, and it is now setting and swelling very well. Stamfordian very fair, but Livingstone's Perfection is a failure. I may say I grow all on the extension system on an open trellis 7 feet high, and some of the vines are now at the top, with fruit the whole way up.

POTATOES, of which my principal sorts are Schoolmaster and Adirondack, are very strong, clean, and healthy, and according to the appearance of the haulm there should be a good crop. I may say that trees, bushes, plants, flowers have been very much covered with blight of various kinds, but the heavy rain of this past week has much improved the looks of all things.—A. J. BALLHATCHET.

Hanger Hill House, Ealing.—In reply to your inquiry respecting fruit crops, Gooseberries, Currants, Raspberries have been a heavy crop, and very fine. Strawberries on young beds very good, but on old beds a failure. Apricots are a failure except on Shipley's Early. Peaches and Nectarines rather light. Of Pears, Louise Bonne of Jersey has a heavy crop; Beurré d'Amanlis, Beurré Diel, Souvenir du Congrès, Josephine de Malines, Passe Colmar, fair crop; other kinds light. Morello Cherries plentiful; fair crop on dessert, but fine. Apples, a heavy crop on Emperor Alexander, Minchal Crab, Keswick Codlin, King of the Pippins, Cox's Orange, Early Harvest, Margil, King Pippin, Cellini; other sorts rather light. Walnuts, none. Medlars, abundant and fine.—E. CHADWICK.

Mereworth Castle, Kent.—Notwithstanding that the early prospects of an all-round crop of fruit were in every way good, the excessive heat we experienced in May proved too much for them; consequently both fruit and flowers dropped wholesale. Apples and Pears will be scarce. Peaches in some parts will be good, but taken altogether there is much below an average crop of fruit. Raspberries have been good. Strawberries heavy crops, and good in size and flavour. Red and Black Currants good here, but the crop is somewhat scanty on shallow soils. Gooseberries, too, are very good. While Cherries in orchards are somewhat thin, on walls the crop is different, being fine in size and plenty of fruit. Nuts much below an average crop. Plums, including Green Gages and Damsons, are good.—D. MARKHAM.

Bedfont, Middlesex.—The general condition of the hardy fruit crops in this district may be summed up as follows: Apples a very partial crop, some trees having a good sprinkling, others are fruitless, but in no case can a full crop be seen anywhere. The general crop may be regarded as about one-third of a full crop, but then the fruits are fine and clean, the recent heat having induced early swelling. Generally, the best crops are found on Juliens, Keswick and Manks Codlins, Stirling Castle, Kings, and a few other of the earlier varieties. Late kinds, Wellingtons especially, are very thin. With good prices and good samples those having Apples this year will be fortunate. Pears are thin except here and there upon the popular Hesse, some trees being full of fruit. Williams are very partial and thin. My own best crop is found on several trees of Alexander Lambre, which on the Pear stock always fruits, and compared with other kinds is carrying a good crop this year. For the first two years the young shoots are erect, then a crop of fruit pulls them down and ever after they remain drooping. Cherries have been a very moderate crop, Morellos, as usual, being the best. No Cherry proves more reliable than the Morello as a standard for cropping, the fruit fetching an excellent price. Unfortunately, it is too often gathered before it is ripe from fear of the birds. Plums are thin indeed; there is not a variety which can be said to be carrying a decent crop. Generally, the Plum crop is regarded as a failure, but Damsons are fairly good, though thin. Bush fruits have on the whole been good, but, oddly enough, some gardens have been short of fruit, whilst in others there has been a wonderful crop. Black Currants have been fetching as high a price as 12s. per basket, an unwonted high figure, and evidencing a short crop somewhere, if not in Middlesex. The Currants

have been very fine; so also have Gooseberries, these having been very abundant. Raspberries have been a capital crop, and have already thrown up an abundance of strong canes for next year. As to Strawberries, a finer crop nor finer samples never have been in the district, but the season after all was a short one, the hot weather prevalent at the time bringing on the fruit so rapidly that the bulk was in and over in about three weeks. Any very early varieties, such as Noble, may prove very useful to the growers, but late ones are not of much service, as once the public taste has been satiated with the main crop the demand for fruit becomes trifling. Runners are both plentiful and strong, so that there should be strong breadths of young plants put out for next season's fruiting. This is not a Nut district, but some Walnut trees are grown. The crop, however, is a very light one. Wall fruits are not now found generally in market gardens; therefore, I do not include reference to Peaches and Nectarines. Apricots are with me an absolute failure, and such I find to be the case generally. With respect to standard trees generally, the prospect for next year is an excellent one, as buds are being formed liberally, and by the autumn should be very stout and plump. Certainly, there is little doubt but that wood and buds will this year be thoroughly matured.—A. DEAN.

West Grinstead Park, Horsham.—The spring opened full of promise as regards the fruit crop, as there was plenty of bloom. The thermometer has not been under 42° since the 29th of April. With such mild weather in the month of May, the Apple and Pear crops in this district were very much reduced by the depredations of caterpillar and maggot, the former denuding the trees of their foliage, the latter damaging the fruit. Where trees escaped these visitations, very fair crops may be seen. Plums are a fair average crop. Early Cherries have been a failure in this district. Morellos a very good crop. Figs look well. Quinces thin. Gooseberries are a heavy crop, as also all kinds of bush fruit, and of good quality. Strawberries were abundant and very fine. It was the best crop for many years. Nuts thin. Peaches and Nectarines are good and clean crops.—JOHN THOMS.

Barham Court, Teston, Maidstone.—Apples under average, blossomed well, but almost all fell off through unripened wood. Maggot seriously injured the foliage, and in many instances washing with soft soap and Quassia was resorted to. Hand-picking the maggots, though more tedious, I have found to be more effectual. Pears were under average, and almost the same remarks will apply as for Apples. Plums were under average, though I know of a few orchards where very good crops are to be found. Fly has been very troublesome, necessitating frequent washings. Damsons especially are very partial. Strawberries above the average and of good quality, and the same remarks apply to Raspberries. Red Currants good average. Black under average, though some good crops are to be seen in a few plantations. Gooseberries an average crop, though some orchards failed through the ravages of caterpillar. Cherries are under the average; the trees, as usual, bloomed well, but a large percentage of fruit fell; consequently good fruit is fetching excellent prices, and even ordinary small Black are selling well. One striking fact in connection with this crop is that so very few are to be seen on the costers' barrows.

POTATOES, Peas, and all other kitchen garden crops have been all that could be desired.—G. WOODWARD.

Wierton House, Maidstone.—Most of the orchards and plantations both of Apples and Pears in this neighbourhood, with the exception of a few solitary trees, are nearly bare of fruit; private gardens are better. Bush trees, cordons, and espaliers have the best crops. Cherries were a fair crop. Morellos are scarce, also small. Plums are a partial crop, fairly good in some places. Damsons—some trees are heavily laden, and require support by props and string, and others close by have none. Nuts, both Filberts and Cobs, are a very light crop; some calculate 1 cwt. per acre, but

many are less. Walnuts poor; trees look unhealthy. Currants, Red and White, heavy; Black light and poor. Gooseberries a light crop, good in quality. Raspberries heavy crop, very good. Strawberries very abundant and large. Apricots almost a failure. Peaches and Nectarines a light crop, and still falling. Alexandra Peach (south wall) a good crop, has been ripe a week and good. Early Louise nearly ripe, also Orange Apricot. Figs have fallen off very much; Brown Turkey carries the best crop. Hardy Grapes very poor and late.—WM. DIVERS.

Theydon Grove, Epping.—Owing to the unripe state of the wood from last year's wet season, most kinds of fruit are very scarce in this district. Peaches (outside) and Apricots are very scarce. Apples are a fair crop; in some parts of the neighbourhood very light. Pears are very light. Plums are good on the whole; Damsons in some parts are good. Currants, Gooseberries, and Raspberries have been plentiful. Strawberries have been the best crop known for many years.—GEO. HEWITT.

Normanhurst Gardens, Battle, Sussex.—The Apple crop here and in the neighbourhood is very poor; trees in places suffered badly from maggot, but with me they are now looking well. The best are Cox's Orange Pippin, Fearn's Pippin, and Adams' Pearmain. Pears are about one-third of a crop; trees that bloomed set very well, but there was a great scarcity of bloom. Apricots none. Peaches about half a crop; the trees being very vigorous last summer and most of ours being on a west wall, did not get the wood ripe. Plums on walls are plentiful and good. Morello Cherries are also plentiful and good; dessert kinds almost a failure. Nuts very few. Gooseberries I never had better. Currants (Black and Red) are both fair crops. Raspberries very abundant and good. Strawberries a good crop and lasted a long time in spite of the hot and dry weather.—W. ALLEN.

Holmbury, Dorking.—Plums a moderate crop, trees looking healthy. Early Cherries none, and a poor crop of Morellos. Small birds and caterpillars, together with the unripened condition of last year's wood, destroyed the Apple crop, with the exception of a few ill-formed early fruits, such as Lord Suffield and Keswick Codlin. The trees are looking well now, and promise well for next season. The same remarks apply to Pears. Apricots do not flourish here. Out-door Figs are a good crop. Strawberries have been good and plentiful. Raspberries, White, Red, and Black Currants good crop, and Gooseberries excellent.—EDWD. J. BAYMAN.

Leigh Park Gardens, Havant, Hants.—In reporting the fruit crops this season I may say that the Apples vary much, some sorts, such as King of Pippins, Keswick Codlin, Dutch Codlin, Mère de Ménage, Lord Suffield, and Ribston Pippins bearing fair crops, but many sorts are very thin of fruit this season owing to a heavy blight which attacked the trees when in bloom. Pears are scarce this season. Among the most prolific are Jargonelle, Althorpe Crassane, and Beurré Diel. Peaches are a good crop, some of our best being Violette Hâive, Early Louise, Grosse Mignonne, Barrington, Walburton Admirable, and Lord Palmerston. Of Nectarines the best are Humboldt, Lord Napier, Albert, and Elrue. Plums and Cherries are a fair average crop. Strawberries have been abundant, but were soon over. Gooseberries have never been better with us, quite laden with fruit. Currants are a fair crop, and Raspberries are very fine.—C. PENFORD.

Royal Gardens, Windsor.—There was a good show of Apple blossom, but the hot weather (end of April and beginning of May) appeared to force the bloom prematurely, and in consequence there was not such a good set of fruit as promised earlier in the season; still there is a good average crop, and quality will be good. Orchards are much infested with caterpillars and grubs of various kinds. Many trees were almost denuded of leaves, but with the genial weather and rains we have lately had are fast recovering and making good wood. Pears a medium crop; Plums are an average crop. Cherries have been very heavy crops of excellent

quality, and owing to light rainfall less liable to crack. Bigarreau Napoleon and Monstrous Bigarreau are exceptionally large. Peaches and Nectarines have good crops of all kinds; the trees are making good growth and are free from aphids. I ought to add that all my outdoor Peaches and Nectarines are protected when in flower by blinds on rollers. Apricots are a poor crop. Small fruits of all kinds are abundant and of good quality. Strawberries plentiful, very fine, and of good flavour. Nuts are under average. Walnut trees suffered very much from early frosts. The tops of many trees are quite dead, but the lower branches are growing vigorously.—THOMAS JONES.

Clewer Park, Windsor.—Strawberries and Raspberries have been very heavy. Apples fair crop; Pears very thin, also Plums. Apricots a failure. Gooseberries and Currants fair crop. The above applies to our own garden.—W. H. FOWLER.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 13.

THERE was a bright meeting at the Drill Hall, Victoria Street, on Tuesday last, and it served to show one fact, that there are more hardy plants in bloom in August than many suppose. There is an abundance to be had now, if they are only looked for. As will be seen, numerous awards were made. One thing in connection with these is amusing. The committee recently protested against the interference of the council in the making of the awards, but the only result appears to be that the cards are placed to the plants as the awards are given; and stamped across them are words to the effect that they are made subject to the consideration of the council. This leaves the dispute unsettled, and makes the action of the council still more ridiculous.

FIRST-CLASS CERTIFICATES were given to—

GLADIOLUS NANCEIANUS PRESIDENT CARNOT.—We have no one to thank more than M. Lemoine, of Nancy, for the many choice varieties of Gladioli he has given us by his careful and successful crossing, and here is a variety of quite a new section called Nanceianus. The flower is of considerable beauty and seems to suggest that Saundersi and some large-flowered type have been used to bring about the result. This variety has robust tall spikes carrying flowers quite 4 inches across and about 5 inches in length, the colour rich shining carmine-scarlet, the lower segments splashed with creamy yellow, and blotched with carmine. It is, like the other varieties of its section quite hardy, the spikes having been cut from plants growing in the exposed situation and stiff loamy soil of Messrs. J. Veitch and Sons' trial grounds at Chiswick. We shall watch the development of this section with interest, as the first results promise a rich future.

PTERIS TREMULA SMITHIANA.—This is a beautiful variety of one of our most popular Ferns, and from a small plant of it is apparently dwarfer than the type, more tufted, and paler in colour. Its pale green fronds are finely crested and have a charming grace. As a table Fern we should think it would be much valued. From Messrs. R. Smith, Worcester.

NEPENTHES CURTISI SUPERBA.—This is a Bornean introduction and a far finer plant than N. Curtisi, which is also new. It has pitchers of similar shape, but they are more handsomely coloured and larger. The colour is deep green, almost hidden by patches of the richest chocolate, which is of the finest self shade on the broad overlapping rim; the lid is more highly spotted than in the type. It is one of the finest of the Nepenthes, and for which we are indebted to Messrs. J. Veitch & Sons.

VANDA KIMBALLIANA.—This is a delicate gem with charming flowers about the size of those of V. Amesiana, to which this new species may be compared. It was shown by Sir Trevor Lawrence, Bt., and a large basket of it also came from Messrs. Hugh Low & Co., Clapton, and from which we

can see its wonderful freedom of flowering. The terete leaves are rich green, a striking contrast to the delicately coloured flowers, which are borne on upright spikes about 1 foot in height. The sepals and petals are both white, each with a line of magenta down the centre; and the lip is of the deepest purple-crimson, except the two small lobes, that are yellow, with rich brown markings. It is the most beautiful new Orchid we have seen for some time, as the plant is not only free, but has exquisitely beautiful flowers of a shade everyone appreciates.

CYPRIPEDIUM ORPHANUM.—There is no lack of new Lady's Slippers, and we cannot find fault with this type for dingy or uninteresting colouring. It is a bright attractive flower, and a hybrid between C. Druryi and barbatum, the characteristics of which are fairly well blended. The lip is dull, shining rosy-red, and the petals brownish-red, with the central longitudinal line so marked a feature in C. Druryi; the dorsal sepal exhibited the same central line and upright stripes of green and rose. From Mr. Ballantine, gardener to Baron Schroeder, The Dell, Egham. This plant has already been shown by Mr. Tautz on August 9, 1887, and then awarded a first-class certificate.

AWARDS OF MERIT were numerous, and went to the following:—

GLADIOLUS HIPPOLYALTA.—This is a seedling variety raised by the exhibitor, Mr. James Whale, Park Street, Worksop. The flowers are of the usual cup shape of the hardy Gladioli, and in colour are cream-yellow, except the lower segments which are richly blotched with carmine. It is a distinct and handsome flower.

G. ALSACE.—A variety of M. Lemoine's raising and shown by Messrs. J. Veitch and Sons. The flowers are clear cream colour, the lower segments greenish-yellow, and blotched at the base with rich lake. It is quite hardy.

G. ANDRE CHENIER.—This is also a hybrid of Lemoine's and exhibited by Messrs. Veitch & Sons. It displays several tints, the segments having a strong shade of pink, except the lower one, which is deep crimson and yellow—a brilliant mixture.

DAHLIA W. C. HARVEY.—A single variety of a buff colour, shaded almost imperceptibly with pink, the centre crimson. It will please those who like buff colours. From Mr. T. S. Ware, Hale Farm Nurseries, Tottenham.

DAHLIA JAMES SCOBIE.—A single variety of a yellow shade, striped and splashed with red. From Messrs. J. Cheal and Sons, Crawley.

CHRYSANTHEMUM GOLDEN SHAH.—This is a summer-flowering variety, and a good addition to its class, as the flowers are of the richest yellow colour, very freely produced, and would make a great show in the garden, besides having a value for cutting. The plants are dwarf, compact, and laden with bloom. From Mr. T. S. Ware.

NEGELIA ACHIMENES PYRAMIDAL.—This class of plant is quite out of court now, but the old love will doubtless return, when this new variety will be much thought of. The plant is of excellent compact habit, densely clothed with leaves, against which the rich carmine flowers are in bold relief. It is a bright and charming thing of its kind. From Messrs. H. Cannell and Sons, Swanley.

DOUBLE BEGONIAS.—An award of merit went to each of the following tuberous Begonias, and all came from Messrs. Cannell and Sons. Mrs. Litkie, a very double Hollyhock-like flower of a rich pink shade; Mrs. Cayzer, a fine buff-coloured variety of a shade much sought after now; A. Blanc—this has not the objectionally full, lumpy centre that mars the beauty of many double flowers; it is looser and prettier, the colour a bright carmine.

RHODODENDRON DUCHESS OF FIFE.—This is of the javanicum race; the flowers of great substance, like those of the Stephanotis, and of a cream colour, sufficiently tinted with soft pink to give them life. They are of good form, and make up a handsome truss. From Messrs. J. Veitch & Sons.

PELAGONIUM DUKE OF FIFE.—This is a zonal variety that promises to become a good market

kind. It is a cross between King of Doubles and V. P. Raspail, and has a much larger truss of flowers than the last named variety; the colour is scarlet and telling. The plant has the advantage of good habit, robust growth, and excellent foliage. From Messrs. Hawkins and Bennett, Twickenham.

HARDY FLOWERS comprised a variety of good things. Messrs. J. Veitch and Sons showed for M. Lemoine three other varieties of the Nanceianus section of Gladioli, namely, P. Duchartre, rich shining scarlet; Horace de Choiseul, deep crimson; and Gloire de Paris, rich salmon-red, lower segment scarlet and yellow. Besides these was a collection of cut spikes of the ordinary spotted race, produced by the intercrossing of G. purpuratus and others. C. Heineman, light scarlet; La France, salmon-red, lower segment deep purple-lake; and Lemoinei, cream yellow, were the best of these (silver medal). A large group of hardy flowers came from Messrs. G. Paul and Son, Cheshunt, amongst them a mass of the feathery Gypsophila paniculata, the yellow Centaurea macrocephala, Rudbeckia purpurea, the most distinct of the Coneflowers in bloom now; the delightful Eryngium planum, a charming Sea Holly for the choicest spots in the garden; Chrysanthemum latifolium, Senecio pulcher, Tritoma nobilis, Aconitum autumnale, a grand border flower of the richest possible violet-blue, and frequently neglected or ill placed in gardens; hardy Gladioli, a mass of the graceful Eulalia japonica zebrina, and E. j. foliis variegatis. Several boxes of Roses, excellent in shape and colour for the season, were also exhibited by this firm (silver medal). Mr. T. S. Ware had a good collection of hardy flowers, comprising chiefly Dahlias, of which amongst the Cactus varieties there were splendid blooms of Henry Patrick, white; Prof. Baldwin, rich scarlet; Empress of India, deep maroon; Mrs. G. Reid, a delightful shade of soft lavender, a most beautiful flower; Sir Trevor Lawrence, carmine with a bluish shade in it; and Honoria, yellow. The bouquet and single sections were represented by well-known types. Mr. Ware also had a mass of the double white Scabiosa Snowball, Lilium Leichtlini, and several varieties of Gaillardia (silver medal). Messrs. Cheal and Sons had a bronze medal for a collection of Dahlias, including Cactus, single, and bouquet varieties. The best of the single types were Lady Montefiore, yellow, lower half of the petals pink; Albert Victor, deep maroon-crimson; Mrs. Bowman, bright magenta; Formosa, scarlet; Excelsior, mauve, upper half of the petals shaded white; and W. C. Harvey, reddish buff. Mr. S. Mortimer, Swiss Nursery, Rowledge, had a good collection of show Dahlias; and Mr. Dean, a compact deep blue-flowered bedding Lobelia named Favourite, grand spikes of the Mauve Beauty pyramidal Stock, single Dahlias, and an excellent strain of French Marigolds. African Marigolds and a good strain of Zinnias, which was commended, were sent from the Chiswick Garden. We recently noted in THE GARDEN this strain as showing an unusual diversity of rich colours. It is a selection of Herr Otto Putz. Messrs. Jackman and Sons had Clematis Mme. Baron-Veillard, the colour mauve and wanting in life.

ORCHIDS.—The finest mass of cut spikes of Saccolabium Blumei we have seen was on this occasion, when Mr. Norman brought from Hatfield House Gardens several racemes, each about 30 inches in length, perfect in freshness, colouring, and beauty—a delightful exhibition. Mr. Norman seems to have hit upon a happy plan of growing this species, as no special house is provided, the plants simply being grown with other things in a stove. Sir Trevor Lawrence, Bt., exhibited the beautiful blue-tipped Saccolabium celeste, Cypripedium Morganii (Burford variety), which has longer and broader petals than Veitch's form, verging more to superbiens; Eulophia megistophylla, illustrated in THE GARDEN, Jan. 19 (p. 62); Oncidium triquetrum, a small-flowered dwarf species; and Lælia monophylla, a very distinct self orange-buff coloured flower, free and showy. A botanical certificate was given it in 1885. Mr. Henry Tate, Allington Beeches, Liverpool, had a plant of Cattleya Warscewiczii Hardyana, of which a description will be found on p. 161 of

the present number; and Mr. Ballantine brought from The Dell gardens a spike of *Cypripedium Morganæ*. C. Lawrencianum, Goodhart's variety, is the name of a good, but not unusual form shown by Mr. Goodhart, Langley Park, Beckenham. *Cattleya Warszewiczii*, the type, was exhibited by Mr. Howard, The Grove, Teddington.

Miscellaneous things comprised a large collection of cut specimens of variegated trees, including those mentioned on page 155, from Messrs. J. Veitch and Sons. It is unnecessary to say more here, as they are described there. Messrs. G. Paul, of Cheshunt, had a golden variegated form of the Silver Maple named *Acer Negundo aureum variegatum*, which will have its use in the garden. Messrs. H. Cannell and Sons had a silver medal for a group, including *Coleus Vesuvius*, a fine bold-leaved variety, carmine with an edge of gold; C. Emperor of Germany, very deep purplish-crimson, shaded almost black; plants of the old *Roea falcata*, *Nertera depressa*, and several double tuberous *Begonias*. Several plants of the Octavia variety were shown, and the more we see of this double *Gardenia*-like flowered kind the more we like it. Mr. James O'Brien, Harrow-on-the-Hill, had a botanical certificate for *Gladiolus securigerus*, found on the south-east side of the Cape of Good Hope. The flower is pale orange-red, a yellow blotch margined with crimson appearing at the base of the segments. It has no ornamental value. Messrs. J. Veitch had *Hedychium Sadleri*, raised by the late Mr. J. Sadler, of the Edinburgh Botanic Gardens. It is a hybrid between *H. coronarium* and *H. Gardnerianum*, the flowers pale yellow, sweet-scented, large, and produced in a handsome spike. The same firm showed flowers of the Javanese and allied class of *Rhododendrons*, and Mr. Ross brought from the Pendell Court Gardens a large mass of the white-flowered *Physanthus albens*. Mr. John Green, Norfolk Nurseries, East Dereham, had *Coleus Rainbow*, with rich spotted leaves, but of no value now that we have so many of its kind. *Anthurium Laingi* came from Messrs. J. Laing and Sons, Forest Hill. It has a pure white spathe.

Fruit committee.—The collection of Tomatoes from Chiswick formed the chief thing of interest. There were sixteen pot plants, besides dishes of fruit. Amongst them were two crosses, one named Chiswick Hybrid being described below, and another was between Horsford's Prelude and Ham Green Favourite, the fruit deep scarlet, roundish, and smooth. A plant of Horsford's Prelude had thirty-one ripened fruits and several not ripe; and other good types shown were Chemire, deep scarlet fruit of large size; Lorillard, very large; Wiles' Prolific, handsome fruit of good colour; President Cleveland, a selection apparently from Perfection; Reading Hybrid, large flat fruit; and Advancer. There were also yellow-fruited kinds, Greengage, Golden Queen, Prince of Orange having remarkably clear golden skins. Baskets of excellent fruit of Livingstone's Perfection, Ham Green Favourite, Optima, Hackwood Park, Conqueror, Homefield Red, irregular fruit of good colour, and Abundance came from the Apple and Fruit Growing Company. Messrs. J. Veitch and Sons showed a collection of early Plums and Apples; Messrs. J. Cheal and Sons and Mr. Roupell, of Roupell Park, exhibited Apples. The Strawberry Grape, a black variety, well named from its Strawberry-like flavour, came from Messrs. Lane and Son, Berkhamsted, and a fruiting branch of *Alexandre Lambre* Pear from Mr. Dean. Mr. Green showed the Peach Tomato, of a salmon-scarlet colour, but of its quality we know nothing. There were several seedling Melons exhibited, one of which was certificated. A new black Grape came from Mr. H. Balderson, and a white seedling variety from Mr. Douglas.

FIRST-CLASS CERTIFICATES went to—

MELON BASING PARK.—This is an excellent variety, of luscious flavour and good appearance. It belongs to the green-fleshed class and is heavily netted. From Mr. W. Smythe, Basing Park, Alton, Hants.

TOMATO CHISWICK HYBRID.—This is a cross

between Perfection and Horsford's Prelude. In size the fruits are about half way between those of the two parents. It is exceptionally free-cropping, the fruits of good shape, more like those of Horsford's Prelude, and of a fine red colour. One cluster had eleven fruits, thus showing what a good variety and first-class culture can give in the way of a crop.

Royal Botanic Society.—This society held its 50th anniversary on Saturday last, and from the reports made then it appears that the year has been a good one. The financial position is stronger and the roll of Fellows has increased, 109 having been elected. The exhibitions have brought in a sum of £4022 6s., and with the subscriptions make a sum total of £7378 13s. 7d., an increase of more than £2000 over last year. This is, of course, attributable to the "Feast of Roses," which was such a signal financial success. Free admissions of from one to three months have been granted to 744 students, and 42,000 specimens of plants have been cut for botanical and medical classes in London. The Duke of Teck was again elected president.

The Gardeners' Orphan Fund.—A special meeting of the committee took place at the Caledonian Hotel on the 12th inst., Mr. George Deal in the chair. The honorary secretary brought up the dinner accounts, which were of a highly satisfactory character, and announced that the sum of £111 8s. 6d. had been subscribed in response to Mr. Veitch's challenge thrown out at the annual dinner, and a letter was read from Messrs. J. Veitch and Sons enclosing a cheque for £100. It was unanimously resolved that in consequence of the sum of £200 having been raised by reason of Mr. Veitch's challenge, that R. J. Todd and Olive Chapelow, the two highest on the poll of the unsuccessful candidates at the recent election, be placed at once upon the fund. In the case of four of the recently elected children, the mother is the responsible guardian; of the fifth, an uncle; and of the sixth, a well-known gardener. Mr. Asbee brought up the names of the forty stand-holders at Covent Garden who have been selected from among that body as life voters under Section 6 of Rule xii., and the same were ordered to be added to the list. The committee will not meet again until the last Friday in October.

NOTES OF THE WEEK.

Carnation Germania.—We have received flowers of this variety from Mr. H. B. May, Edmonton. This is one of M. Benary's seedlings, and the flower is of full, bold shape, the colour a delicate self yellow.

Rouen Violet (*Viola rothomagensis*) has been the brightest flower throughout the year on the Broxbourne rockery. Numerous purple and white flowers rise continually from the creeping stems. It is scattered about anywhere, and seems always in bloom.

Bomarea Caldasiana is flowering in the Cactus house at Kew, where it covers a large space. It is not so beautiful as *B. Carderi*, but distinct, the flowers individually small, rich orange in colour spotted with crimson, and produced in a large umbel. It came from the Peruvian Andes in 1863.

Oxalis Bowieana is a beautiful Wood Sorrel, and reminds us of the value of this neglected genus generally. It bears lovely rose-coloured flowers each about the size of a halfpenny, and borne with great freedom. It is in bloom in the Cactus house at Kew, where it grows like a weed on the side stages.

Flowers from Cork.—I send you with this a few spikes of *Monthretias Etoile de Feu* and *Gerbe d'Or*, to show you what graceful and effective plants they are when in full flower. Also a bloom of *Comet Aster*, which is not such a monstrosity as it is usually figured. The colour is charming. I have had a bloom in water for the last ten days, and it looks as fresh as the day on which I cut it.—W. H. BLAIR, *Patrick Street, Cork*.

Ivy-leaved Cyclamen (*C. hederaefolium*) is commencing to bloom in the Broxbourne Nursery, where it is grown exceptionally well in a peaty soil with pieces of limestone placed near the plants. The ground is bristling with buds, and will soon be hidden by the covering of bloom. Small colonies of it by

woodland walks, about the pleasure grounds in a semi-wild state, or on the rockery under jutting pieces of stones have a peculiar charm in autumn and winter.

Rock Forget-me-not (*Omphalodes Luciliae*) has been flowering on the Broxbourne rockery since March, and is now in good bloom. This charming plant likes a little shade and moist soil, and may be easily increased by division.

Piperella (*Micromeria piperella*) is a pretty little rock plant in full bloom at Broxbourne, and therefore especially worth a note, as there are not many rock plants flowering at this season. It grows in common garden soil, and makes a dwarf, tufted bush, the flowers tubular and pale lilac. It is one of the only really useful species of its genus.

Two good Roses of the Hybrid Perpetual class are Mrs. John Laing and Pride of Waltham, both of which are described on page 153. Some excellent flowers for the season of Mrs. John Laing were shown by Messrs. George Paul and Son, of Cheshunt, at the Drill Hall, Victoria Street, on Tuesday. The cutting Brier stock is the best for these two kinds.—C.

Purple Coneflower (*Rudbeckia purpurea*) is one of the flowers of the week, and well justifies a note for its great distinctness from other *Rudbeckias*, in which yellow is the prevailing colour. The plant was introduced from the United States as far back as 1799, and grows between 3 feet and 4 feet high; the flowers are reddish purple in colour, and make a welcome change at the present season.

Rhaponticum pulchrum majus is one of the fine plants of the year. It has handsome radical leaves, each 1½ feet long, silvery on the underside. It bears large rose-coloured flowers on stems 2 feet high, and blooms in June and early part of July. The foliage retains its ornamental character until the end of the season. It is a fine-foliaged plant of the highest order.—T. SMITH.

Macleania pulchra.—This ornamental greenhouse shrub, now flowering in No. 4 house at Kew, is very distinct from most greenhouse plants in bloom at this season. Its long drooping branches are brightened by clusters of showy pendulous flowers, the tubes of which are deep scarlet tipped with yellow. The plant being of such a trailing habit is best trained a little, either on stakes or on a wire trellis, to show off the flowers to advantage.

Plume Poppy (*Bocconia cordata*) is a noble hardy foliage plant, distinct, handsome, and showy by reason of its mass of close growing stems clothed with silvery grey, deeply veined leaves. The terminal inflorescence, though the flowers individually are not showy, gives a wild picturesqueness to the plant that adds greatly to its effectiveness when isolated on turf or allowed to spread about in the wild garden. There is a large group of it in the Broxbourne Nursery, with Purple Beech as a background.

Hollyhocks at Dulwich.—We have received a selection of Hollyhock flowers from Mr. Smith, of Dulwich, who we are pleased to see is giving earnest attention to the culture and improvement of the plant. He has a rich variety of kinds in his nursery, and the plants are in good health, considering their appearance elsewhere, which is far from satisfactory. The flowers display many colours, rich, decided, and showy, especially the clear yellows, deep crimsons, and pure whites.

Chrysanthemum maximum.—This is one of the best of pure white, Daisy-like flowers that we have for this season of the year. It is very suitable for cutting, as it produces an immense lot of bloom on good, long, stout foot-stalks. I find it succeeds best in a cool spot where the roots can find plenty of nourishment. It is a cross-feeding plant, with large fleshy roots, and I find it best to divide and replant the crowns every other year, as the flowers become smaller if the plants are left in the same spot.—J. G. H.

Passiflora kewensis is blooming freely in the Water Lily house at Kew near the Palm house. It flowered for the first time in 1888, and is a hybrid between *P. kermesina* and the hardy *P. cerulea*. It represents the two parents admirably both in foliage and flowers, which are larger than those of *kermesina* and have broader petals, while the fringe is between the two. The great difference is in colour, and here the hybrid does not gain anything, as the carmine shade of *P. kermesina* has mingled with the blue of the common type, and produced a mixture which, although not displeasing, is not so clear in colour as in the two parents. Growing in such a high temperature, of course we cannot tell what degree of cold it will stand, but it is

hoped it will prove sufficiently hardy for a greenhouse. Of its vigorous growth there is no question, as it has covered a rafter with a dense canopy of foliage, and the pendent shoots, laden with flowers, hang down gracefully, just as in the old *P. cærulea*, from which it has derived a most vigorous and healthful constitution.

Thymus comosus is at the present time the most conspicuous subject in flower in the alpine department at York. The plant grows freely. It is not quite so close growing as *T. serpyllum*, but has larger leaves, and produces numerous erect, cylindrical spikes of rosy lilac flowers. Suitable for rockeries, banks, or sandy borders.—R. P.

Bush Vegetable Marrows are now producing splendid crops. They are very suitable for small gardens, as they take up but little space and produce very fine Marrows in quantity. We lately saw some plants in a cottager's garden with half-a-dozen large fruits on them, and each plant was not more than a yard in diameter. It is strange that the Bush Marrow is so seldom grown. Those who have not yet tried it should make a note of it for next season, as it is one of those vegetables that seem equally good in all sorts of seasons.

Rose Homere.—This kind is valuable at this time of year for supplying nice little buds just the thing for button-holes, of a pretty rosy pink, and that last well in a cut state. Those who have a constant demand for cut flowers will find sorts like this far more profitable than those that flower when abundance of other kinds is obtainable. As soon as the first blooms fade, a good soaking of liquid manure helps the second bloom to push up strongly and quickly. Such kinds as this are far better on their own roots, as the strong shoots that push up from below the ground-line produce the best supply of bloom.

Indigofera Gerardiana.—This Himalayan Indigofera, which is very much like the better-known floribunda, is in splendid flower on a wall at Kew. It is exceedingly ornamental, very vigorous in growth, and makes a dense mass of pinnate Acacia-like foliage, from which peep out small clusters of rosy pink flowers, so that a specimen in perfection makes a bright picture that we might see repeated in other gardens besides that of Kew and a few leading places. The plant sometimes gets cut down in severe winters, but not killed outright, as with the return of spring comes new life.

Adiantum farleyense.—In writing of this plant in THE GARDEN, August 10 (p. 130), Mr. Gower seems doubtful whether it grows wild or not. A gentleman called on me the other day, and on looking at my specimen remarked that on "Farley" Hill, and I think he said in Bermuda, he had seen specimens growing wild 8 feet or 10 feet high and as much through, and that they looked lovely in the extreme. I was not aware of the uncertainty of the origin of this beautiful Fern, or I should have questioned him more on the point.—R. C., *Norwich*.

Cattleya Hardyana has ceased to surprise, but it always has a freshness and charm due to its rarity and unrivalled beauty. An excellent form of it was shown by Mr. Edwards, gardener to Mr. Henry Tate, Allington Beeches, Liverpool, at the Drill Hall on Tuesday last, the broad, splendidly coloured flowers showing a deeper shade, especially in the sepals and petals, than those on the plant exhibited by Mr. Hardy, of Timperley, in 1885. It was named after this gentleman, and is one of our finest acquisitions from Columbia, from whence it was introduced about 1884. Mr. Hardy's plant created no small flutter of excitement at the time, but better types have appeared since. It is a supposed natural hybrid between *C. aurea* and *C. Warscewiczii* (gigas), and the colouring, shape, and beauty of the flowers suggest that the origin of this variety is in these two species. The sepals and broader petals are of the richest magenta, and the lip, quite 3 inches across, displays a frilled edge and gorgeous velvety purple colouring, relieved at the entrance to the throat by two yellow eye-like blotches as in *C. gigas*. Then a golden network of veins runs into the throat as in *C. aurea*, and in-

tensifies the other colours. It has as rich a mass of decided shades as any Orchid we know, and that is saying a great deal.

Delphinium cardinale.—I send you some flowers of *Delphinium cardinale*; the two plants I have are very tall—5 feet; they have been blooming for five weeks, and the bloom appears from the bottom of the stalk to the top. Mr. Thompson, of Ipswich, writes to me to say that he has never been able to bloom this plant. Would other correspondents say if they have kept it through the winter in the open, as I am inclined to keep one plant in a pot in a cold frame throughout the coming winter.—C. O. MILES, *Almondsbury, Bristol*.

Oenothera biennis.—I would caution your readers, notwithstanding "A. H.'s" commendation of this plant, against introducing it into dressed grounds. The most fit place for it is in woodland walks or waste places far removed from gardens. About ten years ago I foolishly planted out a few seedlings at different places. In two or three years I found out my mistake, for it appeared everywhere, and the work of extermination had to begin. Although not a single plant has been allowed to seed here for the last five years it still continues to come up abundantly on freshly turned soil, and threatens to be a pest for many years.—J. M., *Charmouth, Dorset*.

Bouvardia from Edmonton.—A gathering of *Bouvardia* flowers, representing a choice selection of the best varieties, comes from Mr. H. B. May, of Edmonton. They suggest winter rather than summer, but *Bouvardia* are welcome in or out of season, especially when they have the strength of cluster and bright colours as these. There are good trusses of such old kinds as *Priory Beauty*, the double-flowered *President Garfield*, and *Alfred Neuner*; *President Cleveland*, the finest of the single scarlet types; *Vulcan*, very bright scarlet; *Vreelandi*, elegans, *jasminiflora*, *Humboldtii* corymbiflora, *Dazzler* and *candidissima*. There is also a truss of Mr. May's new sport, *Mrs. Robert Green*, represented by a coloured plate, together with *President Cleveland*, in THE GARDEN, March 30, 1889, and *Hogarth fl.-pl.*, a double variety of this well-known *Bouvardia*.

New Kniphofias at Baden-Baden.—Clotho is the first to open its flowers among the new beauties. It is early flowering; the foliage is massive, broad and bright green, stem 3 feet high, spike narrow, cylindrical, about 6 to 8 inches long; colour a uniform scarlet-crimson, the brilliancy of which is shadowed by a slight glaucous bloom. *Lachesis* has a stronger stem, about 4 feet, and the spike is larger, about 10 inches long. The colour is a dazzling golden yellow, quite a new feature in this beautiful tribe. *Atropos* has a stem 4 feet high, spike 8 inches long, cylindrical. The colour is a peculiar brick-red with a sombre tinge. The mouth of the individual flowers has a white rim, which adds to the beauty of the flower. It is quite a new colour and a charming variety. *Obelisk* is similar to *Atropos*, but the spike is conical in form and the colour a showy ochraceous orange. It bears two spikes on one stem. *Star of Baden-Baden* has a stem nearly 6 feet high, spike cylindrical, about 3 inches to 3½ inches in diameter, 1 foot in length; colour, canary-yellow with a tinge of greenish-bronze; anthers orange, protruding; individual flowers very open at the mouth, which is white. A magnificent plant. *Heroine* has the same dimensions as *Star of Baden-Baden*, but the colour of the flower is straw-yellow; the single flowers also are very open at the mouth and bordered white; anthers protruding, reddish. There are probably a few more to come and of which I may write hereafter.—MAX LEICHTLIN, *Baden-Baden*.

A singular Australian Orchid of no value, except for its curious character, is in bloom at Kew. It is named *Pterostylis Baptisti*, and belongs to a genus of about three dozen species, a few of which are limited to New Zealand, but the majority are found in Australia, and *P. Baptisti* among the number. The flower is carried on a stem about 9 inches high, and from the arrangement of the sepals might be likened to the hooded *Arizema*, the sepals forming the feature of the flower. The

petals are small, and the lip is pointed, narrow, and delicately hinged, so as to sway backwards and forwards with the least motion. In colour the flower is silvery white, made clearer by the deep green colouring associated with it.

Carnations.—One strong objection to growing Carnations is the necessity of having many sticks, which are both troublesome and ugly. But I have lately seen in Switzerland that Carnations (the Clove especially) are largely used as plants for window boxes with very good effect, the flowers being allowed to hang down over the sides of the boxes. This suggests to me that they would do well in the upper parts of rockwork, the flowers hanging down. Prize flowers, of course, could not be grown in this way, but there are many beautiful Carnations short of prize flowers.—HENRY N. ELLACOMBE, *Bitton Vicarage*.

Montbretias.—These are now flowering with us, and very pretty they are. The plants are grown in pots. After they had done flowering last season they were partially dried off. They were then watered again, and soon began to start away afresh. Before the plants had made much growth they were shaken out and divided. In some cases the rhizomes had not formed bulbs, but where a few roots could be got they were taken off and potted singly into small pots, and potted on as they required it. The stronger bulbs were potted into larger pots and made several good growths. The plants were potted in good mellow loam, with the addition of a little rotten stable manure, and stood on a moist bottom in a cool house. If exposed to a dry atmosphere, or allowed to get too dry, the tips of the leaves go off. After the pots are well filled with roots liquid manure may be used freely; that made from cow manure and soot being the most suitable. With a little care a good stock of these useful plants may soon be obtained, and they are very desirable either for the conservatory or the open border. The varieties we grow are: *Fiery Star*, red with yellow centre; *Sulphurea*, yellow with a bronzy tint; *Bouquet*, yellow petals tipped with red; and *Golden Sheaf*, clear yellow. This comes into flower a little later than the others and is dwarfier.—A.

Plane tree leaves unhealthy.—Will you inform me in your next week's number what the blight is on the enclosed Plane leaves, and the remedy? The tree looks healthy.—A SUBSCRIBER.

. In reply to the above, I should certainly say that the leaves had been infested by thrips. There are several small white cocoons on the leaves which have nothing to do with thrips, but may be connected with some insect which has done the injury. I will endeavour to breed the insect and report again.—G. S. S.

Garden overshadowed by Lime tree.—Will "R. R." kindly send his name and address.

Grapes not colouring (*C. Jones*).—Your Vines are evidently overcropped.

BOOKS RECEIVED.

"Fallow and Fodder Crops." By John Wrightson M.R.A.C., F.C.S. London: Chapman and Hall.

"Journal of the Royal Horticultural Society," vol. xi, part 2.

"Bulletin of Miscellaneous Information for August," Royal Gardens, Kew.

Names of plants.—*A. MacLean*.—*Rudbeckia maxima*.—*W. Young*.—1, *Gypsophila paniculata*; 2, *Lysimachia clethroides*; 3, *Lysimachia punctata*; 4, *Sedum Aizoon*.—*Mrs. Williams*.—*Pyrethrum uliginosum*.—*P. Lockhart*.—1, *Desfontainia spinosa*; 2, *Olea ilicifolia*.—*F. Norman*.—Fern seems to be small frond of *Asplenium Filix-femina*; send when larger.—*Orchid in bar*.—*Laelia crispata*.—*F. Hand*.—The Thorn Apple (*Datura Stramonium*).—*James Anderson*.—*Anonatheca cruenta*.—*J. Cocker* & Sons. 1, *Senecio abrotanifolius*; 2, *Solidago*; 3, *Scelymus hispanicus*; 4, *Chlora perfoliata*; 5, *Carduus heterophyllus albus*; 6, *Pentstemon diffusus*; 7, *Sedum oppositifolium*.—*C. O. Miles*.—*Silphium conatum*.—*G. F. C.*—Your plant is *Euphorbia Lathyris*, the seed of which is of no use for pickling. The true Caper plant is *Capparis spinosa*.—*J. M.*—The Bramble is *Rubus phenicolasius*, the *Sedum S. maximum*, and the other *Cochlearia* sp.—*Plant in bar without name*.—*Veratrum nigrum*.—*R. Banks*.—*Escallonia macrantha*.—*M. A. N.*—*Tecoma radicans*.

WOODS & FORESTS.

PRUNING AND THINNING YOUNG TREES.

THIS is a suitable time of the year for pruning, thinning, and sorting young trees in a rapid state of growth, as their wants and requirements when in full leaf can be seen at a glance and rectified accordingly. Another advantage of no small importance in having the work executed at this season is that deciduous trees are not apt to bleed where a branch has been cut back or removed, as the healing process commences immediately after the operation. As a general rule, young trees, whether in plantations or elsewhere, have made rapid progress this season. In the south of England, as well as in the north of Scotland, I have measured the summer's growth of the young shoots of Scotch Fir and found it in many cases to average from 18 inches to 24 inches in length, and that of Larch from 24 inches to 30 inches. Some of these trees here and there throughout the plantation occasionally produce double leaders at the top, and when such is the case no time should be lost in having the weakest shoot removed by cutting it off with a sharp knife close by the main stem, by which means the nucleus of a timber tree with one stem will be formed, and thus its value by nearly one-half be increased. This is a point in tree culture that is often overlooked until it is too late. I by no means recommend the removal of large limbs, and for this reason, that it cannot be done except at the cost of extra labour and expense, besides the damage to the growth and quality of the timber. The shape of a young tree in an active state of growth should be conical, or, in other words, the circumference of the stem a little above the basal swelling of the roots should contain as many inches as the height of the tree in feet. For example, a tree 20 feet high should girth about 20 inches a little above the swell of the roots at the surface of the ground. When trees are allowed to depart from this standard for want of timely thinning and pruning, they are apt to become drawn up and deficient in roots, and although they may attain the size of useful spars and props, yet they will never attain the dimensions of first-class timber trees, even although the ground is of good average quality. But the evils of crowding are intensified to a large extent where pruning has been neglected, and as both evils generally go hand in hand and are found in the same plantation, it is to be regretted that young trees in many cases are not better looked after during their early career. By pruning a young tree I do not advocate the cutting off of the side branches in order to produce a clean stem, but any unwieldy rambling branch had better be cut back in order to form a proper balance and uniform top. The leaves of the side branches are necessary for elaborating the sap in the formation of wood and increasing the bulk of the tree, but in after years the thinning should be regulated in such a way that the side branches gradually lose their vitality, die off of their own accord, and fall to the ground. In this way the stem presents a fine clean shaft free of knots or blemish of any kind. It sometimes, however, occurs that some species of trees in certain localities retain their side branches or part of them in the shape of dead knags here and there along the stem, and when such is the case these should be cut off close to the trunk to prevent the formation of a black knot in the timber.

The top of the tree, however, in early life is

the part which requires the principal care of the pruner in order to direct the leading shoot to the formation of one stem, and thus train the tree into proper shape and form for the production of valuable timber. Young plantations had better be examined every two years, and any rival leaders which make their appearance should be cut off.

The advantages of early and judicious pruning and thinning when requisite are so important in the rearing of timber trees, that they cannot be too forcibly impressed upon the mind of the cultivator, more especially in view of the sad neglect which is often seen in this important branch of tree culture, for no matter where we travel—east, west, north, or south—the evils arising from the non-pruning and thinning of young trees are often only too evident. J. B. WEBSTER.

The Plane.—My experience of the value of the Plane as timber is quite different from that of your correspondent "M." I cut a large tree down a few years ago and planked it up, thinking the grain of the wood was so handsome that it must prove valuable to upholsterers. I offered it to a large firm in Plymouth, but they told me it was inferior to Beech, as it would not take a polish. I gave some to a friend who is a very clever turner, and he made me a pair of candlesticks out of it, but he complained that though the wood was very pretty in the grain, yet he could not get it to take the polish. I have one or two more I could take down if I could get any price for them, but 8d. per foot was all I was offered for what I have got. The worst of the tree is it comes out so very late, and so much of the wood does not ripen and consequently dies in the winter, and this does not improve the appearance of the tree. I notice that the cattle do not eat the leaves, so they reach down to the ground; this certainly is an advantage.—R. K.

A plea for preserving old trees.—A feeling prevails that when trees are old and going to decay it is needless to try and preserve them. Of late years all our old ruined palaces, abbeys and ecclesiastical buildings are receiving much attention in order to prevent them falling into decay, or being carried away piecemeal for dykes and farm buildings, as used to be the case. These ruins are now rigidly protected, and sums of money are annually voted for their preservation. It would be desirable to see all our old trees, wherever they exist, equally well cared for, by root-feeding and stem-protecting, as well as by sheltering from inclement weather the decaying stumps of remarkable specimens. This is a subject of much importance, and well worthy of the attention of all who have a regard for fine old trees. When the bark and inner portion of the wood are alive, it is quite possible by the aid of feeding and fencing to throw increased vigour into some of these old specimens, and thus render them objects of interest for many years to come. If they are dead and reduced to stumps, they are even then interesting, as showing something of what the trees really were. I have always had great pleasure in looking at such remarkable remains of old trees, and I am sure many others must have the same feeling.—J. M.

Remedy for Beech blight.—A mixture of common lime with water, in the proportion of three or four handfuls of lime to a bucket of water has been recommended as a remedy for the Beech blight. This should be applied thoroughly over all parts of the tree affected, and if the matter has not been neglected too long and the disease allowed too great a hold, a cure is, I think, certain on a second application at most. I have for some years noticed this blight on the Beech, not only all over the United Kingdom, as I believe I may say, but on the Continent as well. It is the excrement of an insect and seems to be deposited on the Beech tree at almost all stages of growth. I do not think it is infectious, as I have noticed a diseased tree standing amongst others which were perfectly free from the blight. Doubtless, however, there is usually

some defect in the constitution of the tree attacked or it would not be selected. Want of proper drainage in the soil is, I think, often the cause. A very fine Weymouth Pine, in our neighbourhood, was attacked some years ago with this disease, or something similar to it. The branches were, I think, principally attacked, and the tree was at one time nearly dead. I had it thoroughly cleaned with the lime-water mixture, and it has been wonderfully healthy and making fine growth ever since. Many of my Beech trees I have treated in the same way, and, no doubt, their lives have, in some instances, been saved in consequence.

The forests of Russia are, in several respects, an important feature of the country, as a physical characteristic, in a commercial point of view, and as supplying fuel in a country only recently found to possess coal. Forest economy is now being more attended to, and young Russians are constantly sent to study forestry in the German and French colleges devoted to that science. The brushwood, covering a vast extent of forest land, consists almost entirely of the Hazel, dwarf Birch, Alder, Willow, and Juniper.

Mineralising wood.—When the terms mineralised, petrified, metalised, or incrustated are applied to wood, they include the meaning that the wood has undergone impregnation with an inorganic substance, which has so filled the pores of the wood that it may be said to partake of the characteristics of a mineral substance. Suppose that the wood has become impregnated with sulphate of iron, when exposed to the rain the sulphate will be gradually dissolved out, in time leaving only a basic sulphate. By the researches of Strutzki (1834), of Apelt in Jena, and of Kuhlmann (1859), the influence of oxide of iron upon wood fibre has been rendered very clear. Wood impregnated with basic sulphate of iron ceases to be wood after some time.

Planting trees.—The inducements to create property by tree-planting are so many and so powerful, that, to the greater part of those who possess the means, little, I hope, need be said to urge them to the employing of those means. Occasions enough will offer for showing how quickly the profits come. But still, there are some persons who possess such means, who are well assured of the ultimate gain, but who are, nevertheless, discouraged by the thought that they shall not live to see the actual pecuniary product of their undertaking, and who, according to the idea of that dismal moralist, Dr. Johnson, begin to think of dying when they are exhorted to plant a tree.—COBBETT.

Evils of thick planting.—If we wish trees to be firmly rooted we must allow the branches to spread freely. When they are so planted that the branches and leaves of contiguous trees do not interfere with each other, and thus all parts are exposed to air and light equally, the roots spread vigorously and extensively, so as to fix the plants in the soil, and to draw up copious supplies of nourishment. But in crowded plantations, where the branches are not allowed freedom of growth and exposure, the leaf-buds are either arrested or feebly developed, and the roots are of necessity injured. They do not spread, and the trees are liable to be blown over by the wind; they exhaust the soil in their vicinity, circumscribed by the roots of the trees around; their functions become languid, and thus they react on the stem and branches, so that the additions to the wood are small, and the timber is of inferior quality.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

PERENNIAL SUNFLOWERS.

Now that the Sunflowers are in the ascendant we may enter a protest against the wrong names under which they are often distributed from nurseries. There can be no reason, for instance, why a second class form of *Helianthus rigidus* should be sold as *Helianthus japonicus*, or why the name *occidentalis* should be attached to an early flowering hybrid of uncertain origin not the least like the true *H. occidentalis*, which is not, I think, yet in the London nurseries. Still less reason is there why a plant which is not a Sunflower at all, but an inferior form of the sometimes beautiful *Heliopsis lævis*, should be distributed and often mentioned in THE GARDEN by the name of *Helianthus atrorubens*, a species which I have never seen in cultivation in England, though it may exist. I may add that the *H. atrorubens* of Asa Gray is quite distinct from the plant in tab. 2668 of the *Botanical Magazine*, and is less ornamental. Hardly any genus of North American Composites gave Asa Gray so much trouble to arrange, and define, and divide into species as *Helianthus*. He tells us that many of them have probably formed wild hybrids, which are maintained as distinct, and he warns us that several species, especially the series of which *H. doronicoides* stands at the head, are concurrent, and pass imperceptibly by slight gradations into one another. As this is so, it is better not to be dogmatic about the precise characters which belong to each name; we can only assign each to the name to which it seems to come nearest. Many of the species ought to have a place only in botanic gardens, and so the names are not wanted in nursery catalogues, and only cause confusion. Garden seedlings, which are very often hybrids, had better not be named at all, or, if eminently ornamental, should be called by a florist name. I have now a series of seedlings raised from seed of *doronicoides*, many of them, no doubt, crosses and resembling, some, *H. rigidus*, others *H. divaricatus*, with every intermediate form. They do not surpass their parents.

As far as I have seen, the true species of perennial Sunflower in English gardens, where ornament is the object, might be limited to seven. The best is *H. doronicoides*, admirable for cutting, and producing its flowers in dense masses for six weeks at the end of summer. *H. rigidus* is good in fine summers, but it does not live well in water, and its habit is bad. Its close ally, *H. lætiflorus*, begins to flower when it is over, and is good only on warm and early soils. With me it never realises the grand portraits I see of it in catalogues. *H. giganteus* has a beautiful and well-formed flower, but the plant is too tall. *H. decapetalus* has the longest flowering season of any, and being of moderate height and close habit is desirable.

A black-stalked, rigid and compactly-branching form of *H. tuberosus*, which flowers from August into October, is also to be recommended, though the individual flowers are poor. Last and least in stature, but not in beauty, is *H. angustifolius*, a gem for a warm border, never more than 2 feet high, elegant in habit, and flowering abundantly nearly to the ground in September and October. Being a native of the Southern States, it is not quite as hardy as the

others, and as it does not spread at the root it must be raised from seed, which does not ripen in England and is rather scarce. *H. orgyalis* is easily grown by those who like it; here it is untidy and never flowers. *H. lævigatus*, *H. occidentalis*, *H. mollis* are distinct enough, but hardly ornamental. *H. strumosus*, *H. divaricatus*, *H. Maximiliani* are like inferior forms of some mentioned before. Of course, no garden could do without some of the forms of the hybrid Sunflower known as *H. multiflorus*, about which others have written quite enough. I feel no doubt that these forms are garden hybrids between *H. annuus* and some perennial species, probably *H. decapetalus* which seeds freely. I will only call attention to a curious habit of reversion from the double form to completely single. I have watched this habit carefully, and am certain that it is not to be explained by an accidental mixture of plants, although the change takes place in the shoot from the root, as I can never find single and double flowers on the same stem.

Edge Hall, Malpas. C. WOLLEY DOD.

CLIMBER-CLAD TREES.

THE beautiful engraving in THE GARDEN, Aug. 10 (p. 143), of the wild Grape Vines growing on the water Sycamores in California brings vividly to mind a group of giant trees in the very lovely Botanic Gardens at Singapore, which are draped with *Thunbergia laurifolia* from top to bottom, the general effect being precisely that expressed in the engraving. When I first visited the sumptuous Istana of H.H. The Maharajah of Johore, one of the most beautiful features in his garden was a hedge or trellis-work on the terrace covered with this *Thunbergia*, and at the time of my visit it was like a gigantic panel of lilac-purple flowers. The *Phalænopsis* was blooming in the Orange trees, and all around was the rustle of the giant Palm leaves overhead. I have never seen the Botanic Gardens at Buitenzorg (Java), nor those at Kandy, in Ceylon, but the garden at Singapore, with its 10 or 12 acres of primitive jungle and its native *Nepenthes*, *Orchids*, *Gleichenias* and other exquisite Ferns, comes back to my memory like a beautiful dream. In the same garden there is a noble group of Sago Palms by the lake, and a most elegant weeping Fig (*Ficus Benjamina*?), which at a distance reminds one of the Willows near to Twickenham Ferry, on the Thames. On the lawn near the band-stand the *Stephanotis* grows and flowers freely; and *Vanda teres* is there planted out and trained up stakes 5 feet or 6 feet high, and when in bloom, as seen at a distance, this superb Orchid reminds one of a cluster of Sweet Peas in an English garden. When Mr. P. C. M. Veitch and myself passed up the Koung Valley, beside the Tawarau River, on our way to the great Kina Balu Mountain in 1877, we were delighted by masses of vivid scarlet blossoms on trees as seen from the other side of the stream. It was at the close of a hard day's journey and we were too fatigued to investigate, but the next morning after breakfast we retraced our steps for a mile or so from Koung village, where we had slept, and found the low river-side trees draped with a scarlet-blossomed *Bauhinia* (*B. Kochiana*?) in the most exquisite manner. Further on we found another species of the same genus with yellow flowers flushed with pink, and which in habit and in general effects reminded one of well-grown Honeysuckle or Woodbine at home. Here and there towering clumps of tall Bamboos were wreathed with giant *Convolvuli*, and the Grass by the sides of the path supported *Thunbergia fragrans* with

its snow-white flowers. Most graceful and useful of all the numerous climbers of the Tropics, however, are the Rattan Palms, various species of *Calamus* which swing like ropes from tree to tree.

Even the Pitcher Plants (*Nepenthes*) are almost invariably climbers as found wild abroad, and in Borneo some species, such as *N. bicalcarata*, grow 50 feet or 60 feet high in the trees; and high up Kina Balu the bushes are clothed with their twining stems and leaves, from which depend their great flagon-shaped pitchers or ascidia.

The late Senor Endres told me that in South America the river-side trees are covered with the gorgeous Passion Flowers, *Aristolochias*, and *Fuchsias* of that region, the latter often epiphytal in their habit, and as thus seen naturally, far more luxuriant and striking than is possible under pot-culture or conservatory management at home. One would give a good deal to see these Californian Vines as tinted in autumn with scarlet, brown, and gold under a warm and generous sun. Even in our comparatively dull and chilly climate some of the wild Vines of the United States make splendid climbing ornamental plants. At Chiswick, years ago, I remember *V. vulpina*, *V. Labrusca*, and one or two other kinds used to bear fruit plentifully, and the leaves of the Vines trained on iron standards and swinging chains near to the old council-room assumed quite a vivid coloration. I do not know how much enchantment time may have lent to my memory, but I feel quite sure that the best of the wild Vines of America are well worthy of suitable positions in our southern gardens. F. W. BURBIDGE.

ROSE GARDEN.

ROOTING OF ROSE CUTTINGS IN AUGUST

NEXT to July, August is the best month of the twelve for the prompt and sure rooting of Rose cuttings and their well-doing and well-being afterwards, though there is a modifying clause behind all these statements in regard to time that may be formulated thus—viz., that condition is of more moment than time in commanding or ensuring success in the propagation of Roses from cuttings. Besides, after the close of September it will be better to treat Rose cuttings as deciduous than evergreen or ever-growing plants. The autumnal and winter rooting of Roses may be almost as safe as their summer propagation, but it is very much slower. To place the matter vividly rather than absolutely correctly, the one is a matter of five or six weeks, the other of six or eight months. As the season of risk may be said to run parallel with that of dormancy, it will be obvious to the merest novice in Rose propagation which method is likely to prove the more successful. Besides, there is a special pleasure as well as excitement in the rapid transformation of Rose twigs or branchlets into plants with hardly any let or hindrance. So rapidly and safely may this change be effected, that side shoots that have bloomed freely in June may be in flower again on their own roots by the middle or end of August. Supposing these same shoots inserted in August, they may be converted into healthy Rose plants on their own roots before the close of September.

What may correctly be termed the summer propagation of Roses should cease with the middle of September at latest. It had better close with August, though it may be prolonged till the end of September, or even later. This, as already remarked, increases the risk of failure, and also adds to the cost and trouble of propagation, for in such matters time and glass, or any form of artificial heat and protection are money. Hence the longer cuttings are about before they root the more the rooting costs. This is especially true of Rose cuttings with leaves on; for the leaves

while adding celerity and force to the rooting capacity of Rose cuttings, require special nurture and care for their preservation and the effective exertion of their root-forming powers.

Hence, as any tyro knows, while Rose cuttings without leaves are quite hardy, Rose cuttings with leaves on are more or less tender. In other words, the root-forming energies of the growing leaves can only be put forth under such genial conditions as shall preserve them in health and keep them at work until the cuttings are rooted. If rooted early, the cuttings may either be established in pots or in the open so early in the autumn as to be wintered with ordinary care and an average amount of safety; whereas late or imperfectly rooted cuttings always suffer abnormal loss and risk during the winter.

The after-treatment of early and late rooted Rose cuttings should also be widely different. The earlier batches can hardly be too quickly planted out or potted off so soon as rooted. Express rooting should be followed by express culture and proper establishment in pots or the open air; but late rooted cuttings are safest in their rooting quarters till next spring or for a whole year. And this long period is almost as useful for late struck cuttings with leaves on as for those without leaves inserted any time from October to January. In regard to those so-called deciduous cuttings, the earlier they are inserted after October the better.

Should the leaves not have fallen, leave two or three of the upper ones on. Some prefer when practicable leaving them all, and especially the base one on also. If it does little good it can do little harm; but it may do good. Assuming that only a portion of a few of its leaflets may reach above the surface, it is quite possible that even these may cause some modicum of rooting power to descend towards the base of the cutting and help to form there a callus or centre of rooting force. Be that as it may in regard to Rose leaves ready to perish in the autumn, it is certain that the leaves on summer Rose cuttings are to be jealously preserved by genial culture, warmth, moisture, shade, until they have done their best to develop roots and unfold new leaves.

Little has been said about soil in connection with the rooting of Roses. The less almost this is troubled about the better. The best of all merely rooting mediums is pure sand, but almost any sand will do, from sea to pit sand, unless the latter is saturated with iron or mixed too heavily with marl or clay. Fine Cocoa-nut fibre refuse or sawdust from hardwooded trees will also root Roses if they can be sufficiently consolidated. The great, the only vital points in this rooting medium are porosity, solidity, and retentiveness of moisture. The first two are say as two to one to the third, the fact being that almost any soil or other substance is sure to have sufficient retentive power; whereas comparatively few are sufficiently porous, and many are not sufficiently solid to provoke or induce the rapid development of roots. The attempt to feed Rose and other cuttings with food while wholly destitute of organs for the manipulation or consumption of food is the rock on which tens of thousands of Rose cuttings have been wrecked.

Base and sides have been plastered round with soils and composts crammed with food that have clung around them with leech-like tenacity until they have rotted bark, wood, embryo buds or roots, and in fact the whole buried portion of the cutting. The tops free from over-zealous intermeddling bravely struggle for life to the last; but their bases, gangrened and rotted off by contact with rich foods or saturated with stagnant water, perish, and the tops after a gallant struggle for life perforce follow suit. No Rose, nor any other cutting needs food until rooted, unless water, warmth, subdued light, and the organisable matter in their tissues and substance are reckoned as such. The business of the propagator is to nurture these powers and the vital force into root-making, and so soon as the roots are formed and in full growth to see that the latter are suitably and promptly fed.

D. T. F.

Rose Madame Guillot.—Under what conditions does this Rose succeed best? I find it very difficult to manage.—ATLAS.

Camoens is an old but beautiful Tea Rose for beds, and the healthy plants of it at Kew now in full flower suggest that it should be more often grown. The flowers are flimsy, it is true, but delightful, sweet, and of a peculiarly beautiful shining rose tint with a shade of yellow in the centre of the bloom.

A bed of Roses at Kew deserves a note. It has an edging of the old crimson China, and the centre is filled with plants of Mme. J. Messiny, a lovely pink-coloured flower shaded with salmon, Camoens, Ducher, and the deep crimson China Rose James Sprunt. It is on the Grass and one of the prettiest things at present in the Royal Gardens.

Rose John Hopper.—The woodcut of this Rose which appeared in THE GARDEN (p. 75) reminded me that I once overheard a conversation in which it was claimed as one of the very best Roses in cultivation. The conversation was between two men employed where Roses were grown by the acre for cutting from, and the great merits of John Hopper were expressed in their words: "It has no prickles of any consequence to worry you." Though the old saying, "There is no Rose without a thorn," will scarcely apply nowadays, still the fact remains that some are far more unpleasant than others to handle.—H. P.

CHRYSANTHEMUMS.

E. MOLYNEUX.

SELECTING THE BUDS.

FROM NOW ONWARDS for the next six weeks is, perhaps, the most critical time of all to the grower of Chrysanthemums for the production of large exhibition blooms. Even to the experienced cultivator this is so, but to the learner it will be extremely puzzling, because the proper selection of buds which will later on produce the finest blooms just at the time they are wanted is the all-important point. If the buds are not selected at the right time and of the right kind, it is useless to expect flowers of the class required either to win prizes or make a good home display. There are certain buds to be selected for the production of the blooms described, and to obtain them is our object. There are certain orthodox terms used that may appear strange, and which, if not explained, may prove misleading. "Taking" the buds is a term used at this stage of growth. Some persons may think it means pinching off the flower buds, but the reverse is the case. It is the removing of the growths which form around the flower-bud. When a bud is being formed a temporary check takes place in the growth of the plant through the formation of this flower-bud. The result is that from each node below the point where the bud is forming other growths spring, and by the time that the bud is formed and can be plainly seen the growths will be from half an inch to 2 inches long, according to the strength of the plant and the variety. The growths are removed, thus throwing the whole strength of the plant into the development of the flower-bud; that is what is meant by "taking" the buds. Another term is that of "letting them go." This is a phrase used when it is considered that the buds formed will be too early. "Letting them go" means pinching out the buds and allowing the growth to extend, waiting for the formation of other buds at a later stage.

Directly the new growths commence to spring from the nodes below the seat of the bud the experienced cultivator knows that a flower-bud is being formed. If he decides to "take" this one, he lays his plans accordingly. Before operating he must know whether this particular bud is formed at the right moment, or whether the time is unsuitable for this especial kind. Some sorts will give the best flowers from buds taken at one date, while those of another variety taken

at the same time will not develop a presentable flower at all.

For example, buds of Boule d'Or taken the first or second week in August will require as much time to develop into full bloom as buds of Queen of England take a month later. The difference between knowing when and when not to take the buds means success on the one hand or utter failure on the other. There is a special tendency amongst the plants to form buds at a very early stage, and which may later on be a source of annoyance. This early bud-formation is the result of the excessive hot weather experienced during the early part of July, while the backward state of the plants early in the season may have some share in the early attempt of the plants to set their flower-buds. At any rate, there is a decided tendency in the plants to form early buds, which will need prompt attention in their selection or removal as the case may be. The safest course to practise this season will be for those persons who have a large number of plants to try them on two methods—early and late bud-selection. In selecting the buds to obtain the best results, the locality of the cultivator must be taken into consideration, as there is considerable difference between the northern and southern counties of England. The former are more favoured than the latter in the selecting of their buds, as the plants as a rule make their growths in a manner more suited for the formation of flower-buds at the correct time. Growers in the southern counties have much more difficulty in obtaining perfect blooms than those growers residing further north. Of course, there is a limit to this again, because if too far north the seasons being later do not admit of the plants showing certain phases of growth at a desirable time to admit of the cultivator competing with southern growers on the same terms.

PUBLIC GARDENS.

LONDON PARKS AND GARDENS.

THE London parks and gardens teach very few lessons in the proper placing of plants, and afford many illustrations of poorness of design, lack of conception in the disposition and association of colours, and a deplorable absence of good hardy things that flower well even in the sulphureous, smoky atmosphere of the great metropolis. There are signs, however, of a decided reaction against bedding out as represented by the formal pattern style, which at one time was the only kind of design ever attempted in a London park. There is a change from the carpet bed to an arrangement in which the old style is blended with the new, and which results in a happier, prettier, and less monotonous effect. Borders of hardy plants fringe the outskirts of several parks, and show those who are ever ready to decry such things that there is a long list of beautiful hardy flowers in full perfection now if they are only sought for and properly selected. The prettiest piece of planting in any London park is the mass of hardy perennials intermixed with Pelargoniums and annuals in the Embankment Gardens at Charing Cross. There is, of course, much to complain of in the planting. The things are huddled together, but it is a step in the right direction, and a sign that at last appreciation is shown plants that require little trouble once they are planted. There are clumps of the double perennial Sunflower (*Helianthus multiflorus* fl.-pl.), masses of the annual Coreopsis, old Clove Carnation, annual Lupine, with Pelargoniums planted here and there in distinct colours. A central bed mainly made up of the same kind of plants is also very gay, and one of the best effects of its kind we have seen this season.

Hyde Park is worth a note for the rich abundance of Fuchsias that have been made use of in the flower beds. It seems that this fine old bedding plant

has returned with a bound, and, as in the case of many other things, is already overdone. Entering by the Stanhope Gate, the eye rests upon scarcely anything but Fuchsias, either arranged in beds of one colour, or placed as specimen plants on the Grass, and occasionally with a view apparently to some kind of grouping, but if such was intended, it is a failure. One bed is pretty, and made up of a carpet of *Oxalis floribunda*, relieved by plants of *Fuchsia Sunray* and *Grevillea robusta*. It is worth a note, not so much that it is a contrast of colour, but because it brings into use the *Oxalis*, a free-growing and lovely flower that is often heard of, but seldom seen. Another bed was made up chiefly of plants about 2½ feet high of a light-coloured *Fuchsia*, the ground carpeted with *Herniaria glabra* and *Alternanthera*. One bed showed the evident desire there is for using biennials and hardy perennials more, as it was made up of *Snagdrags*, associated with *Coleuses* and *Pelargoniums*. It was ineffective and weak, simply through an injudicious association of plants. A bed of a good deep crimson *Snagdragon* alone, or one of some other decided colour would have been far richer and handsomer. No mixed bed of *Antirrhinums* looks well, especially if such things as *Coleuses* are grouped with them, and the reason is obvious. Several beds in Regent's Park are spoiled in the same way. On one side of a bye-walk there is a mass of yellow and crimson *Celosias* grown with self-coloured *Carnations*. The gaudy, feathery spikes of the *Celosias* entirely destroy the colours of the *Carnations*. An arrangement like this is inexcusable. No one who has any conception of harmony of colour would think of putting the strongest coloured *Celosias* with *Carnations*, and yet such crude examples of planting are too evident. If the bed had been planted with either *Celosias* or *Carnations*, there would not have been much to complain of, as both flowers when distinct are exceedingly showy. A large bed in Hyde Park was planted with tall graceful specimens of such old *Fuchsias* as *Earl of Beaconsfield*, all densely flowered, the wand-like shoots resting on a mass of tufted *Pansy Mrs. Turner*, a rich lavender-coloured kind, and the whole bed edged with *Gazania splendens*, an old favourite that might be seen more, especially in the London parks, where it grows and flowers well. The mention of "tufted *Pansy*" reminds one of a most useful race of hardy plants, and it is a pleasure to find that their use in the parks is on the increase. Nothing can be freer, showier, or more easily propagated and grown than the tufted *Pansy*, and there are many varieties with flowers of the richest self shades that may be selected. They bloom from early spring, throughout even the hottest summers, and only cease with the frosts. Two beds of *Fuchsia Annetti*, which has scarlet sepals and mauve-coloured corolla, were striking, as the pale blue *Viola lilacina* covered the surface with its bloom. Two beds of *F. Mme. Cornellison* with a groundwork of *Cliveden Purple* tufted *Pansy* also call for mention. Summer-flowering *Chrysanthemums*, the variety *Précocité* especially, make gay blocks of colour; the plants are quite dwarf, and covered with bloom. One hideous mixture is composed of scarlet-flowered tuberos *Begonias* and *Alternanthera* of the same colour. It should be removed in the common interests of taste. Near the Marble Arch we find a different style of planting, and a welcome relief from the surfeit of *Fuchsias*, *Pelargoniums*, &c., as here are borders of hardy plants, with good clumps of the white Japanese *Anemone*, *Clove Carnation*, *Eryngium planum* (the most delightful of Sea Hollies), *Harpallium rigidum*, *Helenium autumnale*, *Poppies*, *Gypsophila paniculata*, *Helianthus*, *Calystegia pubescens* fl.-pl., *Campanula persicifolia*, *Lilium auratum*, and other good hardy plants. They thrive almost as well as in the suburbs, though in common with all London plants are a trifle shabby from the accumulation of dust on the leaves, as the border is just within the railings. Hyde Park remains for the season the place to see *Fuchsias*, and, certainly, the single specimens, some as much as 3 feet through, and of considerable height, are exceedingly graceful and handsome. Every shoot is covered with flowers, which quite touch the Grass,

making mounds of bright bloom. The *Earl of Beaconsfield* is largely used, as its scarlet tubular flowers tell well in the mass; *Annetti*, previously described, is a good kind, also the old favourite *Mrs. Marshall* and *Mme. Cornellison*.

Regent's Park.—There is much bad planting here, but a few good features that might be repeated another year with signal advantage. Near the Chester Terrace Gate there is a wide border backed with shrubs, and since the spring this has shown a wealth of bloom. There are now large clumps of *Hollyhocks*, the noble spikes rising from a base of foliage, and groups of herbaceous *Phloxes* of one colour—one variety, a rich magenta, making a rich mass. Nearer the edge is *Campanula carpatica*, *Snagdrags*, and *Lilium auratum*. A long border is edged with a yellow-flowered tufted *Pansy*, behind this a line of a blue variety, with the main portion of the border filled with hardy plants, such as have been before mentioned, with *Hyacinthus candicans*, and *Aconitum autumnale*. Some hideous stonework is covered with masses of *Fuchsias*, whose slender, flower-laden shoots fall over gracefully and quite hide the wretched masonry. A colony of *Campanula pyramidalis* against dark-leaved shrubs brought out the clear blue of the flowers; it was a happy piece of planting, and the same may be said of a bed of *Countess of Kintore* tufted *Pansy*. A piece of subtropical planting, such as we might have expected in Battersea Park, is natural and imposing. In a deep recess with a background of tall shrubs are specimens of *Dicksonia antarctica*, *Musas*, and *Dracenas*, and in one rich mass by itself is *Lilium auratum*. It is quite tropical in its effect, and the shade and shelter suit the *Lily*. In the centre of the bedding arrangements at Regent's Park is a set of beds, in which *Abutilon vexillarium* is solely used as what may be called the standard plant for the purpose of breaking the level. We have seen many paltry designs and effects, but few to equal the patchy, spotty, and sickly colouring brought about simply through the abuse of what is a good plant when judiciously placed. Bedding out is supposed to give colour, and in this case it is simply a weak display of pale, greenish-yellow, not a very inviting shade.

Battersea Park presents the usual features. The recent rains have started the sub-tropical plants into vigorous growth, and the beds have therefore a rather ragged aspect. One large bed is effectively planted with specimens of *Eucalyptus globulus*, each about 6 feet high, *Gladiolus brechenleyensis*, and white *Marguerites*. Many spots are bright with the glowing scarlet spikes of this *Gladiolus*, which this year is finer than usual. It might have been used more in the other parks. One narrow border was brilliant in the extreme; the back was formed of *Chrysanthemums*, then *Heliotropes*, yellow *Calceolarias*, scarlet *Pelargoniums* and *Ageratums*—a bright contrast of several colours. A bed of *Roses* near the station gate might be removed. It is made up principally of standards in various stages of decay, a few quite dead; the bush plants are in no better plight. Surely those who are responsible for the planting of this bed have learnt by this time that standard *Roses* are not the best for London, or anywhere for that matter.

From the foregoing notes it will be gathered that there are many crude mixtures and paltry effects in the bedding out, and this is true; but there is a gradual step forward in the planting of hardy flowers. Their success in London parks where they have been tried will still further increase their cultivation and render our public gardens less formal, more interesting, and just as showy, with a far greater variety than was the case when everything but tender bedders was vigorously excluded. It is too early yet to criticise such places as *Clissold* and *Brockwell Parks*, as they have only been opened recently; but it is hoped that we may see there next season a still greater change in the love for hardy flowers, as these open spaces comprise many broad acres, in which bold groups and masses can be made both in mixture and of one colour. We should not then have to lament the narrow lec-

tion of hardy plants; and the fact that although the *Tiger Lily* is in full beauty in many English cottage and suburban gardens, not a single spike could be found in a London park. C.

NOTES OF THE WEEK.

Autumn blossoms.—The Autumn *Snowflake* (*Acis autumnalis*) and hardy *Cyclamen* are wonderfully effective, and very pretty when grown in masses; but, alas! they are sure signs that autumn will soon be with us.—A. K., *The Holt, Stanmore*.

Saccolabium Blumei.—From the Marquis of Salisbury's garden at Hatfield Mr. Norman sends us many beautiful spikes of *Saccolabium Blumei*, with a photo. showing the superb growth of the plants from which they were gathered.

Gladiolus Saundersi.—This species is largely grown at Ipswich, and its brilliant scarlet flowers are as showy as those of many of the hybrid kinds, with the additional advantage that *G. Saundersi* is perfectly hardy. It is rarely seen in gardens, although it deserves an important place in every good border, for if planted in a sunny position in good soil it will take care of itself, and the flowers will always be welcome during the summer and autumn.—A. H.

The Riviera Bindweed (*Convolvulus altheoides*).—This charming Bindweed is very pretty in Mr. Thompson's garden at Ipswich. There is a mass in the border rambling over a branch, which is hidden in graceful wreaths of foliage and flower. The deeply cut leaves are quite distinct from those of other Bindweeds, and the bright rosy flowers are borne in great profusion. Although a native of the Mediterranean, it is hardy in English gardens, and deserves extended cultivation.—A. H.

Canterbury Bells.—Plants of these hardy perennials that had their first flowers picked off as soon as they faded are now, in the third week in August, almost as beautiful as they were when the first lot of blossoms opened, the individual blooms being quite equal in size to those first produced. The removing of the first lot of flowers directly they fade prevents the plants from getting exhausted by the formation of seed vessels, so that their strength is reserved for the production of a second crop of bloom.

The Ligurian Harebell (*Campanula isophylla*).—This when flowered in baskets suspended from the roof makes a charming addition to a cool greenhouse. The blue and white varieties may be mixed in the baskets, as they look better than when grown separately. The plants quickly establish themselves when turned out of the cutting pots, and soon cover the baskets with their lovely blue and white flowers. For such a purpose few plants flower better in a cool house. We lately saw some very fine specimens in an amateur's conservatory.

Allium pulchellum.—Amongst the few beautiful *Alliums* grown in our gardens this certainly takes a first place. It is one of the most easily managed and does well almost anywhere, even in the poorest soil, requiring no care in the matter of lifting, which is one of the chief objections to the growing of bulbs by amateurs. From a dozen bulbs planted a few years ago we have now a large clump, and at present it is one of the most attractive plants we possess, the loose heads of pretty rosy purple flowers being quite a relief. Its near ally, *L. flavum*, producing in the same manner pale yellow flowers, is a worthy rival, and should also be grown.

National Chrysanthemum Society.—A conference of cultivators and others interested in the Chrysanthemum will be held on September 11, in conjunction with the National Chrysanthemum Society's exhibition of early flowering Chrysanthemums with *Dahlias* and *Gladioli* at the Royal Aquarium. The programme prepared by the sub-committee appointed to carry out the arrangements includes a paper by Mr. W. Piercy, of Forest Hill, on "Early Flowering Chrysanthemums;" and a paper by Mr. J. Doughty, of Angley Park, on the "Treatment of Plants (grown for the production of exhibition blooms) a short time previous to the shows." The chair will be taken at 4 p.m.

Veronicas at Edinburgh.—I have rarely seen better effects with New Zealand *Veronicas* than those produced in the Edinburgh Botanic Gardens, which may be termed the head-quarters for plants of this class. *V. salicornoides* in large beds looks more like a *Conifer* than a *Speedwell*, and yet in the south there is the greatest difficulty in keeping

it alive at all. *V. cupressoides* is very similar, but, instead of being prostrate, it grows upright and is more bushy in habit. *V. Armstrongi*, *lycopodioides*, *linifolia*, and others are all highly interesting and extremely beautiful rock plants. In the north *Veronicas* seem to thrive best the more they are exposed to the sun, while in such a position in the south they would be burned up.—D.

Erythrina crista-galli.—A well-flowered specimen of this, whether grown in pots or planted out of doors, is a handsome object. If grown outside the roots must be protected in winter, or better still be taken up and kept in a cool dry place and re-planted again in spring. If kept in pots it will be found very useful for the greenhouse, if stood out of doors in the full sun until the bloom shows. At Kew some fine specimens are flowering in the greenhouse, and it is also used largely in the flower beds.

Two good Achilleas.—*Achillea aegyptiaca* is perhaps the most beautiful of the whole family, as it forms large spreading tufts of finely cut, silvery foliage. It is not only valuable as a foliage plant, but in addition it bears showy corymbs of yellow flowers. *A. eupatorium* is a noble kind. It grows tall, making woody stems, each from 3 feet to 4 feet high, which are terminated in broad, flat corymbs of showy yellow flowers, which retain their freshness and beauty for many weeks. Among the nobler hardy plants or neat shrubs this *Achillea* would make a long-lasting and telling feature if grown in broad, free masses. Both are readily increased by division.—A. H.

Herbaceous Lobelias.—Without the herbaceous Lobelias, such as *fulgens*, *cardinalis*, *Milleri*, &c., our borders would lack much of the beauty they at present possess. All the Lobelias of this class come in useful now, and they will be a source of pleasure until the early autumn frosts give warning that the time has come for lifting and transferring the stools to their winter quarters. *L. cardinalis* I consider the most graceful of all. It is, however, weaker than any of the others, and does best in a peaty soil somewhat shaded. The leaves are broader than those of *fulgens*, the flower-stem dwarfer, and the flowers more deeply coloured. *L. fulgens* is, I believe, the same as *splendens*. *Victoria* and *Rob Roy* are good varieties of this. *Milleri*, or *hybrida* as it is called, is said to have been raised from *L. syphilitica* crossed with *L. fulgens*. I have no authority for this, although I do not doubt its correctness. It is one of the hardiest and most useful for the flower border.—D.

Delphinium cardinale.—My friend and correspondent, Mr. Miles (*GARDEN*, August 17, p. 161), has rather misapprehended a recent reference of mine to this fine plant. My failure to bloom it applies only to the present season, a large batch of young plants having been cut to pieces by the severe hailstorm which occurred here in early summer. It has frequently bloomed with me, though my light soil is by no means the most favourable to its full development. It is quite hardy for the first two or three years after having been raised, but after flowering twice or thrice, it is likely to disappear like its near ally, *D. nudicaule*. This peculiarity, however, need not hinder its cultivation, as it is easily raised from seed, which sown early in spring gives strong plants the second season. With some extra care and attention it may even be flowered the first season. In a neighbouring garden, where the soil is more generous than my own, I have seen this plant growing to the height of 6 feet and upwards.—W. THOMPSON, Ipswich.

Begonias in the flower garden.—I send with this a few single *Begonias*, which, if they reach you fresh, may support my statement that these flowers are capital for beds out of doors, which does not seem to be generally known. The plants grow from 9 inches to 18 inches high, are sturdy, and withstand drenching rains and south-west gales. They hold their flowers quite erect for the most part, so that one has not to stoop or kneel to admire them, as is frequently stated to be the case. On the contrary, they make a splendid show from any

aspect. I do not care to have them too big for out-of-door work; 3 inches to 4 inches or $4\frac{1}{2}$ inches is quite enough. I do not care either for the plants 3 feet and 4 feet high, or the round pincushions with flowers sticking out at regular intervals, but a good free bushy habit that is not stiff, and yet does not want any sticks. Stakes, except for the double-flowered varieties, I never use, and have discarded every year varieties that require them. As regards out-of-door work, I think the *Begonia* has still a future before it, and I have in my mind's eye plants with erect flower-stalks, each with five to nine flowers upon it, as in *Laing's* variety *pendula*, only held up instead of hanging down.—W. SHIRLEY, Southwick, Fareham.

* * A beautiful gathering of richly coloured, well formed flowers.—ED.

The Willow Gentian (*Gentiana asclepiadea*).—Tourists may boast of the great beauty of *Gentiana lutea* as seen at home on the Alps, but in my opinion *G. asclepiadea* is far superior. A large mass in the rock garden at Kew, in which the blue and white varieties are cunningly blended, is one of the most attractive autumn plants we have seen for many years. Wherever there is a sufficiency of moisture this plant thrives well, and no better situation could be given than the edge of a stream in the woodland or the pleasure park. As a cut flower for vases nothing could be more graceful or beautiful. It ripens seed in large quantities, and if the ground near be kept clear of weeds it will sow itself and increase with great rapidity, the seedlings flowering the second year.

The Viper's Bugloss (*Echium vulgare*).—I wish "J. C. B." could see this native Borage-wort as it luxuriates wild on the shores of the Murroe at Wicklow, where it forms masses of the most exquisite blue colour quite near to the sea. So beautiful is this plant and the Horned Poppy (*Glaucium*), that some gardening friends of mine have gathered seeds and introduced both of these beautiful shore weeds to their garden. The *Echium* has been a great success as naturalised on the grassy lawn near the entrance gate within sight of the public road. It is perfect as seen fresh and flowering freely among the Grass, and of the numerous visitors and passers-by who see it as thus grown but few ever suspect that it is a wild plant, seeing that it is really more distinct and effective than many exotic ones. As seen wild on the short sward of a fully exposed and sandy shore this plant is very beautiful. The Oyster Plant (*Mertensia maritima*) is rarely found in the same locality.—F. W. BURBIDGE.

Nerine Fothergilli.—This fine autumn and winter flowering plant is grown very largely at Hatfield by Mr. Norman. Calling there early in August, I saw a large number of pots of it lying on their sides in a long tier, the pots two and three deep under the side of a long house running east to west. Small glass lights were laid against them to prevent rain falling upon them, but through which the rays of the sun fell with scorching effect. The bulbs in the pots are very fine; some have three and four large offsets. There had been nothing like repotting for three or four years, and on turning one of the plants out it was seen that the pot was half full of drainage, and the soil it was in simply a mixture of loam and sand. Here the plants will remain until they show signs of throwing up their flower-stems, when they will be cleaned over and placed in a cold frame. The bulb must have a rich supply of juices stored up within it to bear such rough treatment, but it answers, and it seems to coincide entirely with the nature of the plant.—R. D.

Pear Jargonelle.—I was greatly interested in the articles in your paper last autumn on Apples and Pears. I have now pleasure in sending you a few Jargonelle Pears from an old tree growing almost in the centre of the city here. The bole girths 6 feet 5 inches at 5 feet from the ground where five branches start from it, one of which girths 3 feet 8 inches, the other four being of similar size; the tree is from 45 feet to 50 feet high. The fruit is not perhaps of exhibition size and finish, but you will perhaps give your opinion about the quality

and flavour. On our last market day I gave a few fruits to one of our market gardeners, who grows a Jargonelle at the east end of his house and trains some of the branches round to the south and north fronts; consequently he has the advantage of the three aspects and produces large-sized fruit. When he tasted the specimens I had given him he could scarcely believe them to be the Jargonelle. Are there two varieties under the same name, or is the difference entirely caused by soil, situation, and age?—JOHN CHADWICK, York.

* * Flavour is greatly influenced by soil and situation. The Pears sent were somewhat small, but of excellent flavour.—ED.

Clematis Jackmanni alba.—Three years ago I obtained a couple of plants of this novelty, and so far have not been rewarded by a flower, although common purple *C. Jackmanni*, long since planted, is now blooming freely. *C. Jackmanni alba* seems a slow grower until it becomes well established. The nurseryman who supplied me with plants of it told me not to form or express any opinion as to its merits until I had had it planted a couple of years. I was careful to give my specimens a good position on a sunny wall with a western exposure, and yet until this year neither of the plants grew much. This season, however, there is a change. One plant has died and the other is now growing rampantly, and is, I see, now freely set with flower buds. Like "J. C. B." (p. 148), I shall be very glad to have the opinions of those who have succeeded in growing and flowering *C. Jackmanni alba*. So far I can only speak of its habit and rate of growth, and should be inclined to vote it slow and shy as compared with the purple-blossomed type. Were it otherwise I think plants in pots or tubs, or at least cut flowers, would have been far more often seen exhibited at the London floral exhibitions.—F. W. BURBIDGE.

— I fear the experience of "J. C. B." with the above plant is similar to that of many others. We have a plant upon the pillar of a summer house, and opposite to it is one of *C. Jackmanni*. Both have made an equal amount of growth; one is covered with flowers, the other, the white-flowered variety, has none, and shows no signs of producing any. But it is a young plant and I should have hesitated to condemn it had I not observed the same thing in other places, and made inquiries as to this so-called white *C. Jackmanni*. No one whom I have asked has ever accorded the plant praise; some have called it a delusion, and one nurseryman who had bought in a large stock of it considered he had been defrauded, for a few of the plants were sold, the worthlessness of the variety was discovered, and the rest (there were a great number) remained on hand and were disposed of as gratis plants to sundry customers. To merit its name it should be as free-blooming as *C. Jackmanni* and produce white flowers. It does neither, for it is shy of flowering, and the flowers when they do appear are of a washed-out mauve hue—at least all those I have seen were, and my ideas of them were formed from seeing plants in widely separated gardens. Yet and apparently in direct contradiction to all this is the beautifully executed plate of *Clematis Jackmanni alba*, which appeared in *THE GARDEN*, February 16, 1884 (p. 126, Vol. XXV.). As there figured and described it would be considered one of the most valuable additions to this large, varied, and beautiful family, but all the experience that I can gather is confirmatory of the doubt expressed by "J. C. B." That the failure of this *Clematis* to come up to what was claimed for it has been pretty general may be assumed from the fact that under any conditions it is not often seen; whereas, had the opposite been the case, having regard to the period that has elapsed since its appearance, surely we should have seen or heard something of fine plants had they been in existence. Perhaps some have adopted a special mode of treatment with successful results; if so, I hope they will respond to "J. C. B.'s" appeal and give their experience; but whatever is forthcoming, I hope now that the question has been raised, it may be settled whether this so-called *C. Jackmanni alba* is or is not worthy of the name it bears.—A. H.

TREES AND SHRUBS.

THE SCOTCH FIR.

(PINUS SYLVESTRIS.)

INDIGENOUS to North Britain, where, at one time, hundreds of square miles of hill and dale north of the Grampians were covered with this tree, and abundantly planted throughout the kingdom, the Scotch Fir is too well known to need description. It may still be seen in its original beauty in the forests of Aberdeenshire, Inverness, and Perth, clothing the mountain side and glen, and yielding excellent timber of large dimensions, little if at all inferior to

more equable climate of Great Britain. Loudon in his remarks upon the economic value of the timber, says :—

The facility with which it is worked occasions its employment in joinery and house carpentry almost to the exclusion of every other kind of timber wherever it can be procured. It is at once straight, light, and stiff, and consequently peculiarly fitted for girders, joists, and rafters, which may be made of smaller dimensions of this timber than any other. In point of durability, if it is kept dry, it equals the Oak, more especially if it has been of slow growth and is resinous. The Larch, its greatest rival, of late years has been most extensively planted, and certainly for use in a comparatively young state, it is preferred in England; but then it is questionable if the soil as well

great age, now beautifying our parks and giving the artist's finishing touch to our best arboreal scenery throughout England. The fine old tree to which the accompanying engraving does justice is now standing in the grounds of Mount Edgcumbe, in Devonshire, one of the warmest and most delightful spots in the west of England.

Others equally grand are plentiful much nearer London, as observant travellers in the home and southern counties can testify. Only the other day I was much struck by the immense trunks and grotesque forms of several trees most carefully preserved and tended in the grounds at Farnborough Hill, the beautiful home of the Empress Eugénie, also by the scores of trees on either side of the road leading from the South Western Railway Station towards Aldershot. This at one time must have formed one of the most perfect avenues in Hampshire; but, alas! some senseless vandal, once the owner of a portion of the property, cut down a great number of the finest specimens. Some very fine clumps, a furlong apart on either side the long straight road leading from Heckfield to Strathfieldsaye, reflect very great credit on the taste of the planter, Lord Rivers, I believe. These are comparatively young trees, but having got into the splendid loam which underlies the Heath-clad sandy peat, they will be the admiration of all passers when another century has passed away. I wish I could say a good word for the modern planter who has blocked these fine groups by covering the whole of this heath with young trees, now growing like Willows. Had the Farnborough vandal entered this out-of-taste copse he might have done the district good service.

Several varieties of the Scotch Pine are grown, but that called *Pinus horizontalis* is considered the most valuable timber tree. It is distinguished by its rapid and robust growth, by the horizontal or drooping direction of its branches, by its broad glaucous foliage, and by its producing cones but sparingly. This is supposed to be the true and original Highland Pine, and as such has been distributed all over temperate Europe. Soil, however, for there is no denying the fact that this tree enjoys a good root run, situation, and altitude, make a wonderful difference in the habit, contour, and colour of all Conifers; so much so, that unless all the varieties could be seen growing together, I should say here we have a distinction without a difference.

When planted in large masses or broad belts, the Scotch Pine, owing to its quick growth and hardy constitution, is a useful tree for forming screens and as a nurse for tender Conifers, which often grow freely enough when thoroughly established on our bleak hill-sides. As a single specimen on the lawn, like its rival the Larch, it is not despised, but for giving the painter's crowning touch it must be seen with its clean red stem, 30 feet to 50 feet in height, capped with glaucous grey branches rising out of, or backed by dense deciduous foliage. These clean-bolled stems, as a matter of course, are produced by close planting, drawing up, and self or natural pruning, whilst specimens of fantastic and weird form like the subject of this engraving and the roadside trees at Farnborough, have had room for the entire or partial development of their side branches.

W. COLEMAN.

Prunus triloba.—"J. C. F." asks where a healthy bush of this flowering Plum can be seen on its own roots in the open air. The only one I ever saw is in the Jardin des Plantes at Paris—a bushy mass beside a walk, and surrounded by numerous growths which I saw in April last flowering at 12 inches to



A Scotch Fir in Mount Edgcumbe Park, Devon. Engraved for THE GARDEN from a photograph sent by Robert Murray, Plymouth.

English Oak for dry building purposes. In this respect, however, it is, of course, inferior to the yellow deal of commerce, but highlanders assure us that the finest trees south of the Tweed do not produce timber equal to their own, and this inferiority in grain and durability is ascribed by Messrs. Veitch in their excellent work, "The Manual of the Coniferæ," to climatic causes, the long and severe winters of the north, succeeded by short and hot summers, giving the trees periods of rest and great activity of growth which they do not get in the

as the milder climate of the south has not something to do with the quality of English grown Scotch Fir, as all writers assert that the granitic formations so extensive in Scotland, independently of greater age, contain the elements most congenial to the Scotch Pine.

Ready and willing to yield the palm to the north, not only for immense clean trees, but also for economic quality, as lovers of picturesque trees and great planters of Conifers generally, we may point with pride to numbers of most beautiful specimens, many of them of

18 inches in height, but the taller and older flowering growths were 6 feet to 8 feet in height. At Cambridge the dwarf Almond on its own roots spears up through the unmown Grass, each slender shoot strung with its coral-tinted buds and Primula Rose-like flowers. Both are lovely on their own roots, but very miserable as grafted.—F. W. BURBIDGE.

NOTES FROM THE ARNOLD ARBORETUM.

A HANDSOME Japanese arborescent *Euonymus* received from the Flushing Nurseries is now covered with flowers. M. Maximowicz, to whom specimens were submitted last year, pronounced it to be the Japanese form of the widely distributed *E. europæa*—his var. *Hamiltoniana*—which is found also from Cashmere through the Himalayas, Mongolia, Northern China and Manchuria, and which has been described by botanists under a multitude of names. As it grows here it is a bushy tree 6 feet high. The flowers are small greenish white. According to Brandis ("Forest Flora of India"), whose figure represents a form with much narrower leaves than those of our Japanese plant, this variety is common in the forests of the outer Himalaya ranges up to 8500 feet, growing under favourable circumstances into a tree 30 feet to 35 feet high, with a short, straight trunk 4 feet to 5 feet round. The wood, he says, is beautifully white, compact and close grained, and used for making spoons. The Japanese plant is so hardy, it grows with such vigour, its foliage is so abundant and of so rich a green, that it promises to be a good addition to the number of small, hardy trees which can be successfully cultivated in this climate.

SPIRÆA CANTONIENSIS (*S. Reevesiana* of many gardens) is rarely seen in such great beauty in this climate as it has been this season. This plant suffers generally from cold, losing much of its wood, but this year the mild winter has been favourable to it, and both the single and the double-flowered varieties have bloomed in perfection. It is not only one of the very handsomest of all the *Spiræas* which produce their flowers in flat corymbs at the ends of short lateral branches of the year, being only surpassed in beauty of flowers, perhaps, by *S. Van Houttei*, but it has the additional merit of flowering considerably later than the other plants of its class. In climates less severe than that of New England, *Spiræa cantoniensis*, especially the single-flowered variety, is one of the most beautiful spring-flowering shrubs which can be planted in the garden.

COTONEASTER TOMENTOSA is a hardy shrub of good habit, agreeable foliage and rather pretty flowers, which are followed by showy fruit. This species grows to a height of 2 feet or 3 feet, with upright branches. The fruit is black. This is a widely distributed plant through the mountainous regions of Central and Southern Europe.

COTONEASTER LAXIFLORA is a more showy plant than the last, growing to a height of 4 feet or 5 feet. The flowers, which are pink, are succeeded by scarlet berries. This is certainly one of the most showy and desirable of the perfectly hardy species of this genus in the collection. The origin and relationship of this plant are rather obscure. It is possibly a form only of *C. vulgaris*, and it may have been brought originally from Siberia. According to Loudon ("Arboretum," ii., 871) it was first made known from plants raised in the garden of the Royal Horticultural Society at Chiswick, from seeds sent by Professor Jacquin in 1826. But whatever may be the origin and the native country of this plant, it well deserves a place in the garden.

SYRINGA VILLOSA has (now that the plants are thoroughly established and of large size) flowered here more abundantly than it ever has before. It is certainly an ornamental plant of the first-class, and one of the most important introductions of late years among hardy shrubs. It has, moreover, the merit of flowering late, and long after the flowers of other Lilacs with long-tubed corollas, with the exception of those of *Syringa Josikæa*, now believed to be a variety of our plant, have

faded. Two quite distinct varieties of *S. villosa* occur here. The first with narrower leaves and narrower panicles of lighter-coloured flowers than the second, which is of more vigorous habit, and promises to grow into a much larger plant. This last, which was raised from seed sent from Pekin by Dr. Bretschneider, flowers about ten days later than the first. It is worth noticing that the terminal bud, which is never developed in *S. vulgaris*, grows always in this species, generally producing a cluster of flowers, so that the branch may be terminated by three instead of by two panicles. The flowers of this species, unfortunately, have not an agreeable perfume, the slight odour which they emit resembling that of the flowers of the Privet, and therefore rather disagreeable.

VACCINIUM ERYTHROCARPON, one of the Bearberries of the Southern Alleghanies, is beautifully in flower. It is a tall, rather slender, divergently-branching, graceful shrub, growing sometimes in the Carolina Mountains to a height of 8 feet or 10 feet. The fruit, which, before it is quite ripe, is scarlet (whence the inappropriate name), becomes at maturity deep shining black in colour, and is then much more juicy than the fruit of any other species of *Vaccinium*. The flavour, however, is insipid, and the fruit is nowhere greatly esteemed, except by bears, who, when it is ripe, resort to the high mountain-tops, where this plant often covers extensive areas, for the purpose of feasting upon it. *V. erythrocarpon* is not a very easy plant to manage in cultivation. Perhaps it is not quite hardy here, although it now seems well established and to promise well for the future.

ROSA MULTIFLORA is certainly one of the most beautiful of the Japanese plants cultivated in our gardens, and it is a matter of surprise that the natural single form is so rarely seen and so little known. The origin, in a large part at least, of the so-called Polyantha Roses, none of its descendants compare in beauty with the plant which Thunberg first made known to science a century ago. This is a stout bush with long, robust stems, arching above the middle, growing to a height of 8 feet or 10 feet and forming a broad mass of pleasant green foliage, 10 feet or 12 feet through. The stems are round, smooth, bright green, and armed with remote, broad, recurved spines, and terminated by great racemes, 12 in. to 15 in. long by 8 in. or 10 in. broad, of flowers the size of a shilling, the pure white petals contrasting charmingly with the golden stamens. So abundant are the flowers that the plants at this season are completely hidden by them, and as all the flowers in each raceme do not open at once, but gradually, a couple of weeks often elapsing between the opening of the first and the last, the plants are in flower for a long time. There are two forms here. One of them flowers ten days before the other; this is a less robust plant than the other, with much smaller flowers, and generally a less desirable subject for cultivation. *Rosa multiflora* should be planted in rich soil, where it will not be crowded by other plants, and where it can have sufficient room to grow naturally and spread out its branches in all directions. It is not easy to imagine a more beautiful object than a well established specimen, planted in this way, when it is in flower. The fruit, which is hardly larger than a pea, is produced in the greatest profusion, and is rather ornamental, remaining upon the plants until the appearance of the leaves the following spring.

THE ARBORETUM is indebted to Max Leichtlin for this plant, who sent seeds here several years ago. It has been somewhat distributed from the Arboretum among American collections, but it is hardly known yet or properly appreciated.—*Garden and Forest.*

Poplars losing their leaves.—I have a house here one-third of a mile off and overlooking the sea, and I have planted an acre or two of wood, and for the seaside and a rude climate the trees are doing well. I have planted some Evergreens, Ilex, Elm, Mountain Ash, Oak, Sycamore, and a good many fast growing Poplars for shelter. The last are doing very well, but some of them shed their leaves in a curious way. I do not remember

about 1887, but certainly last year and this year the leaves were and are gone by the 10th of August. Can any of the readers of THE GARDEN account for this? Is it climate, is it soil, or is it a peculiarity of the species? I send specimens of the leaves that die early and of those that go on like the other trees. I see that the Mountain Ash, Sycamore, and Elm get very scorched and dried up at this time. Will these trees as time goes on recover their strength—that is, when the roots get deeper? They suffer, I think, for want of the double digging.—F. L. LAMPSON, *New Haven Court, Cromer.*

WHAT IS A SYCAMORE?

IT may be worth while to explain what is the right use of the name Sycamore, and to trace the steps by which it has come to be applied to three entirely different trees—*Ficus sycamorus*, *Acer Pseudo-platanus* and *Platanus occidentalis*.

Not the second, but the first of these is the "true Sycamore." It is a tree of the Fig family, very common in Palestine, Egypt, and Arabia, where it grows to a great height, extends its branches over a wide area, and is much prized for the shade it affords. Its Figs are sweet and delicate, although it is not the species commonly cultivated for fruit. Its wood is light, but very durable, and was largely employed in ancient times. The mummy cases of the Egyptians, and those wonderful sculptures in the round which have been found in the tombs of their earliest dynasties, were made of it. The name Sycamore is a combination of the two Greek words, Sykon, a Fig, and Moron, a Black Mulberry, and emphasises the fact that the leaves of this Fig tree resemble those of a Mulberry. This, then, is the *Sycamorus* of the Romans, the *Sykomoros* of the Greeks, the Sycamore of the Bible, the "true Sycamore" for all time. The most famous specimen now existing is perhaps that one not far from Cairo, which is believed to be more than 2000 years old, and is pointed out to travellers as the tree under which the Virgin and Child reposed during the flight into Egypt.

Acer Pseudo-platanus is a species of Maple. Although commonly called in England simply the Sycamore, it should be called the Sycamore Maple, the qualifying word merely explaining the likeness of its leaves to those of the true Sycamore. While it is a native of the continent of Europe, and is found growing wild in many places there, especially in Germany, Austria, Switzerland and Italy, the first mention of it as growing on British soil is in Turner's "Herbal," printed in 1551, and all subsequent writers either deny or question the fact that it is indigenous to that soil. Nor is it a "worthless" tree, for its wood is much used in the delicate work of the makers of musical instruments, as well as for many other purposes. Pliny makes especial mention of three species of Maple among many which he believed to exist. One of these is undoubtedly the Sycamore Maple, and it seems to be the Maple mentioned by Virgil, as he speaks of the stature and strength of the tree and the durability of its wood. The confusion of its identity with that of the true Sycamore must have begun very long ago, for Evelyn, in the seventeenth century, mentions the fact that religious persons had then long been accustomed to plant the Sycamore Maple near their homes in the mistaken belief that it was the Sycamore into which Zacharias climbed to see the Saviour pass. For the same reason, its significance in old treatises on the language of flowers is "Curiosity." This tree has been much planted of late years in America, but is never called the Sycamore—always the Sycamore Maple.

Platanus occidentalis is the principal American representative of *Platanus orientalis*—the Plane tree of modern Europe and of ancient writers. In Europe the name Sycamore is never given to a Plane tree, but in America it seems to have been thus applied from early times, for the younger Michaux, writing early in the century, cites it as an accepted name, others being Buttonwood, Cotton-tree, and Water Beech. According to him, Plane trees were called Sycamores only in the Western

States; but now-a-days, at all events, they are so called in many eastern districts. The fact appears to be that the English, who had mis-called a Maple because of its striking, if superficial, resemblance to the true Sycamore, similarly mis-called the *Platanus occidentalis*, when they emigrated to America, because of its resemblance to the Maple they had left at home. The right name for the western as for the eastern *Platanus* is the Plane tree; but Buttonwood is a perfectly legitimate, and, indeed, excellent name, as it has not been applied to any other kind of tree, and is picturesquely descriptive of the fruit of the Plane. Water Beech is, of course, a patent misnomer, and Cotton-tree is not appropriate, and leads to confusion with Cottonwood, a species of Poplar.

Classic writers constantly refer to the Plane tree, and it was one of the most highly-prized trees of the more temperate parts of the Orient. On a Plane tree in Phrygia Marsyas was hung to be flayed by Apollo. Under a grove of giant Planes on an island off the Lacedemonian coast the youth of Sparta met for athletic exercises, and Pausanias mentions a Plane in Arcadia which was then said to be 1300 years old, and to have been planted by Menelaus. But the most famous Plane tree of antiquity was, perhaps, the one in Lycia, which so delighted Xerxes by its size and beauty that he caused it to be encircled with a collar of gold and delayed a whole day beneath its shade—a fact to which contemporary critics are said to have largely attributed the defeat of his expedition. The so-called "Seven Brothers" are seven huge and magnificent Planes which stand on the shores of the Bosphorus, as they stood when, in 1096, Godfrey de Bouillon and his Crusaders encamped in their vicinity, and are estimated to be at least 1500 years old. The most famous Plane of our western world, if we may associate renowns so dissimilar in duration, is the one which stood and perhaps still stands on an island in the Ohio River near the mouth of the Muskingum, which was measured by Washington in his early days and again by Michaux twenty years later, when its circumference was found to have but slightly increased and to be 40 feet 4 inches at 5 feet from the ground. It is a pigmy, however, in comparison with one of the Seven Brothers, which, it is stated, measures 150 feet.

In Scotland, we are told, the Sycamore Maple is frequently called the Plane tree, and thus the cycle of confusion is complete.

The name we have been discussing is sometimes spelled Sycamore and sometimes Sycomore. Both spellings are permissible, but although the use of the *o* seems more logical, in view of the derivation from Sykon, the *a* is preferred by the best modern English authorities. Most of them do not associate differences in spelling with different significations, but we have found it stated in one horticultural dictionary that the *o* should be used in writing of the true Sycamore and the *a* in writing of the Sycamore Maple. In modern foreign tongues the *o* is universally employed, and in colloquial French we find the same mistake as in colloquial English—Sycomore being constantly used in the stead of Erable faux-platane—Sycamore Maple.—*Garden and Forest*.

THE HEART-LEAVED OR NAPLES ALDER.

(*ALNUS CORDIFOLIA*.)

IF only for its distinct habit of growth, smooth and shining foliage, and rather unusual light-coloured bark, the Heart-leaved or Naples Alder is well worthy of a far greater share of attention than it has yet received at the hands of planters, in this country at least. In it we have, moreover, a good addition to the few trees that are really suitable for town planting, for the Alder in question grows with great vigour and retains much of its fresh springtide greenness when placed in very smoky and impure localities. Of hardy constitution and unusually strong growth, the Heart-leaved Alder would seem to defy in a most peculiar and particularly pleasing manner the sooty emanations from the hundreds of stacks and chimneys to which in two at least of our largest centres of industry it is

almost constantly subjected. Everyone who has seen even a medium-sized tree of the Heart-leaved Alder votes in favour of it over our commonly cultivated *A. glutinosa*, the flowers being more showy, the leaves of handsome shape and finer texture, while it is equally as hardy and as easy to cultivate. Early in spring, by mid-February sometimes, the numerous male catkins of a beautiful yellowish-green colour impart to the tree a most distinct and decidedly ornamental appearance; while when the fresh young heart-shaped leaves become fully developed, the tree is rendered very distinct.

Like our common Alder, the Naples tree delights to grow in marshy ground, or, at least, where abundance of moisture is usually present in the soil. It does not dislike shade; on the contrary, it thrives perfectly well where an unbroken leaf canopy is at all times present. But when planted under more favourable conditions, such as along the outskirts of a wood, and for which it is peculiarly well suited, it grows with great freedom, the annual shoots produced being much stronger than in our commonly grown tree when placed under similar conditions.

Few, indeed, are the specimens of this distinct Alder that are to be seen even in collections of choice trees and shrubs, and this may partly be accounted for by the scarcity of the tree in our nurseries, and by its being but little known. It bears seed freely, the cone-like female catkins being larger and more showy than are those of the common Alder.

To anyone in search of a rare tree of great beauty, perfectly hardy, and a rapid grower, I would recommend a plant of the Heart-leaved or Naples Alder being assigned a dampish spot in good black loam in any part of the grounds, be it shaded, fully exposed, or high or low-lying.

A. D. WEBSTER.

FLOWER GARDEN.

NEW HARDY HYBRID GLADIOLI.

THE summer now drawing to a close has been exceedingly favourable to the growth and perfect development of the flowers of these beautiful hybrids, and in relative merit to the new varieties of former years the nine that have bloomed with me out of the set of ten sent out towards end of last year by M. Lemoine, of Nancy, have shown a marked improvement in perfection of form and substance of flower, and the lovely variety Venus de Milo I think bears quite as fine a flower as any of the fine hybrids of *G. gandavensis* raised by the late M. Souchet, of Fontainebleau, with the great additional merit of being perfectly hardy and apparently absolutely free from liability to any disease whatever.

The nine varieties came into bloom in the following order:—

CASTELAR opened first flower on July 18. It is a medium sized flower of good form and well opened, of a not over vigorous habit of growth. The colour is a deep salmon clearly streaked and flamed with yellow, and the two lower petals are deeply and clearly blotched with velvety carmine, tipped with yellow.

LAMARK, opened first flower on July 20, is a variety of medium height with rather large flowers of a light shade of orange colour flaked with yellow and deeply blotched with carmine on the lower petals.

DUGUESCLIN, opened first flower on July 25, is a vigorous growing variety with a branching flower-spike and large flowers of a deep shade of salmon colour somewhat irregularly flaked with white. The two lower petals are distinctly blotched with carmine.

PACTOLE, opened first flower on July 25, is a variety of rather dwarf habit of growth with medium sized flowers of a most pleasing shade of

canary-yellow, which has a tinge of green through it when the flowers open, which, however, disappears after the first day or two. The lower petals are distinctly blotched with carmine. A very pretty variety.

AMIRAL KRANZ, opened first flower on July 31, is a very pretty variety with large well opened flowers of a pleasing shade of creamy white very faintly streaked with carmine on the upper petals, and deeply blotched with velvety crimson on the two lower ones, shaded with yellow at their outer edge.

DARWIN opened first bloom on July 31. A variety of rather slender habit of growth with medium sized flowers of a rather dull shade of light red; the two lower petals are distinctly blotched with velvety carmine, with a broad and distinct band of clear yellow on the outer edge of each petal.

MONSIEUR LEVEQUE opened first bloom on August 1. A variety of vigorous habit of growth with well-opened medium-sized flowers of a deep and most uncommon shade of rosy carmine very faintly streaked with yellow on the lower petals. The flowers of this fine variety open well together on the spike and all look one way.

VENUS DE MILO opened first bloom on August 5. A most lovely variety of medium height with branching flower-spike, with large well-expanded flowers of good shape and the finest substance, of a beautiful shade of creamy white faintly marked on the lower petals with a carmine streak. This is by far the finest flower yet obtained among these hybrids.

LOUIS THIBAUT opened the first flower on August 7. A variety of medium height and moderate vigour of growth with good sized flowers of a most pleasing shade of rich rosy purple, which may be described as an intensification of that of the fine older variety Obélisque, but the new-comer has a much larger flower and will be an acquisition to any collection.

ETOILE POLAIRE.—Although this variety failed to bloom for me, I have received a spike of it from M. Lemoine, and find it to be a small flower of fairly good shape, with the two lower petals of a deep shade of chrome yellow, with a distinctly marked blotch of deep carmine in the centre of each. The rest of the flower is of a dull and rather brownish shade of yellow. Altogether a variety of but little merit.

At conclusion of my notes on last year's series of these hybrids on page 394 of Vol. XXXIV. of THE GARDEN, I mentioned the advent of a new race of hybrids obtained by M. Lemoine and Herr Otto Fröbel, of Zurich, by fertilising the flowers of the fine scarlet-flowered and hardy species known as *G. Saundersi superbus* with the pollen of *G. gandavensis*. The first two hybrids of this new race were sent to me for trial by their raisers towards end of last year and have both bloomed beautifully in my garden, and I am happy to be able to speak of them in terms of almost unqualified admiration as decidedly great acquisitions to our gardens and probably the forerunners of many beauties to follow.

M. Lemoine has named his hybrid

GLADIOLUS NANCEIANUS PRESIDENT CARNOT, and it is indeed a most beautiful flower of a rather slender and graceful habit of growth, and apparently slow of increase, as a full-sized bulb only produced a single stem. The flowers are of great size and the most perfect form, admirably expanded and looking you straight in the face. Their colour is a most lovely shade of deep rose flaked with carmine, reminding one of Souchet's beautiful old hybrid of *gandavensis* named Achille, but about double its size. The lower petals are distinctly marked with a large pointed creamy blotch with a carmine centre. Altogether a most beautiful variety, which every lover of these charming hardy flowers should endeavour to add to his collection as soon as possible.

Herr Fröbel names his hybrid

GLADIOLUS TURICENSIS. This is a variety of much more vigorous growth than *G. Nanceianus*, the three bulbs sent me though much smaller in size having sent up six stems, either four or five of which will bloom. It may therefore be expected to soon become very plentiful and easily obtainable at a moderate price. The flower is a fine, large, well-expanded one with quite abnormally large upper lateral petals of a most pleasing shade of clear light red very faintly streaked with carmine. The inner half of the two lower petals is distinctly blotched with pure white. It is altogether a distinct and lovely variety, but has not quite so perfectly shaped a flower as *G. Nanceianus* President Carnot from the same parentage.

W. E. GUMBLETON.

CARNATIONS AND PICOTEES IN 1889.

ONLY in one or two cases is there any complaint to make of the behaviour of these flowers when growing in the open air. The high temperature that prevailed during the month of May brought on the growth of plants that were not well established rather faster than was desirable. As a consequence there has been some amount of weakness in the flower-stems, and consequently a less number of flowers than was produced by plants whose roots had taken a greater hold of the soil. Fortunately, the bulk of my stock of choice kinds was planted out in mild weather at the end of January. With the behaviour of these I have every reason to be satisfied; most of the varieties have flowered exceedingly well and have produced good Grass for layers, but the majority of the sorts were in flower quite a fortnight earlier than usual. The scarlet and crimson bizarres and scarlet and rose flake varieties have furnished the most flowers and the most vigorous growth. Several varieties of Picotees leave nothing to be desired, seeing that the flowers have not been shaded from the sun nor protected from storms of rain. The purple bizarres and purple flakes have also behaved in the most satisfactory manner, Major Thurlow, p.f., being exceptionally good. The Picotees are not only general favourites with the public, but many of them have sufficient constitutional vigour to do well when planted out, the most satisfactory in my collection in that respect being Her Majesty, Nellie, Clara Penson, and Olive Mary.

Turning to the self Carnations, or what are perhaps better known as border kinds, there is no doubt but that there is a long and bright future before them. There is an evident tendency in the public taste to go back to the old garden flowers for all that is wanted to furnish a display in the beds and borders in the open air, and it would, I think, be hard to find another class of flowers so useful and beautiful as the self Carnations. The number of distinct colours is now so large, that one has only to make a suitable choice and there is no longer any difficulty in securing masses of colour, and, what is more, many of the varieties last in bloom for a considerable time. At the present time (Aug. 10) I have several plants of that fiery red variety, Norma, that have been in bloom since the beginning of July, and there is every indication that the plants will continue in flower for another month. Near to them are some plants of H. P. Milner (white), which began to bloom at the same time, and which promise to remain in that condition for several weeks. Those who know this variety will recognise it as one of great beauty, especially for the fine form and pure colour of the flowers. Surely for a white hardy flower no one could desire a better. Of crimson selfs there are several good forms, but perhaps Emperor is as good as any, as, in addition to flowering well, it makes grass freely, which is an indispensable quality in a border Carnation. There are several varieties with pink or lilac-pink-coloured flowers. At present there is a great promise of a rich harvest of seed. Those who allowed the seed-pods of the first opened flowers to remain, and still allow them to do so, will be rewarded later on with some well-filled pods of seed. I must, however, warn the inexperienced reader not to collect the seed-pods before they are ripe. They should be allowed to remain upon the plant

until the point of the seed-vessel begins to open, and then the seeds will be well matured.

J. C. CLARKE.

WATERSIDE WILD FLOWERS.

THE most conspicuous and beautiful wild flower now in bloom is the purple Loosestrife (*Lythrum salicaria*), which freely adorns our Suffolk streams. There are some very fine specimens, quite bushes, 4 feet high and 1 yard through. I find even among the wild plants there is a considerable variation in form and colour, but especially in colour. Although the blooms of the common kind are of rather a dull purple, there are some fine rosy-coloured varieties nearly as bright and as densely flowered as the *Lythrum roseum superbum* of gardens. Though a water-loving plant, this Loosestrife is quite at home in the border, whilst gardens which have a lake or stream in the grounds afford a fine opportunity for growing this plant in a bold and effective way. The Flowering Rush (*Butomus umbellatus*) is in fine form. It luxuriates in the rich mud beneath a foot of water, and its fine heads of flowers are thrown well up above the foliage, and last long in beauty. It is a very handsome native plant, and should be introduced into artificial or other water in an open sunny position. The fine masses of the Arrowhead (*Sagittaria sagittifolia*) are beautiful in foliage as well as in flower, the form of the arrow-shaped leaves being so distinct. The flower-spikes rise just above the leaves, the flowers appearing in whorls of three, whilst each blossom consists of three white petals which spread out flat and encircle the purple cushion of stamens. A double form of this exists in some gardens, and it is more long-lasting than the type, but both are aquatic plants of merit and beauty. Even the stagnant pool would have a charm if, instead of being sheeted in Duckweed or slime, it had a few groups of hardy aquatic plants to spread out fine foliage and send up handsome flowers. The Water Plantain (*Alisma Plantago*) is a common plant generally, but, nevertheless, it is of fine form and graceful habit. Its tufts of broad leaves stand erect and stately, and from amongst them rise tall branching panicles, sometimes 4 feet high, of delicate pink flowers. At present, by the streamside, there are large masses of this plant with from twenty to thirty tall flower-spikes, and their effect is very graceful. *Epilobium hirsutum* is good in association with the Loosestrife. The British Willow Herbs, or *Epilobiums*, generally are poor weedy things, but *E. angustifolium* and *E. hirsutum* are both free, vigorous, and fine flowering kinds, and where it does not occur naturally, *E. hirsutum* should certainly be introduced to the water margins, where it will give no further trouble, but annually charm us with its fine heads of rosy flowers. The best of all Forget-me-nots, *Myosotis palustris*, is still as fresh as it was two months ago. Whilst recently admiring a particularly fine mass I noticed a straggling shoot with flowers of a paler blue, and nearly twice the size of those of the typical form. Unable to obtain roots with this shoot, I took all the side shoots and inserted them as cuttings; for, although the common type is a useful and beautiful garden plant, this fine form, if perpetuated, will be more so. The water Forget-me-not may be recommended as a flower for cutting, as in that state it remains fresh for a long time. The Water Lily and the yellow Nuphar wind up the list of plants which now adorn the margins or vary the surface of the running streams.

A. H.

Lilium Leichtlini.—This Lily flowers with us about the same time as *L. chalcedonicum*, and just a little earlier than the Tiger Lily and its varieties. Max Leichtlin's Lily is a very beautiful and distinct species, for when in flower it cannot be confused with any other, and few Lilies are so light and elegant in appearance. The bulb is small and globose, yet somewhat flattened at the top, as in *L. Batemannae*, for which, when quite dormant, it may be sometimes taken; but *L. Leichtlini* starts into growth much earlier than the other, and the young shoot is always remarkably slender. Dur-

ing the winter it is often imported into this country from Japan, together with *L. auratum*, *L. speciosum*, *L. Krameri*, *L. Batemannae*, *L. elegans*, *L. odorum*, and others. Though the bulbs are hermetically enclosed in balls of clay, those of *L. Leichtlini* often perish on the voyage, and being imported in limited numbers compared with many others, this Lily does not appear likely to become common. Like nearly all the members of the genus, it is somewhat variable in the colouring of the flower, which is usually of a yellowish-straw or sometimes pale lemon, and profusely sprinkled with small reddish dots; the exterior of the bloom is tinged with purple. This Lily seems to succeed best in rather open sandy soil, well drained, and so situated that it is somewhat shaded from the full rays of the sun. A very peculiar feature common to *L. Leichtlini* is, that at times instead of pushing up the flower-stem direct from the bulb, it will make its way underground for some little distance and appear perhaps a foot, or even more, away. This peculiarity, which is by no means universal, occurs also to a considerable extent in the Indian *L. neilgherrense*; in fact, it is more marked in this last than in the other, and forms one drawback against cultivating it in pots.—H. P.

NOTES ON HARDY FLORISTS' FLOWERS.

THE CARNATION AND PICOTEE.—In continuation of the few remarks in THE GARDEN, August 10 (p. 128), it is important that the layering of the entire stock should be finished as soon as possible. We have completed the layering of the whole of those we grow under glass, but have not yet done any out of doors. We will, however, take the first chance to finish all that have to be layered outside. The method of procedure is to take a little of the surface soil from around the plants, and put down in its place an inch or more in depth of a mixture of equal parts fine loam, sand, and leaf-mould. The portion of stem on the tongue of the layer ought also to be cut clean off below the joint, taking the outer covering of the stem with it. This is done to allow the roots to push out at once from the base of the layer, and this they will do quite freely in the free sandy soil. If the weather continues dry it may be necessary to water them. I do not recommend the propagation of these border Carnations by cuttings; it can be much better done by layering. The cuttings have to be placed under close bell-glasses, and require almost daily attention to prevent their damping off. Nevertheless, it may be necessary to take cuttings of some growths that are too high up the stem to be brought down for layering. In that case it is best to choose a shaded position, or at least shaded for a few hours during the hottest part of the day. The cuttings must be cut clean through below a joint, and be planted firmly in 5-inch pots, using sandy soil as for layering. Cover them with bell-glasses, which ought to be removed for a few minutes every morning to wipe the damp off the inside of the glasses. They will produce roots in this way and sometimes make nice plants. A dozen cuttings may be put into one of these 5-inch pots, and they must be potted off singly into small pots when rooted.

THE TREE OR PERPETUAL FLOWERING CARNATIONS are in an important period of their growth, and ought some time during this month to be planted into the pots in which they are to flower. They do not require very large pots; those 6 inches or 7 inches diameter inside measure do as well as larger ones, and the plants are much better out of doors in open positions, where they will make much cleaner, sturdier growths than they do under glass. I use in the soil for these some fibrous peat. The following answers well: three parts loam, one fibrous peat, one leaf-mould, one sharp sand, with some broken up charcoal to keep the whole more porous. The plants will produce flowers in succession from the end of September all through the winter. The position of the plants during the short days of winter ought to be close to the glass roof, and the minimum temperature 50° to 55°.

HOLLYHOCKS are now in full beauty, and the plants are also clean and free from the peculiar

fungus (*Puccinia malvacearum*), which in some seasons does so much damage to the leaves. Flowering time is also a favourable opportunity to take cuttings. The Hollyhock is quite a hardy plant; indeed we have propagated no young plants during the summer to be wintered under glass, thinking we might get rid of the disease by leaving the old stools to take their chance out of doors. I am not sure that our immunity from the disease this season is entirely due to our system of letting the plants alone, but now that they are clean it may be as well to take cuttings again as usual. Some of them may be obtained from the base of the plants, others from eyes taken from any lateral growths up the stems. Some of these may be furnished with several eyes as well as flower-buds, but the entire lateral growth should be cut off close to the stem. Cut the eyes out with the stem of the leaf attached and also a portion of the stem of the lateral; plant them in small pots and place them in cold frames, or, what is better, a hotbed from which the bottom-heat is nearly gone. A strong bottom-heat would cause many of the eyes to rot off. The cuttings from the base of the plants may be taken off with a small portion of the old stem attached to their base. The lights of the frame must be kept rather close, and the cuttings should be shaded from hot sunshine. Remove the flowers as they fade, for they look unsightly, and the seeds forming in the pods will, if it is intended to save seeds from the plants, also be injured by the decaying petals. Hollyhock seed saved from the best double flowers will produce a very large proportion of blooms quite as good as those of the parents, and will not vary much from them in colour.

JAS. DOUGLAS.

African Marigolds.—Very fine indeed are the blooms of these this year. It is worthy of note that whilst from the Continent come many good novelties, yet none of the foreign African Marigolds can for one moment compete with the wonderfully fine forms found in this country. I have flowers each 12 inches round, and as densely double as the most exacting can desire. I only wish I had more of them, but seed last year was very poor in quality, and it was difficult to get any of it to grow. However, the strain which I have had for many years was saved, and that was something. To have good sound seed of African Marigolds it is needful to get the plants to bloom early. I raised as usual under glass, but owing to the thinness of the plants was able to transplant with a trowel instead of dibbling out. There are several shades of colour from lemon to rich deep orange.—A. D.

Pentstemons.—Just as the old plants, which stood so wonderfully unharmed through last winter, are going out of flower, the young ones put out in May are coming into bloom, so that Pentstemons will in that way give a long blooming season. These latter plants will flower profusely up to the end of October probably, for the duration depends chiefly upon the general character of the weather during that month. The more seedlings are grown, the more does one perceive the needlessness of troubling about named plants. Any variety, however fine in character, will certainly reproduce its kind through seed, with some greater variety also. The Pentstemon has too long been associated with dull colours, heavy scarlets, crimsons, maroons, purples, and thus many people have learned to dislike it. Given any good varied seed strain, the hues of colour will be found wonderfully diverse, and, if lighter hues be encouraged, to be exceedingly beautiful. One of the charms of seedling raising is that we never know exactly what will be the product, especially amongst mixed flowers, whilst if the strain be good, all good flowers will almost certainly result. Usually I find Pentstemons, even on our very stiff soil, to be fairly hardy, for even if the wood be killed back to the ground, the roots send up plenty of strong shoots early in the spring. Seed sown in a cool house or frame at the end of March gives plenty of strong seedling plants to put out about the end of May, and these will come into bloom in August and flower through the autumn, and if a little shortened back in the

winter to firm wood, will bloom early and very profusely in the summer. Some of the pale hues come out charmingly amidst the deeper colours, and these bright hues I have largely encouraged.—A. D.

THE BRONZE LEAF OF JAPAN.

(*RODGERSIA PODOPHYLLA*.)

This splendid plant is really a giant-leaved Saxifrage, and a native of Japan. When well grown in a deep rich border of peat and leaf-mould and duly sheltered from harsh winds, it forms one of the finest of all the exotic plants which are perfectly hardy in our northern climate. Its five great partite leaves each vary from 2 feet to 3 feet in diameter, and are of a rich ruddy bronzy tint with the peculiar rugose or shagreen-leather-like appearance, peculiar to the



Rodgersia podophylla and Bamboo. Engraved from THE GARDEN from a photograph by Greenwood Pim.

unfolding leaves of the Horse Chestnut in early spring. Such leaves, borne aloft on cylindrical stalks 2 feet to 3 feet in height, and the plants grouped naturally together as shown in our engraving, have a tropical-like aspect, especially when judiciously planted near to more slender grassy-leaved vegetation for the sake of contrast. The group now figured nestled at the foot of a colony of Bamboos near an old tank or well, and the result was a very happy one. Although grown as, and indeed most remarkable as a foliage plant, yet as seen at their best the plumose spikes of white *Spiræa*-like flowers are really very beautiful. The plant has long had a history and a name in Japanese gardens, whence it was introduced to the United States by Captain Rodgers of the American Navy, after whom it was named. The native name in Japan is *Yagurumaso*, and a very characteristic wood-

cut of it is given in vol. viii., tab. 27, of the celebrated work on the herbaceous plants of Japan, originally written by Pinouma Yokoussai, and republished by the editor, Tanaka Yosiwo, in 1874. This interesting work in twenty volumes contains woodcut figures with Latin names of nearly all the herbaceous perennials and annuals, wild or cultivated, in the gardens of Japan, and is well worth the perusal of those interested in the plants of that country. The illustration is from a photograph kindly sent by Mr. Greenwood Pim. It represents a specimen at least 5 feet in diameter which was growing in Mrs. Lawrenson's garden at Sutton, near Howth, Co. Dublin.

Dublin.

F. W. BURIDGE.

HARDY FUCHSIAS.

THERE is no denying the fact, that well grown hardy Fuchsias occupy a prominent position in the garden. Despite this, however, they are rarely grown to any extent in many large gardens. Strange as it may appear, the best example of the judicious utilisation of hardy Fuchsias that I ever saw was in Northumberland, within thirty miles of the border line. Here, not only beds and clumps of Fuchsias growing on the Grass by the side of woodland walks were to be seen, but also huge trees, some nearly 20 feet in height. True, it was within a mile of the sea-shore where these magnificent Fuchsias were growing, and further it must be admitted that those grown as standards were in sheltered positions among other shrubs and trees. The northern English winter had but little effect upon the Fuchsias, for they grew luxuriantly and produced their lovely flowers in great profusion annually. Those grown in beds and clumps on Grass, some of which it may not be uninteresting to state have been established for upwards of fifty years, are cut down every spring to within a very few inches of the ground. They then throw up vigorous shoots which flower abundantly. One year, by way of experiment, the growths were cut back halfway, and although the plants grew away from the point where cut back, they failed to bloom so profusely as when cut close to the ground.

It may be said that even in many parts of the midlands Fuchsias will not thrive satisfactorily. This, to a certain extent, I admit, but in doing so I must ask, Why? Simply because they are not given a fair start. It cannot be expected that a Fuchsia, even of the hardiest type, will thrive if thrust into the ground, and then left to shift for itself more than any other plant. If properly planted in a good loamy soil, and protected during the first winter or so by placing a layer of leaves or ashes over the crowns in autumn on the approach of frost, they will thrive well enough. This fact is corroborated by the splendid specimens seen in cottage and other old-fashioned gardens in all parts of the country. Many who have Fuchsias in the garden under their charge cut the shoots back in autumn, or rather as soon as they have dropped their leaves. This, however, is a mistake, as I have proved many a time. It is best, particularly in districts where severe frosts are experienced, to leave the cutting back until spring. The reason of this is obvious to all experienced in such matters.

In various parts of the Isle of Wight I have seen magnificent specimens of hardy Fuchsias. One cottager of my acquaintance there has a complete hedge of Fuchsias around his small, but always interesting garden. This, too, is not mutilated, as is often the case, but is allowed to grow in a free and natural style which, needless to say, adds considerably to its beauty. In Devonshire and various parts of Hampshire I have seen fine specimen Fuchsias on lawns where they have been growing for years. Cottage gardens in both of these counties, too, are particularly wealthy in Fuchsias.

But my present aim is to urge the more extensive use of hardy Fuchsias in garden decoration. None can say that a glaring mixture of colours, now too frequently found in many flower gardens, is equal even to a bed of common hardy Fuchsias. There

is a peculiar gracefulness about the Fuchsia, and when grown in masses the effect is charming. If planted judiciously on grassy plots by the side of walks, &c., most of the plants will quickly become established. When planted in beds other subjects can be mixed with them advantageously. For instance, I once saw, and believe it is there still, a large bed of Fuchsias planted with *Narcissus poeticus*. These bloomed profusely in spring, and by the time they were past and the foliage was decaying the Fuchsias had made sufficient growth to hide the yellow leaves of the *Narcissus* from sight.

F. Riccartoni with its bright red blossoms is undoubtedly one of the best and most useful kinds that can be grown. Rarely does it happen that this variety suffers much from frost, it being hardy in most parts of Great Britain. *Globosa* is a magnificent kind with beautiful richly coloured flowers. It is this variety which formed the huge specimens in the Northumberland garden referred to at the commencement of these notes. There are several other varieties, all more or less useful, which might be well given a place in the garden or utilised for the embellishment of woodland walks as above indicated. C. C.

FLOWER GARDEN NOTES.

A FEAST OF PHLOXES.—This is the most suitable term I can find to describe the grandeur of these plants at the present time. We have them in all colours, from deep purplish crimson to pure white, and of all heights, from 1 foot to 4 feet. All the varieties are equally free-blooming, but the taller, as a matter of course, look the most majestic, and at a distance are the most telling. Those of the dwarf section are, however, worthy to rank on an equality with them, so far as the furnishing of borders is concerned, as they are most suitable for the middle and front part of borders. The colours that produce the best general effect are white, rose, and crimson. Some of the fainter tints, which I should describe as faded whites, pinks, and purples, are good, but decided self colours are better because they are brighter in the flower border. As regards variety, when I first took to growing these plants, a collection of named kinds was purchased, but these proved to be no better (many not so good) as others raised from seed. There is always more enjoyment in raising one's own seedlings than in buying plants, especially when, as in this case, a bad variety is quite the exception. Cuttings of any favoured kinds will strike well now either under hand-lights or in warmth, and seed if sown at any time during the autumn will produce good flowering plants next August and September.

COLOUR BLENDING.—Though by no means an advocate of a haphazard arrangement in respect to colours, some of the finest pieces of colour blending I have seen have, to a certain extent, resulted from what may be called a chance mixture of plants, that is, other plants have sometimes had to be substituted instead of those it was at first intended to use. A case in point is that of a large bed here that is now in perfection, and which is planted thinly with yellow and blue (*Agathæa*) *Marguerites*, the entire groundwork consisting of the pink-flowered variegated *Geranium Manglesi*, the last named being used as a substitute for tuberous *Begonias*—rose and scarlet colours—the stock of which had become scarce—the best thing that could have happened, or we should not now have had such an unique piece of colouring. It should be noted that all the colours are as soft as possible, namely, light yellow, light blue, light pink, and light silvery foliage, with just sufficient green in it to show off the simple pink flowers to the best advantage. It only remains for me to add that the bed is edged with the green close-growing *Herniaria glabra*.

FUCHSIAS.—I have long advocated the use of these for the summer flower garden, and am pleased to observe that they are much more generally grown than formerly. If those who have not yet grown them in the summer flower garden could but see the use we make of them and how well they do here, I feel sure they would strive to do likewise.

As to the mode of arrangement, I am just as undecided as when first I began to plant them. They look grand in a pyramidal mass, either as a centre to a large bed surrounded by other plants, or in beds by themselves. I, however, prefer to arrange them in what may be termed standard form, that is, placing them thinly at regular intervals over either a central space of a large bed or over the entire bed, and filling in the bed with dwarfier plants that harmonise with the colours of the flowers of the Fuchsias. This plan admits of the full development of each plant, and the open space between each admits of the fullest display of the undergrowth plants, some of the most suitable for the purpose being the several kinds of *Violas*, white and lilac colours being most suitable for red-flowered Fuchsias, and those of a deep purple colour with light blue *Ageratum* for the white and rose. The partial shade that the Fuchsias afford is advantageous to the growth and continuous flowering of *Violas*. Probably some are deterred from using Fuchsias as bedding plants because of the labour their preparation involves, a notion that is more fancied than real. Old plants are best, and these can be wintered in any frost-proof shed or cellar, light or dark, and if potted early in March and afforded gentle warmth they will make grand plants for putting out at the end of May. Cuttings put in now and kept growing through the winter will make excellent plants for the outer lines of arrangements in pyramidal form. The best dark varieties are *Elegans* and *Charming*; and the best light, *Venus de Medici* and *Rose of Castile*.

ROCKERY OF SHRUBS.—The one in question is a modest affair, yet sufficiently extensive to show what might be done in the direction of having a rockery garden of shrubs only, and that looks equally as well in summer as in winter. The bank or knoll faces east and is of irregular height and width, being formed with what in native parlance is called "plum-pudding stone," owing to the various coloured gravel stones of which it consists. In forming the mound these stones were placed in irregular wall form, and there being a considerable weight of soil to be kept up, the wall had to be somewhat more massive than as was thought at the time the well-doing of the plants with which it was to be furnished would warrant. The precaution, however, was taken to have plenty of good soil pounded into the bank as the boulders were placed, and the wisdom of this is now visible in the perfection of growth of all the plants that at present adorn the rockwork—in fact, nearly completely cover the stones. The most telling plants are *Cotoneaster microphylla*, that naturally grows pendent and close, and this, together with its dark glossy leaves and coral berries, makes it the perfection of a plant for a shrubby rockwork. A plant of a very different character we have in the trailing *Vinca elegantissima*—variegated *Periwinkle*. This is allowed to ramble amongst and over the *Cotoneaster*, and the contrasting colours of the two plants produce a charming effect. The glaucous or bright grey-foliaged *Retinospora squarrosa* is also amongst the most effective, and as the plant bears cutting well, it can either be made to grow flat-wise over the boulders, upright, or spreading. *Retinospora filifera* has a naturally drooping and spreading habit, and being of rapid growth it should be allowed plenty of space. All the *Euonymuses* are excellent plants for producing a permanent effect, the small-foliaged variegated variety *radicans* clinging to stone with all the tenacity of Ivy. The foregoing are the best for clothing the rockwork, and the following are excellent either for grouping or planting in single file as upright growers: The gold and silver-foliaged *Retinosporas*, *Cupressus Lawsoni*, *argentea*, and *glauca*, also *Cupressus erecta viridis*, variegated *Box*, *Golden Yew*, and *Yucca gloriosa*, *filamentosa*, and *recurva*. W. W.

SHORT NOTES.—FLOWER.

Carnations for window boxes.—With reference to Canon Ellacombe's note on Carnations for window boxes in *THE GARDEN*, August 17, (p. 161), will any reader who is acquainted with Switzerland and Italy tell us how these plants are grown during the

winter, and how generally? I believe they are also grown freely in Spain. The selfs and harmonious colours are of course far more beautiful to many people than the florists' kinds.—R.

Evergreen Flax (*Linum arboreum*).—This has been in bloom since the spring, and even now has a few of its golden coloured flowers. Sturdy plants struck from cuttings quickly make a dense bushy growth, far different from those kept in pots until half their strength has gone.

White Burnet (*Sanguisorba decedra*).—This is a good garden plant, reminding one of a *Spiræa* at first sight, and having the advantage of a strong constitution. It will grow anywhere, and produces in summer white bunches of *Metrosideros*-like flowers, but much smaller than the fluffy inflorescence of that plant. A plant was blooming recently at Broxbourne.

WHITE CARNATIONS.

I AM very glad to be able to state that fine white Carnations are multiplying fast, though it would, perhaps, be invidious to say which raiser has the best. At the meeting of the Carnation and Picotee Union, recently held at Oxford, where the fancy and self Carnations were very largely and brilliantly represented, I think the highest place among the white selfs was generally accorded to Emma Lakin, a grand flower of great purity of colour, smoothness and substance of petal, and a vigorous grower. It was raised by Mr. Joseph Lakin, of Temple Cowley, and was awarded a first-class certificate at the meeting of the Union at Oxford in 1888. On August 1 last, when it came to the matter of selecting the best self flowers in the class for single blooms, three varieties were in the running, as the racing men say—Benary's yellow self *Germania*, Lakin's *Emma Lakin*, and Dodwell's *Gladys*, a lovely pink self of great beauty. They were placed in the order in which I have given them, and they won the first seven prizes out of eight offered for single blooms of selfs. *Germania* and *Emma Lakin* are both very robust growers, especially the latter; but *Gladys*, beautiful as it is, is unfortunately a little weakly, and requires care to obtain good flowers. But it might be said, how is it possible to determine the habit of growth of a plant from a single bloom? It cannot be done; but Mr. Lakin's garden at Temple Cowley being within easy reach of that of Mr. Dodwell's, where the meeting of the Carnation and Picotee Union took place, several of the florists who were present at the exhibition paid a visit to Mr. Lakin's garden. The sight of this beautiful white Carnation at Temple Cowley was something amazing. It is a variety that appears to be at home in any position, in pots or in the open border. Here was to be seen a bed of *Emma Lakin* 15 feet in length, containing many plants, each carrying at least a dozen blooms, and each bloom of good size and perfect form. It is a variety that has the capacity of forming its superb rounded petals in symmetrical layers, and requires little intervention on the part of the dresser to fit it for occupying a place on the exhibition table. I think, from what was seen at Temple Cowley, that *Emma Lakin* must be assigned the position of queen of the whites, but in saying this much I have no desire to disparage anyone else's white Carnation.

In this interesting garden at Temple Cowley is another self white border Carnation. This is named *Annie Lakin*, a marvel of purity in the white ground, equally smooth and finely formed in the petal, a good grower, and quite distinct. White Carnations are not only increasing with rapidity, but they are being greatly improved. Purchasers must, however, be careful what they buy, judging from my own experience. I was induced last spring to order a half-dozen plants of a white Carnation, from having been shown a coloured representation of it—of snowy whiteness, full, perfect in the petal, and in every way most attractive and apparently desirable. It turned out to be the common *Sandringham White*. I mention this to put buyers on their guard. Some white-flowered and other kinds form large round buds, which burst their calyx before they can expand, and actually become floral monstrosities. This type of flower should be resolutely avoided. Seedlings of this character

should not be named and distributed, as they are certain to disappoint. Not only should good garden Carnations be robust growers, but they should throw up strong flower-stalks that bear their heads of bloom fairly erect, and when supported by stakes, lift their flowers well up to view. It is only in the case of a dwarf, rigid habit of strong growth, like *Souvenir de la Malmaison*, that we may expect to secure a race of Carnations that will not require the support of stakes. R. D.

Hardy Primroses.—It really does seem absurd to find hardy Primroses coming into flower freely in the month of August. This is somewhat unusual, but they did bloom very freely last year in September. We have had, because of the recent cooler weather and later showers, such a good time for hardy plants, that they are now making luxuriant growth; even very old plants of Primroses and Polyanthus, which (as old plants will) have lost their leafage during the warm June weather, are breaking up with exceeding vigour. Younger plants, especially those one and two years old, seem not to have lost a leaf, as they have been green and vigorous all the summer. Let the autumn be what it may, and a dry one is much needed, no further harm can result to hardy plants which should now make robust growth.—A. D.

KITCHEN GARDEN.

SPRING CABBAGE.

A CONSIDERABLE number of Cabbages were tried here last season, among these being several excellent varieties for garden culture, and, still more, that are more fit for growing in fields, or for meeting the wants of those who prefer quantity to quality. Raisers and vendors of new varieties in too many instances err greatly in imagining that a Cabbage of great size pleases the public generally. A few there may be who like them, but all who are ambitious to grow only the best vegetables will agree with me that quite the smallest varieties of Cabbage are of much the best quality, besides being the most economical in the end. One large Cabbage occupies the room that might well be devoted to three small ones, and fully one-half of the former goes to waste; whereas the latter form but few outside leaves and may be cooked and served whole. The variety that succeeds better than any in this district is the old *Wheeler's Imperial*, this being only a moderately strong grower and hearting in early. The quality, however, is not equal to that of *Ellam's Dwarf Early*, which is quite a model variety in every way, and which we plant extensively every season. Another superior small early variety will be found in *Veitch's Matchless*, this with us being more reliable than *Ellam's*, but scarcely so tender and mild in flavour when cooked. *Hill's Dwarf Incomparable* is of neater growth than either of the foregoing, and is quite a little gem. Reading *All Heart* is also well worthy of a trial, and will in most instances be found a profitable and good variety. As yet I cannot express an opinion on the merits of several varieties received from Paris, but can strongly recommend both the *Early Paris Market* and *Early Etampes*. *Early Paris Market* is of very compact habit, hearts in quickly and the quality is good, while the *Etampes* is rather smaller and the neat hearts cook tender and sweet. *Stuart and Mein's No. 1* is altogether too large for us, though it is moderately early and the quality is good. *Veitch's Earliest of All* each time we have grown it has attained enormous proportions, the large conical-shaped hearts causing quite a sensation among the labourers, but they are not what is wanted for my employer's table. The spring sown plants

heart in quickly and do not grow so large as in the case of those raised in the autumn. *Heartwell Marrow*, if not given too much room, forms medium-sized conical-shaped hearts, such as exhibitors delight to find, and the quality is very good. *Battersea* or *Fulham* and *Enfield Market* are doubtless well adapted for field culture, immense quantities of these varieties being sold in the markets, but they ought not to be cultivated in private gardens.

Of the value of a good supply of early spring Cabbage there can be no two opinions; in fact, in many establishments only the earliest and, as it happens, the most delicately flavoured hearts reach the dining table, at any rate, in the form of a dish. Not only are they highly appreciated for home consumption in all places, whether large or small, but if there are more than are required a ready market can be found for them. Early Cabbages are thus a desirable and profitable crop, and every attempt should be made to produce them in quantity. The proper time for sowing the seed varies considerably, even in particular districts, but, as a rule, more err from being too late than from being too early. The earliest supplies are usually to be had from strong plants put out late in August or early in September. As, however, seasons and soils vary considerably, it may happen that the earliest raised and planted may either grow too large before the winter, to be hardy, or else numbers of them will run to seed prematurely in the following spring. This difficulty can, to a certain extent, be obviated by either planting two or more breadths of plants at an interval of a fortnight or three weeks, or two sowings of seed may be made, the first about the middle of July, and the second the first or second week in August. In any case, extra pains should be taken in raising as many plants as possible without crowding in the seed beds, and if all are not required for planting in the autumn they can be left where they are, till the spring, when they will be found of service in making good any blanks that may have occurred, and also for forming fresh beds. There is always plenty of other seeds to be sown and plants to be raised in the spring, and if, therefore, Cabbage seed is sown thinly on a sheltered border now, the plants will, if duly protected from slugs, be available for spring planting.

Very poor land is not capable of producing early and good Cabbages, while, on the other hand, heavily manured, deeply dug, loose ground is apt to favour rank growth, which must be avoided as much as possible. In our case, were we to plant on ground thus prepared it would most probably become badly saturated and too cold for the well-being of the plants. Clayey soils generally, especially when in a loose state, are most retentive of moisture, and for this reason we prefer to plant on undug ground, nothing answering so well as the space just cleared of spring-sown Onions. The ground is invariably well manured for this crop, and the surface being unbroken, much of the rain that falls either passes off the surface or finds its way down the natural drainage holes formed by worms. As a consequence it is sufficiently rich and warm, and the firm root run causes a sturdy and hardy growth. If the old Onion bed is not utilised in this manner, then should somewhat similar conditions be provided for the Cabbage, that is to say, the ground intended for it should be well manured and made as firm as can be done without making it pasty. All we find it necessary to do prior to planting the Cabbage is to clear off the Onions when fit and any weeds there may be. The ground is then given a good dressing of soot and lime and the surface well stirred with Dutch hoes.

Some advocate alternating the rows of strong-growing varieties with others of compact growth, the former being put out 2 feet apart, and the smaller-growing sorts being drawn as *Coleworts*, or before they have formed close hearts. This plan answers well where large hearts are desired or tolerated. We prefer to plant all more thickly than was at one time considered advisable. Last season all the stronger growers were planted 15 inches apart each way, and the smaller ones were put out 12 inches asunder in rows 15 inches apart. Only a very few bolted, all the rest hearting in properly and affording a long succession, the earliest being cut by the end of March. We do not waste time and labour in pricking out the plants from the seed-beds, but prefer to plant them out at once, taking care, however, to first well moisten them if necessary. All can then be firmly planted with a dibber. During some seasons the ground is very hard and dry, in which case it is advisable to draw drills with heavy hoes, and after these are well soaked with water the planting can be done easily and properly, the drills also rendering it an easy matter to water the plants subsequently. Slugs are frequently troublesome among newly-planted Cabbages, and these must be kept in check with the aid of frequent dustings of soot and lime. During the autumn, and again early in the spring, the Dutch hoe should be frequently used among the rows, and when growth recommences a mixture of soot and some kind of special manure ought to be sown around the plants and stirred in with the hoes. This being duly washed down to the roots by rains greatly stimulates top-growth, making a considerable difference both in the earliness and quality of the crop. Our old stumps are left on the ground till the following midwinter, and in the interval yield a long succession of hearts and greens, being especially serviceable in November and December. On poorer land it is a better plan to clear off the old stumps after they have borne a second crop of hearts, more being raised and put out to form a succession, the *Coleworts* raised in June being depended upon to keep up the supply in the late autumn and winter months.

We are not troubled with the disease known as club, but in some gardens it is most difficult to contend with. An insect or weevil deposits its eggs in the stems of the young plants just below the surface of the ground, these being followed by a large protuberance containing the larvæ or grubs, which prey upon the juices of the plant and effectually check all progress. A free use of soot, lime, and wood ashes in the seed-bed, and also in the ground to be planted, acts as a deterrent, a change of site in each case being also most imperative. If any of the plants when drawn from the seed-bed are found to be affected, they should either be burnt or the swelling cut clean out. Puddling—that is to say, coating the roots with a mixture formed with water, soot, and clay—ought always to be resorted to prior to putting out plants in any garden where the disease has previously shown itself, this serving to ward off the attacks of the insects. W. JGGULDEN.

Winter Parsley.—This was very scarce last winter, and existed only in name in many places, as it had completely died out, the cause of which was no doubt owing in a great measure to the weather, but I am of opinion that the improvement—for so it really is for garnishing purposes—has a great deal to do with it. This doubling or curling of the leaf renders it highly ornamental and valuable for garnishing purposes, for which Parsley is almost as much used in most houses as it is for flavouring, but the curling causes the foliage to hold the wet

more, and we all know that plants that are not dry are very susceptible to frost and cold, and go off in such weather more quickly than those that are dry. I am led to the conclusion as regards Parsley by having seen plenty of the common or single kind in a garden last year, when I, who had the Extra Curled on favoured borders, was quite without and had to beg some of the roots, which were planted in a sunny spot and gave a plentiful supply. This season I hope we have guarded against the scarcity by having both kinds, and I would advise others to do the same if they can get plants, or it may not be too late even yet to sow seed. The most suitable place I have yet found for winter Parsley is alongside of a hedge fully exposed to the sun, as there it gets shelter and air and dries quickly, through the gradual current of air, and yet has all the protection it wants. This dryness I regard as essential for the plants, and I think that transplanting does good by way of hardening them, as I find that any moved during summer appear hardier and stand the winter better, as the moving is a check to rank growth. It is the practice with some to have a bed where they can cover it with glass by using a frame or old lights, and where there is this convenience it is well to take advantage of such protection. Those having a good stock will find this a suitable time for transplanting the roots, and if a watering is given and a little shade afforded by the aid of evergreen branches, or otherwise, the plants will soon get fresh hold, and be in a fair way for withstanding the winter. —S. D.

KITCHEN GARDEN NOTES.

CELERY.

WE have had a most favourable season for the growth of Celery, and fine strong rows of plants are to be seen in most well-managed gardens. It must not be thought, however, that because we are having frequent showery days the Celery plants get fully as much water in most cases as they need, or would take with advantage. On the contrary, in many instances it will be found on examining the soil in the trenches, and which in the case of the earliest planted ought now to be crowded with roots, that these are in a comparatively dry state. Advantage should be taken of showery weather to give all the more forward rows a thorough soaking of moderately strong liquid manure, and, failing this, to wash down a liberal dressing of soot or some kind of special manure. Under the influence of this treatment the growth of the plants will be more vigorous and the stems stout and solid. Dryness at the roots either before or shortly after moulding up has taken place is the most frequent, though not the only cause of much Celery being hard, pipy, and indigestible when used, instead of being solid, crisp, and sweet, or of a nutty flavour. On no account, therefore, must Celery be moulded up when dry or partially dry at the roots. Nor should the watering be discontinued if the weather is at all dry after the first commencing of the blanching process, as the plants soon exhaust what moisture there may be enclosed by the first layer of soil placed in the trench, and must be supplied with more, or otherwise the growth will be greatly checked. This remark holds good till the end of September, especially in gardens where the sub-soil is of a gravelly or hot nature.

HOW TO BLANCH CELERY.

Many growers succeed well in growing Celery up to a certain point only to fail conspicuously in blanching it for use. Some err in moulding up too quickly, others in being too late in commencing. If half-grown plants are heavily banked up with soil they cannot make headway, they are literally smothered by it in fact, and I would especially warn amateurs not to be too hasty in moulding up their rows of plants. In some establishments very early Celery is required, but, as a rule, it is not much cared for before October or November. Earlier than that it is apt to be hard and not sufficiently sweet. It does not follow, however, that nothing should be done in the way of moulding up at the present time. Supposing the plants are growing strongly, they, if left uncared for,

soon commence to open out, the outer leaves gradually assume a horizontal position, and cannot again be got erect without splitting or cracking many of them. It is advisable, therefore, to commence moulding up the plants when they are about 18 inches high and growing strongly. The first proceeding, following upon a good overnight soaking of water or liquid manure, should be to cleanly pull away all suckers and small leaves from the base of the plants, after which the stems should be lightly gathered up together, and secured with matting, or else one person must hold them well together while others chop down some of the soil on each side of the trench and carefully distribute about 4 inches of this about the plants. From first to last the aim should be to well surround the stems with fine soil without any of it reaching the heart, care also being taken not to unduly jam the stems, that is to say, stout leaf-stalks together. Then, as the heart advances, or say in the course of about two weeks, another layer of soil can be added, the third and final moulding being given from a month to six weeks before the Celery is wanted for use. When ties are used for keeping the stalks together these should be fixed slightly higher than it is intended to mould up, and cut away after each process. If not so removed, those first used are especially liable to cause bulging and splitting at the base, these also often happening when the stalks are unduly compressed by soil before they are fully grown.

CLEAN CELERY.

Many cultivators experience a great difficulty in protecting their Celery stalks from slugs. If the slugs confined their depredations to the outer stalks it would not so much matter, unless exhibition Celery was needed, but some of the most destructive kinds find their way into the hearts and quite disfigure these. The "Wortley" paper collars were a step in the right direction, and each time we tried them they answered admirably, the blanching being effected without either soil or slugs doing much harm to the stalks and hearts. I should certainly have liked them better if they had been both longer and wider, but fail to understand why they should not have become generally popular. The best substitute that can be tried is stout brown paper bands 6 inches wide and of a length to well enclose the stems without pressing them together tightly, and instead of being hooked together, as in the case of the "Wortley" collars, they must be secured with a strip of matting. After the trouble of surrounding the stems by paper has been taken the soil can be rapidly disposed around them, and this papering and soiling being repeated in about three weeks or a month later on, the blanching is sure to be clean and effective. Extra fine Celery, whether grown in trenches or on the level, is frequently blanched wholly without the aid of soil, nothing but paper being used. This must be neatly coiled five or six times round the stems if newspapers are used, these being enclosed and protected by strong brown paper. Celery grown on the level is especially liable to open out and this must be prevented early. Drain pipes of the commonest description, and either 4 inches or 5 inches in diameter, the more vigorous plants requiring the larger size, answer well for cleanly blanching Celery. Each plant should be enclosed in a pipe as soon as it can be done without unduly confining the leaves, the blanching being effected without the aid of soil beyond what is put in the trench by way of mulch and to steady the pipes. If neither paper nor pipes are used where slugs are very troublesome, the least that can be done is to use soot very freely each time the moulding up is done. Being heavily dusted among the plants and over the soil used, much of the soot will cling to the stalks, and some of it may be found enclosed by them. It will, however, greatly check the slugs and can be washed off before the Celery is eaten. Ashes and sometimes fine burnt clay are used for surrounding the stems, these being enclosed by the ordinary soil with good effect. In this case, and also when there are several rows of plants grown in a bed, boards must be used during the process of filling in either with ashes or burnt clay, or finely broken garden

soil. In the former instance the boards should be placed close up to the row of plants, and after the ashes or other material has been thrown in and the ordinary soil banked up outside, the boards can be withdrawn and shifted further along. In moulding up plants in wide trenches set the boards across the trench between two rows of plants and fill in with fine soil; the boards being then shifted let this fall cleanly among the stems where it can be levelled if need be with the hand, and in this manner the whole bed can quickly be moulded up.

CELERIAC, OR TURNIP-ROOTED CELERY.

This also should have water and liquid manure to stimulate rapid growth, but as no blanching is required, no moulding up is necessary beyond drawing a small quantity up to the roots. If the plants do not appear disposed to form large Turnip-like roots, and which only are of any service, top growth should be checked by the breaking down of a few of the leaves.

DISEASED PEAS.

Mildew generally affects Peas during the summer let the weather be what it may, and occasionally a few pods are to be seen badly discoloured by some other forms of fungoid disease. This year the latter are unusually abundant, and in some instances fully one-third of the pods are worthless. On all sides the same complaint is heard, and nobody is able to account for it. In some cases the whole crop on a single plant gradually becomes black, others near not being touched by it. Still more plants have a portion of the pods diseased, the rest being apparently quite healthy; and evidently we have to thank the atmosphere for the visitation. It is very doubtful if any remedy will be forthcoming for this any more than there is for any other fungus that proves destructive among vegetables, but it would appear that our enemies are multiplying and we are quite helpless in the matter. W. I.

GARDEN FLORA.

PLATE 715.

AN AFRICAN IRIS.

(DIETES HUTTONI.*)

THE main difference between the genus *Iris* as at present constituted and the genus to which the plant here figured belongs is a geographical one. *Iris* proper belongs to the Northern Hemisphere, chiefly temperate Europe and Asia; *Dietes* and its relations of the *Moræa* family are almost all southern, the Cape being their head-quarters. Of course there is that difference between ordinary garden *Irises* and the *Dietes* here figured which is seen in the arrangement of the flower segments, the three inner ones in *Iris* being erect, and, as a rule, smaller, whilst in *Dietes* and *Moræa* the whole six are spread out horizontally, and in some species are almost equal in size. This character is not, however, so conspicuous throughout the two genera as it would appear. Still, it is not our wish to interfere with the names of the plants, and our only reason for mentioning this point here is that most non-botanical people on seeing the *Dietes* ask why it is not called an *Iris*, because it looks so very like one.

In a broad sense, *Dietes Huttoni* should be included in *Moræa*, of which genus there are some forty species, all of them natives of Africa, Madagascar, and Australia. But the genus is divided into five sections, and of these *Dietes* is one; we may therefore retain the name for the purpose of simplifying matters.

If the flowers of these plants were not so fugitive, a great many more would be represented in horticulture than is now the case.

* Drawn for THE GARDEN by H. G. Moon, in the Royal Gardens, Kew, April 6, 1889. Lithographed and printed by Guillaume Severeys.



DIETES HUTTONI

Some of the most beautiful colour combinations are to be seen in the flowers of many of these African Irids. Anyone who has seen *Moræa pavonia* with its deep gold-coloured segments, each of the three outer ones marked with a large peacock-blue blotch, will admit that very few flowers are more beautifully marked, and the same exquisite colouration runs through the genus. The plants are easily grown and they bloom freely, strong plants producing many flowers in quick succession. They are all perennials, with a woody rhizome or rootstock, and they require a decided rest during winter. They must have plenty of sunshine, a rich soil, liberal supplies of water during growth, and perfect drought for about two months when growth has ceased. This applies to the African species. The Australian *M. Robinsoniana*, which so far has baffled all European cultivators in regard to its flowers, is one of the most interesting of all the Irid family. It forms a



Dietes Huttoni.

huge mass of stout, sword-shaped leaves 7 feet long by 4 inches broad, is as massive in habit as the New Zealand Flax (*Phormium*), and quite as effective. For large conservatories there are few better plants of its kind than this *Moræa*, albeit that it never has flowered whatever the treatment. There is a grand example of it near the south door of the succulent house at Kew. It is planted in a bed of strong loamy soil, and the roots are kept perpetually moist by the drip from a water tap beside the plant. The flowers of this plant are 4 inches across, and they look like a large edition of the well-known *Marica gracilis*.

D. HUTTONI was introduced to Kew from the Cape in 1875, where it is abundant in the neighbourhood of Natal. It has a woody creeping rhizome, wiry roots, leaves from 3 feet to 5 feet long, three-quarters of an inch broad at the base, leathery in texture, greyish green on the upper surface, glaucous below. The stem is erect, a

foot or more long, clothed with sheathing bracts, and it bears several flowers, which expand one after the other. Each flower has a stalk 3 inches long; their form and colour are shown in the plate. A delicious fragrance is exhaled by the flowers whilst open, and they each last about two days. Rhizomes of this plant were sent to England several years ago by Mr. Adlam, of Natal, under the name of "*Dietes*, a new species." The figure here given was prepared from one of these.

STOVE AND GREENHOUSE.

WORK IN PLANT HOUSES.

STOVE. — *ANTHURIUM SCHERZERIANUM*. — Common as this fine plant has become, it is comparatively seldom met with in the best condition. The chief cause of this is through the plants going too long without repotting. This is especially the case with large specimens. So long as they keep on in apparently good condition, making leaves of ordinary size and continuing to flower, they are let to remain in the same soil until they show unmistakable signs that something has gone wrong by the leaves and flowers coming much below their normal size. On turning them out of the pots when in this state the roots are generally found rotten, having comparatively few living fibres amongst them. The reason of this is not far to seek, the soil having got into a pasty, soddened condition, so that the roots could not live in it. It is well to bear in mind that the roots of this *Anthurium* are of a soft fleshy nature, with little of the tough fibre in them which those of many plants contain; hence their inability to bear contact with soil that is at all adhesive. When the plants lose their roots in this way, it takes several years of careful treatment to again bring them up to a vigorous flourishing state. The roots must be washed carefully out. The best way to do this is to turn the plants out of the pots, and get as much of the old material away by hand as can be done without injuring any living roots that may exist; then syringe with tepid water until the whole of the soil is washed away, cut out all the roots that are dead, and put the plants into pots no larger than necessary to hold the living roots and a moderate quantity of new soil. The plant is a shallow rooter, so that if pots of the ordinary shape are used they should be quite half-filled with drainage. The best, it might be said the only, soil fit for this *Anthurium* is a mixture composed of one-half good Orchid peat that largely consists of tough vegetable fibre, an equal quantity of chopped Sphagnum, and a liberal addition of broken crocks or charcoal and sand. If to this some dry rotten manure, such as has been used for mulching a Vine border or an *Asparagus* bed, is added, it will increase the strength of the growth. To grow this *Anthurium* well, it requires much more moisture during the growing season. It will bear watering nearly every day when potted in material such as described, and in the first months of the year when the growth is completed the soil must never be allowed to get dry. Whilst the plants are small, and it is desirable to get them on in size, they may be kept a little warmer than it is well they should be when the specimens get larger. When they have attained a useful flowering size a night temperature of 50° during the four last months of the year and through January and February will suffice with a comparative proportion of heat in the spring and summer. Treated in this way they will make their principal growth in the autumn, say from the beginning of September to the end of the year. So managed they get into a regular course of making their growth at the time named. When the plants are strong they make considerably larger leaves during the latter months of the year than they do in summer. My own practice has been to repot in new soil every year, no matter how fresh the old material may seem. The present is the best time to repot plants that have reached a useful flowering size, as under

the treatment recommended they will shortly commence their growth.

YOUNG STOCK OF *ANTHURIUM SCHERZERIANUM*. — Anyone who is fortunate enough to have a plant of the original stock that was first imported will do well to raise seedlings from it, for this *Anthurium* increases slowly by division of the crowns; and though the greater portion of the seedlings will have flowers inferior to those of the parent plant, it is still worth while to try for something exceptional. Young plants that have been raised from seed sown early in spring should now be large enough to prick off. Sphagnum chopped fine, with a considerable quantity of sand and some small crocks or pounded charcoal mixed with it, is the right material to put the little plants into. They may be put three or four together in small pots, and grown in a moderate stove temperature until spring, when they will be ready to pot off singly.

ANTHURIUM ANDREANUM. — This plant can scarcely be said to have sustained the high opinion that was formed of it when it first appeared, and the same may be said of most of the hybrids that have been raised from it, and also from *A. Scherzerianum*. Of *A. Andreanum*, as in the case of *A. Scherzerianum*, there are scarcely two plants to be met with that are alike, some being much superior to others. The plant is decidedly scandent in habit, strong crowns soon making others that mount up with rhizome-like stems above those that produce them, and if let go on in this way forming crowns that get high above the pots. With the plants in this condition the flowers soon become small. Directly there is any apparent inclination in the plants to behave in this manner it is best to separate the crowns that have a climbing tendency with the roots attached, and put them into separate pots. In this way they flower strongly for a time until the climbing habit again asserts itself, when the division must be repeated. The crowns that are separated from the old plants quickly get established and gain the maximum amount of strength that enables them to bear full-sized flowers. This species, as well as the hybrid kinds that have been raised from it, and also those that have been similarly raised from *A. Scherzerianum*, require soil of a like description to that advised for the last named species. *A. Andreanum* seems to do better with a little more warmth than *A. Scherzerianum*.

ROMAN HYACINTHS. — Where these plants are required to flower early the bulbs should now be potted, as, in common with the large-flowered sorts, it is necessary that they should have enough time to form plenty of roots before any attempt is made to force them. These small Hyacinths are the most manageable when grown in comparatively small pots. Six-inch or 7-inch pots are large enough for five or six bulbs; there is nothing gained by giving them a larger amount of room. Fresh loam of good quality with about one-sixth of rotten manure mixed with it, and sand in proportion to the more or less heavy nature of the loam, is a good compost. Make the soil moderately solid in the pots and leave the crowns of the bulbs just visible above the soil. After potting, an open place out of doors is the best position for them; they should be stood on a layer of ashes a few inches thick to prevent the ingress of worms, and they ought to be covered with 4 inches of the same material. Allow them to remain here until the soil is fairly full of roots, when they may be taken in and forced in moderate heat.

MIGNONETTE. — Where this is required in pots over a long season it is necessary to make successional sowings. To have the plants in bloom early in spring a sowing should now be made. To have Mignonette in the finest condition it must be grown through the winter close to the roof of a house or pit where the plants will get as much light on all sides as it is possible to give them; without this, they are sure to be wanting in that sturdy short-jointed growth which is the leading feature in the plant when skilfully treated. No time should now be lost in getting in the seed. Drain and fill with soil as many small pots as there are plants required; put in each three or four seeds and cover slightly.

Stand the pots in a shallow frame filled up with coal-ashes, so that when the plants appear they will be close to the glass, put on the lights and keep them nearly closed until the seeds germinate. During this time keep the soil moderately moist. A mat laid over the glass will prevent the soil drying so quickly. As soon as ever the seedlings appear give plenty of air night and day, and when a little growth has been made remove the lights altogether; thin out the plants so as only to retain one to each pot. Allow them to remain in the frame until there is danger of frost, putting the lights on when the weather is cold later on, as the growth all through the autumn and winter must be kept moving slowly. For this reason the house or pit in which the stock is wintered must not be kept too cold. When the plants are taken indoors they should stand on a shelf near the roof, and when they are about 2 inches high pinch out the tops, so as to induce the production of several shoots. As soon as the young growths are long enough to admit it, tie or peg them out horizontally to lay the foundation for bushy, well-furnished bottoms. Keep the soil moderately moist through the winter, and when it is sufficiently full of roots move the plants into 5-inch or 6-inch pots. From the sowing of the seed onwards, the soil should consist of good fresh turfy loam, to which must be added a liberal amount of rotten manure and some sand. A second sowing should be made towards the end of September, and another still later on. In the case of these later sowings, three or four plants may be grown in each pot, and no stopping will be required.

HYDRANGEAS.—Where a sufficient stock of the common kind was not struck in spring, cuttings may soon be put in. The present summer's shoots, as soon as the flower-buds at their extremities have set and got a little plump, are in right condition for striking. The method of getting them to strike at this advanced time of the year is somewhat different from that which answers in the spring when the soft, young shoots are used. In spring the young shoots strike well and quickly by being kept close and warm in the usual way. Now, when the wood has got much harder, the cuttings take much longer to root, but where compact, short-legged plants bearing very large heads of bloom are wanted, autumn-struck stock is the best. As already said, the cuttings must not be put in before the buds are fully formed, otherwise the bloom will be a failure. The shoots must be taken off at the third joint below the buds, retaining all the leaves, except the pair at the bottom joint. Put each cutting in a 3-inch pot, which drain and fill with a mixture of sand and sifted loam, to which some decomposed dry manure has been added; the proportion should be about half sand and half loam. Give the cuttings a good soaking as soon as they are inserted. A slight hotbed should be ready in which to plunge the pots; admit enough air to keep the top heat down sufficiently, as the object is to get the cuttings rooted without exciting the tops to make any growth at all, for if this occurs the plants will fail to flower. The cuttings will bear being kept much more moist than those of many things, and it is necessary to keep them so, as it is better that the vitality of some of the leaves should be preserved as long as possible. When they are well rooted they may be moved to a house or pit for the winter, where they will not be frozen. Do not let the soil become dry even when all the leaves have disappeared.

SCHIZANTHUS PINNATUS.—This common well-known annual is not so much used as a pot specimen for spring flowering as it deserves to be. When fairly treated it is one of the most effective plants for greenhouse decoration that can be grown. Sow the seed now; about half a dozen should be put in a pot; 3-inch pots are large enough. These should be drained and filled with loam made moderately rich with manure, adding sufficient sand to make the material porous. Stand in a cold frame, and as soon as the plants are large enough to handle, thin them out to about three to each pot. Let them have plenty of air and light. Winter near the glass in a cold house or pit. Move them

into 6-inch pots when the soil in those in which they were sown has got fairly filled with roots. Early in spring give the plants 8-inch or 10-inch pots, and grow them on in cool quarters until they flower. T. B.

The African Lily (*Agapanthus umbellatus*).—We have four or five varieties of this plant, all different, but perhaps none really better than the old blue type or form. As plants for the terrace walls or porch sides of old Elizabethan or Queen Anne houses they are unsurpassed. On the walks and terrace in front of the old orangery at Warwick they are, as a rule, superb year after year, and the wonder is that they are not more generally grown. They grow splendidly in tubs, which they do not burst so easily as they do the flower-pots (see p. 128), and the tubs are really cheaper and better in all ways. Old 4½-gallon casks do well if hooped strongly and repainted now and then; and I have used oil-casks charred inside for these and other plants with the best results. As to the varieties of *Agapanthus*, there are two or three blue forms like the type, and a still larger blue or giant kind. One I had from Straffan blooms earlier, and has larger flowers of a lilac colour, with a blue stripe down each segment of the perianth, and is one I think much of. Then there is the double-flowered variety, and certainly two, if not three, white-blossomed kinds; and, finally, the dwarf and free-flowering blue variety known as *A. Moorei*. The last-named is deciduous even in a greenhouse. The typical blue African Lily is quite hardy here in the open-air borders, but flowers much better under cover during the winter months. As grown in tubs, the plants are easily removed under cover during winter, and can be placed where wanted when in flower.—F. W. BURBIDGE, *Dublin*.

—Many large specimens of these are grown here, and I have found the pot-bursting objection overcome by hooping the pots. A narrow galvanised hoop driven up under the rim, and another about one-third from the bottom, effectually prevents bursting. If neatly done it is not unsightly. I have also found that if the plants are turned out every year and a little reduced by removing a few of the crowns, pot-bursting is obviated. The *Agapanthus* is a most patient, accommodating plant. On the approach of frost the specimens are removed from their summer quarters to an open shed until Christmas, when, as severe weather may come on suddenly, they are carried into a nearly dark cellar, there to remain until the end of March, at which time they are again taken to the shed, shaken out, and repotted for the coming season.—J. M., *Charmouth, Dorset*.

Bouvardias.—I send you blooms of twelve varieties of *Bouvardias* which include most of the best varieties. There are, however, a few others which I could not include, as they do not happen to be in flower just now. Of white varieties, *Humboldt corymbiflora* we find the most useful for cut bloom, and we now have a large batch of this variety which has been flowering freely for the past two months, and at the present time the plants are full of bloom and buds. I have heard it remarked that this variety does not flower freely, yet I think anyone seeing it here would hold the opposite opinion. Of other white varieties, *candidissima* is a good one, of dwarf habit, free flowering, and makes a good pot plant. *Jasminoides*, of rather slender habit, has pure white flowers. It is good for winter work, but requires more warmth than most of the varieties. *Vreelandi*—this, identical with *The Bride*, *Davidsoni*, and *alba elegantissima*, is a free and continuous bloomer, producing good trusses of bloom, usually pure white, but sometimes slightly shaded with pink. Of scarlet varieties, *President Cleveland*, which was figured in *THE GARDEN*, March 30, 1889 (p. 288), is very fine with us just now; some of the trusses are of immense size, and the colour far brighter than that of *Elegans* and *Dazzler*. *Vulcan*, though the flowers are small, is very brilliant in colour, and the plant appears to be of freer growth than I thought when I first saw it. The pink varieties include *Mrs. Robert Green*, which was figured with *President*

Cleveland, and for which a first-class certificate has since been awarded by the floral committee of the Royal Horticultural Society, and *Priony Beauty*. The double-flowered varieties which came as a great surprise a few years ago have not proved so valuable as was at first anticipated; they are, however, of some merit, and the three sorts which I send are the best. They are *Alfred Neuner*, white; *President Garfield*, flesh-pink; and *Hogarth flore-pleno*, dull scarlet. The last named is equally free-flowering and of the same habit as *Hogarth*, which was for many years the most popular scarlet variety. The plants from which the blooms were cut are old specimens which have been allowed to grow their own way without being stopped since the spring when cuttings were taken. Although to form good bushy plants it is necessary to stop them from time to time, yet for producing a continuous supply of cut flowers it is better to let them grow more naturally; they will then produce larger trusses of bloom, and if treated liberally will keep up a succession for a considerable length of time. The early bloom often comes in useful, especially as at this season of the year there is not much variety of choice bloom under glass.—A. H., *Dyson's Lane Nursery, Edmonton*.

*** A very rich and beautiful gathering.—Ed.

FRUIT GARDEN.

W. COLEMAN.

EXTRA EARLY VARIETIES OF STRAWBERRIES IN PITS.

Now that the extra early varieties of Strawberries are so plentiful and coming well to the front, some labour in potting and tending late sorts through the winter may be saved by placing well-rooted surplus runners in cold frames and pits. It is now too late to layer runners for this work, but anyone having a stock of good maiden plants in 3-inch pots may steal a march upon the earliest open-air beds by planting at once not more than 1 foot apart each way. A frame 6 feet in width and 20 feet in length will hold six scores of plants, and, assuming that each of these produces half a pound of fruit, a slight advance on the prices realised for Noble from early beds in the open air should well repay the trifling amount of labour and attention which this method entails. Frames for this system of protecting the early flowers and hastening the swelling of the fruit may be placed in any light open part of the garden, but the nearer to the forcing houses and a good supply of water the better. Any stiff Strawberry soil will answer very well, but heavy watering when the fruit is swelling being imperative, much as the Strawberry enjoys moisture, means should be provided for allowing it to pass away freely. If the bed is somewhat high and the soil is trenched two spits deep, some manure being worked in and well incorporated as trenching is proceeded with, the plants will do well, but lying low and damp the top spit should be thrown out, when a good layer of half rotten stable manure or decaying leaves put in and made quite firm will form a sustaining as well as a draining stratum for the roots. The soil when dry enough to bear treading or ramming should then be returned, made solid and level, and it will be ready for the reception of the young plants. The balls, it is hardly necessary for me to say, should be thoroughly moist when they are turned out, and if a double handful only of fresh loam tinged with bone-dust be placed round them the roots will fasten upon it at once. When the frame is planted a steady watering will settle the soil about the balls, and very little more attention will be needed beyond weeding, cutting off runners and repeating watering should the autumn prove dry. The lights need not be

placed over the plants; indeed they will be quite at liberty for other purposes so long as the plants are growing and they are not saturated with cold autumn rain. As a protection from this they may be replaced for the time being, but thorough rest being absolutely necessary, it is better to expose them to moderate frost and possibly a little snow than to keep them in a state of excitement during the winter. The plants, in fact, may be treated precisely as we treat pot plants when plunged in a similar situation, and the more decided the season of rest the better will they show flower. Very early and excitable plants being more likely to start too early than too late, attention to this matter of winter exposure forms the keystone of success, but once the plants show decided signs of moving for throwing up, they must be brought on very gradually by day and the lights may be placed over them and tilted through the night. Water from this stage forward must be given pretty freely; a little sulphur dredged about will check mildew and spider, and fumigation, once or twice before the flowers open, will ensure immunity from aphis until after the fruit is set. When set, the fruit should be thinned, propped, or tied up to small pieces of birch, the frame well syringed, shut up early on fine afternoons, and also matted up when there is danger of frost. Coddling at the same time must be carefully avoided, as plants that are very freely ventilated through the day and shut up at night will ripen their fruit some few weeks in advance of the most forward in the open air. Noble, La Grosse Sucrée, and Vicomtesse Héricart de Thury, are well adapted for frame culture, but frame room being plentiful, British Queen, Dr. Hogg, and Paxton, still one of our brightest and best Strawberries, might be used for succession. I have lifted in January strong plants put out in August, placed them with their leaves nearly touching each other in pits and frames, watered them well home with tepid water, and they have produced good crops of fruit; but autumn planting answers best, as the whole energy of the plants is devoted to the formation and swelling of the fruit. Many gardeners obtain early Peas, French Beans, and other vegetables from temporary frames, and Strawberries, provided they are kept well up to the glass, which should not be more than 16 inches from the crowns, will do equally well.

SHORT NOTES.—FRUIT.

Apple Norfolk Bearer.—This variety, which is not a strong grower, is bearing well this year. It is a certain cropper, but usually fruits heavily in alternate years. The fruits are of fair size, pleasant flavour, and good looking, and are fit for use during midwinter. It takes second rank as a dessert Apple, but all the same is one of those sorts which may be strongly recommended to those who regard a crop as of the most consequence.—A. D.

Mother Apple.—This is one of the strong growers on the free stock, and now that the tree is large seems to be a constant cropper. I have upon it a really capital crop of good-sized handsome fruits, which will presently colour well. For growth it rivals the Blenheim and others of its class, and should be grown on the Crab as an orchard tree. The fruits are ripe during October and November.—D.

Apple Nelson Codlin is a dwarf-growing kind with drooping habit on the Crab stock, and well suited for ordinary garden culture. It fruits freely and almost regularly. The fruits are handsome and conical, covered with bloom. The tree is hardier than Lord Suffield and the fruits keep later. None of my trees suffered from the caterpillar.—A.

Apple Waltham Abbey Seedling.—My one large tree of this has a large erect head and two large side branches. Very odd, these divisions fruit in alternate years. The two side branches are fruiting well this year, whilst the head has

hardly a fruit on it, but it bore a good crop last year. The tree is a perpetual bearer, for it has never been without fruit for twenty years at least. The fruit is good for cooking and keeps well. Waltham Abbey Seedling is not a coarse grower, but as a variety which gives fruit when many kinds of high pretensions are without produce, it merits a place in every garden or orchard. It is specially a good kind for cottagers.—D.

FRUIT PROSPECTS.

ASSUREDLY our fruit prospects do not improve by mere lapse of time; on the contrary, our scant crops become yet scarcer by dropping. This peculiarity, hardly observed or regretted when crops are plentiful, plays disastrous havoc when crops are scant; for, perversely enough, the lighter the crops, the more severe and persistent the dropping. And yet it ought, in theory and reason, to be very much otherwise. In fact, the explanation of dropping in fruitful seasons is that the trees are overburdened, and hence cannot take all the fruit in and do for them in a liberal and safe manner; hence many are starved off and drop.

Frost is another explanation of dropping. The embryo fruits have been so considerably bitten into and injured by frost, that, though they cling on to the trees for a time, they become stunted, deformed, diseased, and finally they drop. But neither of these causes has been present or potential this year, so that the dropping, as well as the more general failure of the fruit crops, yet remains somewhat of a mystery, notwithstanding the lucid light Mr. Coleman has shed over the subject (p. 115); for, assuming that the fruit crops failed because the blossoms were without pistils and stamens, the prior question still remains as to why they were formed so imperfect this season. Not a few sanguine theorists could have readily understood the entire absence of bloom after the sunless summer of 1888, but why the trees should put forward such a stupendous effort on the heels of such a season to clothe themselves so gorgeously in coloured petals only, all for show and nothing for use, is what a great many bewildered and defeated cultivators cannot understand.

Neither were all the blossoms of all the fruits sent forth in this very defective condition. Other fruit trees besides Apricots on the gable ends of cottages, nurtured by the warmth of chimney nooks and corners outside as well as in, produced fruits like ropes of Onions. And it is this diametrically contrasting and opposite result that prevents some of us accepting Mr. Coleman's theory of failure in its entirety, though packed into such a handy and plausible nutshell for our use, as a brilliant spread of coloured leaves, that is petals, in lieu of perfectly equipped and vitally endowed blossoms. Had the trees failed to bloom, as indeed some of them did, notably Apricots, there would have been no difficulty in laying the blame on the broad, ill-favoured back of 1888. But it is difficult to see why a sunless summer should have given us one of the most brilliant spreads of blossom of modern seasons and yet be held responsible for the absence, weakness, and worthlessness of these highly coloured blooms.

Here is yet a more difficult nut to crack—the contrast in the conduct of Peaches and Apricots on the same walls, in the self-same soil, and under identical physical conditions. The Apricots either bloomed not at all or bloomed to wither and perish. Of course, there are exceptions not only on, but off chimneys. But failure is the general rule with Apricots this season. Peaches, and in this connection the term includes Nectarines, on the contrary, are a fair if not an average crop. Does it need more sun to develop or perfect Apricot than Peach blossoms? If so, this is a new revelation to most of us. There is nothing, however, startling in this. The show of blossom this spring was one of the most unexpected facts and pleasant surprises that the oldest fruit growers amongst us have experienced.

Having proceeded so far towards fruit-bearing, not a few believed that, barring such accidents as frosts and maggots, the trees were bound to go fur-

ther. We had no such accidents, and yet we have no Apples, Pears, Plums, Cherries, nor Apricots.

Were there any other causes or accidents sufficiently potent to account for this national catastrophe? I think there were. No practical fruit grower will venture to assert that imperfect blossoming had not a share in the failure. This cause of failure is, in fact, always with us, and it would be a nice philosophical point to determine what percentage of all our fruit blossoms results in perfect fruit.

But I still believe that the tropical heat we had in May proved a potent cause of our fruit failure. This heat was general, and could not be limited in its area either by north or east walls, and withered up or shed off the fruit blooms almost with the rapidity and suddenness of a destructive blight or a flash of lightning. The excess of heat theory fits in with the known facts better than any other that has been advanced. The early Apricots on the gable or chimney end of the house were beyond its reach. The Peaches were able to endure and even enjoy it. Singularly enough, too, about a dozen spiral Apple cordons, starting from the ground line, set and are swelling off their fruit well; while horizontal and diamond cordons and pyramids all round about them are fruitless. Now those spiral cordons, shaded by their own tops throughout last summer, enjoyed less sunshine than Apples of any other form in the garden or orchard. Still, the blossoms, which, on the theory of failure through the sunless summer of 1888, ought to have been the most imperfect of any, were sufficiently perfect to set and swell ropes of fruit.—D. T. F.

—The indifferent account of the fruit crops furnished by your numerous correspondents is very disheartening, as the prospects up to a recent date in many localities were very hopeful. The failure of the Apple crop is, perhaps, the most to be regretted, as this is certainly the fruit of the million, and, when scarce, it is beyond the reach of the humbler classes. I notice many of your correspondents attribute the failures to the lack of sunshine last season and the imperfect flowers. This reason may be correct, but I think the scarcity of insects had more to do with it than many suppose, as up to the middle of July most of our Apple trees were fairly loaded with fair-sized clean fruit that instead of swelling rapidly fell off. On examining the fallen fruit I find the core hollow without any sign of a pip; this evidently points to imperfect fertilisation. Had the blossoms been imperfect, I think the fruit would not have swollen at all; and, again, a few trees that happened to be in bloom when we had a few warm days that the bees could work are bearing a good crop. Pears and Plums on our west walls, that were also loaded last season, are also bearing freely. These trees had no more sunshine than those on east and south walls, which are nearly barren.—J. H. GOODACRE.

Bad Peaches.—You do well in calling attention to the small size and inferior quality of the Peaches sent to market. The fruits of some of the earliest Peaches are naturally small, but it often happens that they are made still more so by hard forcing and overcropping. Taken as a whole, there are none of the new sorts introduced within the last ten or fifteen years that are equal in flavour to the old standard kinds. At the same time, we have gained something in size and colour, and the latter especially in such highly-coloured sorts as Alexander and Waterloo. Of late varieties, Sea Eagle deserves a word of praise, as the fruit is large, highly coloured, and sometimes the flavour is good; but it is a sort that is much influenced by the weather in that respect. Dull weather and a moisture-laden atmosphere spoil its flavour. In my opinion, the best sorts for size and flavour, placed in the order in which they ripen, are Alexander, Early Grosse Mignonne, Royal George, Noblesse, Stirling Castle, Royal Hative, and Sea Eagle.—J. C. C.

Peaches at Heckfield.—The earliest variety under glass at Heckfield is Early Alexander, a new and

valuable Peach from America, regarded as ten days earlier than Beatrice, fine in colour, and of good flavour. It possesses the additional quality of being a good forcer. Hale's Early, also an American variety of hardy constitution, rich in colour and fine in flavour, comes next in point of time. This is followed by Bellegarde, Dr. Hogg, a variety whose proper place appears to be under glass; Crimson Galande, the fruits of which attain to a great size; Grosse Mignonne, and the good old Noblesse. In the open air the trees are in admirable condition, and they are carrying on the whole good crops. The best of all for a general crop outside is the Nectarine Peach, which always bears a good crop at Heckfield. The tree is hardy and the fruit large and of good quality. Royal George does not find a place in the open, as the foliage becomes mildewed.—R. D.

WORK IN FRUIT HOUSES.

PINES.

FRUITING plants, consisting principally of Rothschilds, Smooth Cayennes, and, perhaps, a few late started Queens, will now require very generous treatment both as regards feeding with warm diluted liquid guano and soot water, good syringing, and very early closing with sun heat, a very important factor now firing is reduced to a minimum, or in warm situations dispensed with altogether. If any of the stools from which the fruit has been cut, or is approaching ripeness, contain good suckers likely to be wanted for stock, they should be stripped at once and disposed of, in order to make more room for future batches which will require plenty of light, sun, and air through the remainder of this month and the whole of September. Where space is abundantly plentiful this cutting and contriving are unnecessary, but, otherwise, a few solitary fruiting plants may be removed to pits or dry airy vineries where the Pines will ripen perfectly, when the fruiting pit proper can be cleared out, cleansed, and made ready for the cream of the best successions. All Pine pits should be cleared out at least once a year, and checks being detrimental, they should be taken in hand one after another in order that all may be finished before the end of September. The enemies to Pines are cockroaches, crickets, and woodlice, which prey upon the flowers and pips of the fruit; hence the wisdom of throwing out the whole of the old tan, scalding and limewashing the walls, sifting and returning the best, when the new material may be placed on the surface in preference to mixing. In making up the bed, the material, be it tan or leaves of last year's harvesting, should be made as firm as possible, and then even the plants should be placed in shallow basins for a time, as nothing can be more fatal than the exposure of the crock roots to violent bottom heat. The earliest Queens should now be slackening their growth and gradually sinking to comparative rest, if more light and fresh air on fine days can be called rest, but for the present they must not feel the want of water of a slightly stimulating nature. Some Pine growers always use clear manure water, but this batch having made their growth, warm water with a pinch of guano in it or clarified soot water at this stage will be found more suitable. As each batch of plants is plunged or partially dropped, as I have remarked, in shallow basins to be closed in when the bottom-heat is safe, they must have an abundance of room, as the majority of them will not be again disturbed until after Christmas. The general stock of fruiting plants may be kept growing for some time to come, but once the centre leaves become short and sharply pointed, these, like those intended to start first, will require precisely similar treatment. Years ago Pines were grown to an enormous size, but size is of no use unless the pots are full of roots and every part of the plants is properly matured, as has been proved over and over again by those who pot strong ripe suckers, give one shift and get large fruit from comparatively small plants before the roots have time to exhaust the equally small modicum of compost.

Suckers.—All suckers from summer fruits should

be trimmed and potted very firmly in good loam as quickly as possible after they are detached, and plunged at once in a sharp bottom-heat. If the compost is dry and warm, they may be watered as soon as they are in the bed; but, the compost and plunging bed being moist, a light dewing over with the syringe after hot days will suffice until they are rooted. Very light shading may be necessary for a few hours on bright days, but much depends upon the style of roof under which they are plunged, as it is better to have them a little brown in the leaf than soft and elongated at the close of the growing season. Smooth Cayennes, with which no one can easily be overstocked, may be detached from plants whose fruit is well advanced, potted into very small pots, and kept growing throughout the autumn and winter. Old stools containing a number of dormant buds may be shaken out and placed in very small pots, or they may be laid in a sharp bottom-heat with every prospect of some of them starting, if not before, certainly during the winter. The best plan, however, with these is complete defoliation and packing in a horizontal position in very shallow boxes lightly filled up with peat or leaf-mould. If lightly watered home and placed over a strong bottom-heat they will require very little more attention until the young plants begin to appear through the surface. All scarce varieties may be increased in this way, the main point being a strong moist bottom-heat.

PEACHES.

If the lifting or root-pruning of the trees in early houses is contemplated now is the time to make active preparations for carrying out the work. Where exhausted trees have to be replaced by others from open walls, this operation, as a matter of course, must stand over for the present, as it would be suicidal to lift before the crop is cleared or the flower-buds are properly formed; but very few, I presume, who have had much experience in early forcing trust to such trees for giving Peaches in May when a general transfer from succession houses is so easily managed. The gap at the end, naturally and necessarily, is made good from the outside, and then even the trees are kept annually root-lifted against the reserve walls. The management of Peaches, not only under glass, but also against open walls, is now reduced to a fine art, but if one link in the numerous details is weaker than another, it is that of annual root-lifting, shortening and relaying the points in fresh compost. The work is quickly performed, and the small quantity of soil required for placing in the trench can generally be found or manufactured by those who know and appreciate its value. Stiff calcareous loam from an old pasture field or the roadside contains all the elements really essential to the production of the most healthy wood and the finest fruit. If too heavy or retentive it may be corrected and made pervious to the free passage of water by the addition of burnt clay and lime rubble, lime being absolutely necessary to the formation of the stones. If too light, dry, finely-pounded marl will give body, which may be fortified by the addition of bone-dust or a little thoroughly decomposed manure. The latter, however, should only be used in extreme cases of poverty, as it is better to have the compost too poor than too rich, and to give the necessary support by mulching and feeding when the fruit is swelling. Another important matter in dealing with the roots of Peach trees is making the compost very firm by steady ramming until it is as solid as the field from which the loam was taken, for much as the roots enjoy water they do not care for it in stagnant suspension or fleeting dribbles. The rammer is a dangerous instrument in the hands of the novice, but it can be used for forming and solidifying the root bed, and when the roots are re-laid the compost can be flooded home by copious supplies of tepid water, the best of all rammers for settling the soil amongst the tender roots and spongioles of growing fruit trees. Good drainage, the first and most important item in the formation of all fruit-tree borders, secured, the space left for the reception of compost may range from 24 inches in depth, where the staple is heavy, to 30 inches, where it is light. Beyond this depth no one need

go, as it is better to keep the roots near the surface and mulch well than to allow them to descend, as so often happens when mulching is neglected.

Succession houses.—Trees cleared of fruit in July and the early part of August, having ample time for ripening their wood, must have a profusion of air by night and day, but unless they are old, make very little growth, and flower-buds predominate, it will neither be wise nor necessary to strip the roof-lights off the house. They must be kept thoroughly moist at the roots by copious watering, or, better still, by drawing off the lights when thunder-rain is falling, a heavy storm often being a godsend in cleansing and refreshing the foliage, which should be kept hanging until the buds are perfect. Persevere in the removal of all breast-wood from trees now ripening up crops of fruit, and pinch the points out of shoots which will be cut away after the trees are cleared. Gather fruit early in the day when dry and cool, and for home use a matter of twenty-four hours before it is wanted. A Peach up to a certain stage is brisk and sprightly, but once it becomes dead ripe upon the tree and is in danger of falling, the condition of which the editor of this journal complains has set in, and the fruit is past its best.

Late houses, in which the trees are carrying good crops of fruit, owing to the scarcity of Pears, Plums, and early Apples, will be exceptionally useful this season, and those who have a thoroughly good assortment of varieties like Barrington, Prince of Wales, Walburton Late Admirable, Raymacker's (a Peach much resembling Walburton, but quite distinct), and Teton de Venus Peaches, Victoria and Humboldt Nectarines, will be able to keep up a supply of superb fruit until the end of September. These trees, it is hardly necessary for me to say, should be kept exceptionally thin, not one single fruitless shoot being retained which will not be wanted next season. Also they should be grown in sound loam, not over rich, in which the rootlets will have to work for their sustenance, otherwise the thorough maturation of the wood so essential to success will be found a difficult matter. Root-lifting in this house, be the roots inside or out, should always be performed before the trees show signs of becoming gross; annual shortening, in fact, is the proper course.

WORK AMONGST HARDY FRUITS.

The gathering of early hardy fruit in many gardens will not be a heavy business; but the little we have will be extra valuable especially where large desserts are required and glasshouses are not over-abundant. Early Pears and Apples should be gathered before they are dead ripe, and later sorts worth netting must be protected from birds, more than ever numerous, now we have very little for them to devour. Wasps too are very troublesome, and notwithstanding the fact that the gas tar remedy is as efficacious as it is simple, still they come in plenty. Peaches, now beginning to ripen, must have full exposure to sun and light, not by the removal of the foliage, but by partial shortening or turning the leaves aside. The points of many of the shoots marked for removal when the crop is gathered also may be pinched, not only to throw size into the fruit, but also to let in light and air where the foliage, unusually fine and plentiful, is producing too much shade. We generally give our trees a heavy hosing root and branch when the Peaches commence the last swelling, cover up the wall paths with an additional supply of fresh stable litter, and enclose all the trees with hexagon netting. The heavy thunderstorms have thoroughly washed the foliage already quite free from spider, and the roots are in the best possible condition, but the fruit must be protected by hexagon netting kept specially for this purpose, walking space the whole length of the walls being secured by means of slating laths resting against the coping and let into the border 4 feet from the foot of the wall.

Root-lifting and relaying this year will be a heavy operation, as fruit trees of all kinds lightly cropped are making rather too much wood. This work fortunately, or, correctly speaking, unfortunately, may be commenced earlier than usual, and despatch

being imperative, the new material, including loam, lime rubble, burnt clay, and by those who can afford it crushed bones, should now be got ready for use.

STRAWBERRIES may still be planted, but unless extra strong and good they must not be expected to produce much fruit next season. One of the best preparatory crops for Strawberries is the Potato, which necessitates summer culture admirably adapted to the amelioration of the heaviest and most tenacious soils. Manure and other stimulating fertilisers may be forked in very freely, but on no account must the bottom spit, well worked and enriched last winter, be brought to the surface, as trees so treated form masses of small rootlets which will stand any reasonable amount of feeding when the fruit is stoned and swelling.

PLUMS.—All the early and midseason trees, as a matter of course, will now be out of doors, and Golden Drops, late Gages, with a few others will have the house to themselves. As these, like the late Peaches, will be found invaluable, they will well repay all the attention that can be given in the way of feeding with good top dressing and diluted liquid, close pinching to let in sun and light, and last, but not least, cleanliness, including freedom from insects. If in pots or tubs and retarding is thought desirable, they must never feel the want of water, and the better to prevent the balls from becoming parched or partially dry they may be completely mounded over with short straw, rotten leaves, or the like, which will keep them cool as well as moist. Syringing is no longer practicable, but spider may be kept in check by sponging affected leaves with soap water, and light fumigating for the destruction of aphids may be permitted until the fruit is nearly ripe. Golden Drops under glass, like Muscat Grapes, are greatly improved by indirect exposure to sunlight, and they must have an abundance of fresh air, but on no account must the wily blackbird or the gluttonous wasp have access to the house. Filchard netting drawn completely over the ventilators will exclude the birds, but wasps being unusually abundant and their outdoor food by no means plentiful, Haythorn's hexagon netting will be found the best and cheapest in the end.

LATE FIGS.—Early and midseason houses being clear of fruit and undergoing their annual roasting are quite able to take care of themselves, but late trees now in full bearing must be protected from wasps, bluebottles, and stagnant moisture. Here again Haythorn's netting comes in; in fact, it is the only material through which moisture passes freely, and with this even over the ventilators we sometimes find it necessary to gently warm the pipes. Figs will stand any amount of heat and moisture during the time they are swelling, but once they have attained full size and show signs of colouring they cannot easily be kept too dry. Root-watering so long as the fruit is swelling is imperative, but trees having a good root-run can be kept a long time in condition where mulching receives careful attention.

W. C.

Grapes losing their colour.—It is a well-known fact that black Grapes ripened in May or June soon lose their colour through the influence of the sun, while the golden colour of such kinds as White Muscat, Buckland's Sweetwater and others becomes more intense. The Vines have plenty of fine foliage, which helps materially to preserve the dark colour. Still, after two months hanging since they were ripe, the blackness is gradually giving way to a brown shade. I have placed between the sun and each bunch a sheet of dark blue tissue paper, which has always proved satisfactory in helping the Grapes to retain their dark colour. The foliage and wood are thus left to the full benefit of sun and light, thus enabling the Vines to ripen their buds for the following season. I have practised this method of preserving Grapes during summer and autumn for many years. I have often noticed how much late Grapes have suffered when kept by means of bottles and water in glass structures or in rooms where light was freely admitted. Colour did not only deteriorate, but weight and flavour also were materially affected. Grapes which were ripe last

October, kept in dark cupboards where air could be admitted if desired, have lately been used and acknowledged by competent judges to be of excellent flavour, certainly better than when they were bottled. I expect by the aid of paper to keep Black Muscat, Black Hamburgh and Madresfield Court varieties quite black until October.—M. I.

ORCHIDS.

W. H. GOWER.

COMPARETTIAS.

THIS is a small genus of beautiful Orchids, and I have observed several kinds flowering during the past season in one or two collections round London. If better known they would be more largely grown than they are at present, especially as the flowers of some of the kinds rival those of the beautiful *Sophranitis* in the



Comparettia falcata.

brilliance of their colours. *Comparettias* are small growing plants, remarkable for the long double spur to the flowers. They have small bulbs and leaves, and are usually treated too kindly on account of their small size. This kindness consists in keeping them too hot, in exposing them too much to the sun, and in keeping them too dry. I have always succeeded best with these plants by placing them in the *Odontoglossum* house during the summer months, and removing them to the cool end of the *Cattleya* house in the winter. Some growers tell me that they keep them in the coolest house all the year round, but my own experience has been that the plan of moving them to a slightly warmer house in winter is the most desirable. I should, however, be glad to hear what has been the practical experience of some of the readers of *THE GARDEN* with these beautiful gems of the Orchid world. *Comparettias*,

I feel persuaded, do not like their roots to be smothered with Moss or other material; a little is quite sufficient, and while it remains in a sweet condition it retains plenty of water about them. If the roots are always wet the plants soon go wrong. I have been most successful with these plants when I have grown them upon almost a bare block of wood, and I believe this is most nearly in accordance with their natural condition, but then in our houses they need double the care to dip them and sprinkle them with the syringe in order to keep a sufficient humidity about them. The next best system is to grow them in shallow pans, which can be hung up near the roof glass. These pans must be well drained, the plants placed amongst the drainage material, and a little Sphagnum and peat fibre placed about the plant to make it firm, for one of the greatest obstacles to successful cultivation is to have a plant loose

and shifting its position every time the block or pan is taken down. The plants should be hung up in a shady position, but if such an one cannot be found, then they must be well protected from the sunshine, for they love the shade, and, as before remarked, plenty of water during summer. If the plants are to remain permanent ornaments to the collection, they must not be allowed at any time in the year to get dry. I am much inclined to the belief that when I am told such and such a plant does not last long under cultivation that the fault lies with the cultivator. Want of water during winter is one of the readiest ways to destroy *Comparettias*.

C. COCCINEA.—This is a charming kind, which used in days gone by to be more common in our collections than it is at present; its bulbs are small, and its oblong leaves are thick in texture and deep green; the scape bears several flowers of intense brilliancy; the sepals and petals are small, orange yellow, bordered with white, the lip large, and brilliant orange-scarlet in colour, the spur long and slender, and of the same tinge of colour. It blooms during the autumn and winter months, at which season this bright and vivid colour is very showy and attractive.

C. FALCATA (see illustration) is another pretty plant, which was introduced to cultivation upwards of fifty years ago and before *coccinea*. It is somewhat stronger in its growth, the bulbs and leaves being larger and stouter. It is a free-blooming plant, its spike bearing a raceme of from six to nine flowers of a beautiful purplish-crimson. Its usual flowering season is during the spring and summer, but flowers of such a lovely hue are welcome at any time. It comes from Peru and Columbia.

C. MACROPLECTRON.—This is a plant of somewhat recent introduction, and leads me to hope we have yet more beauties to receive. It is a stronger growing plant than any other species, and its flowers are quite distinct in colour. A coloured plate of this plant, given in *THE GARDEN* of April 21, 1883 (Vol. XXIII., p. 356), will give my readers some idea of its extreme beauty. The scape bears five or six flowers, which are of a rich rosy hue, becoming almost magenta towards the base, where they are spotted with purple; the small sepals and petals are rose, covered with rosy-purple dots. This plant flowers during the summer, and comes from New Grenada.

C. SPECIOSA is another kind with bright coloured flowers from Ecuador. It is a small-growing species, requiring a good deal of care and attention to

maintain it in good condition. The flowers are large for the genus, rich cinnabar-red. It is a very rare plant.

Stenia fimbriata.—This is a remarkable species and very scarce; on this account I am the more surprised to receive such a rarity without name of sender or any distinguishing mark; indeed I cannot but consider it carelessness when I receive flowers, as I frequently do, without the slightest indication from whence they come. The species in question was introduced some years ago by M. Linden, of Brussels; the flowers are yellow; lip beautifully fringed, with some dark blotches at the base. I believe it comes from Ocaña, and therefore should thrive in the cool house.—W.

Coryanthes maculata.—A flower of this plant comes from a French reader for name, asking if it is a Stanhopea. I am glad to see this genus again coming into cultivation. It requires full exposure to the sun, whilst Stanhopeas require shade and less heat. The flower before me has the ground colour pale yellow; the curiously shaped, large hood is tinged with purple and spotted with purplish violet. It is one of the most extraordinary flowers to be found amongst the many eccentric forms assumed by the Orchid family.—G.

Cypripedium Schlumi albiflorum.—Flowers of this gem amongst the Columbian Slipper Orchids come from "J. M. B." It, like many other species which have come to me lately, appears to be somewhat out of season. This species and its variety do not appear to grow so freely as many others. I believe it requires more heat than is usually accorded it, for the best plants I have ever seen were grown by Mr. Cowley in Mr. Tautz's collection at Shepherd's Bush, where it appears to be quite at home in the East Indian house with the species from the Indian Islands. It also, I believe, requires a large amount of moisture. The flowers before me are very chaste, being pure white saving a tinge of rosy-pink in the lip.—W. H. G.

Cattleya and Lælia flowers.—I have received from Mr. Smith, gardener to Mr. Moss, of Southampton, a box containing flowers of several species and varieties of Cattleyas not so generally grown as they should be. Amongst them are forms of *C. Loddigesi*, of which I had occasion to speak last week. It is truly a beautiful kind, and the flowers last a long time in full beauty. Another is *C. maxima Backhousiana*, a very fine variety with large blooms of a rich rosy-purple hue; lip large, deeper in colour, with a broad streak of yellow on the disc, the edges beautifully frilled. This species appears to be flowering early, as I have usually considered it to be a late autumn bloomer. Mr. Smith also sends a series of forms of *Lælia crispa*. This plant I have known to be for many years a great favourite in the neighbourhood. I remember years ago, when a magnificent display of this species was to be seen in the gardens of Miss Pearce at Bassett. They were the finest plants ever seen. Amongst those now before me is a form with very large flowers, the sepals and petals snow-white; lip very large, especially the side lobes. The front lobe is destitute of the rich purple so conspicuous in the typical plant, but here delicate rose, the throat and basal part being lemon-yellow. Another form has a long and broad front lobe to the lip wholly rich deep purple. This set of flowers of *L. crispa* shows that if the old species were to receive as much attention as some of the more modern kinds, many distinct and beautiful varieties might be obtained, and Orchid houses during the autumn months would in consequence become gay and more interesting.—W. H.

Saccolabium Blumei.—I recently was shown a beautiful specimen of this plant bearing fourteen long racemes of blooms. It was a charming and elegant sight; the plant was in the best of health and was growing in a hanging basket hung near the roof glass in a stove filled with Crotons, Dracenas, and many flowering and ornamental-leaved plants. It is a mass that was sent home from Burmah about three years ago by a man who really knew nothing of Orchids, but he was so struck with its beauty that he sent it to a friend. The plant

arrived safely, and has grown well in an ordinary stove. The flowers are beautifully dotted and spotted with deep magenta-rose, the lip being of a more delicate shade. These flowers continue in beauty some two or three weeks if carefully treated and are truly elegant. Anyone possessing a stove can adorn the roof with these gems.—W. H. G.

Lælia purpurata aurea (W. F.).—The flower sent is more like one of this variety than anything I have seen, and it resembles a figure of this in the "Toscana d'Ortic," 1886, t. 12. It is a form with very narrow sepals and petals, streaked with flesh colour, the lip being curiously streaked and highly coloured. I do not call it a very pretty variety, but it is certainly exceedingly curious. It may prove better another season.—W.

Lælia Lindleyana.—This is a slender-growing, rather pretty species, which one seldom sees. I saw both the largest plant and the finest variety which has ever come under my notice last season in the Botanic Gardens at Rouen. The flower now to hand from "W. F." very much resembles that variety. It measures fully 4 inches across; the sepals and petals are white, flushed with pale rose, but they are narrow and do not form a good flower; the lip is of nearly the same colour, with a blotch of deeper purple on the middle. The plant was sent to Kew some years ago, during the time I had the superintendence of the Orchid and various other collections in those gardens, and it was, I think, there first flowered in Europe by me. The plant came to Kew from the port of Bahia, but I do not know if it was found in that district, although it came with other plants that were found there.—W. H. G.

THE FRUIT CROPS.

WESTERN DIVISION.

Tremough, Penrhyn, Cornwall.—The Apple crop here is a very poor one, with the exception of a few varieties, notably Cornish Aromatic, which rarely fails and is the best all-round Apple we have. Lord Suffield is also good, but really high-class Apples are very scarce. In the neighbourhood some orchards are almost a failure, while others have good crops, but these are generally of local and inferior varieties. Pears, a very thin sprinkling, except on Louise Bonne of Jersey. Plums worse than the Pears, if possible; but this is not a Plum district. Figs good crop. Small fruits abundant; Strawberries heavy crop of fine berries. Gooseberries good, excepting some plots attacked by birds, and almost denuded of fruit buds. Raspberries very scarce with us, but plentiful generally.—R. GILL.

Iwerne Minster, Dorset.—Apples much below the average. There was plenty of blossom, but it was poor, and therefore did not set. The best crops are upon espaliers of free-bearing kinds, such as Hawthornden, Stirling Castle, Lord Suffield, Ecklinville Seedling, Margil, Pearson's Plate, and a few Russets. Pears are also much below an average, and what he have got are chiefly upon walls and espaliers, where the young wood and fruit buds got better matured than would be the case on pyramids or standards in the cold and wet autumn of last year. Principal bearing kinds are Marie Louise d'Uocle, Thompson's, Louise Bonne of Jersey, Williams' Bon Chrétien, Beurré Diel, and a few more of the good Beurrés. Plums are a fair average; Green Gages, Washington, Jefferson's and Golden Drop on walls, and Victoria and Magnum Bonum (Red and White), also Orleans, on standard trees. Damsons are also a fair crop. All trees have suffered much from blight. Peaches and Nectarines are not grown outside here, and in the neighbourhood the few trees which are grown do not receive the attention they require. Cherries will not do in our chalk soil, and even if we substitute suitable soil it soon becomes impregnated with chalk. The same may be said of Apricots. Figs are not grown in the open air. Currants of all kinds are plentiful. Gooseberries are also abundant. Strawberries have been very good; I have

been gathering since June 15; they were a most abundant crop. Walnuts, only a few. Filberts also scarce.

PEAS have grown vigorously and yielded abundantly; G. F. Wilson and Veitch's Perfection are especially fine and delicious in flavour. French Beans plentiful crop. The kinds usually grown here are Canadian Wonder, Negro Longpod, Fulmer's Forcing, Ne Plus Ultra, and Syon House. Cauliflowers have turned in well; Veitch's Early Forcing has been in use since June 14. All other vegetables have done well. Potatoes are an abundant crop, and only a few tainted with disease. This is a locality well suited to the growth of Potatoes. The principal kinds in cultivation are a good early Ashleaf, Early Rose, Beauty of Hebron, Schoolmaster, Vicar of Laleham, Sutton's King and Sutton's Abundance for late sorts. Magnum Bonum seems to have degenerated much here.—P. DAVIDSON.

Marston House, Frome.—Apples are a very light crop both in the gardens and orchards. All flowered abundantly, but as far as my experience goes only the pruned or garden trees are at all fruitful, and there are large orchards in this district that will not furnish a sack of fruit. The cultivated trees had less bloom, but this was stronger and more perfect than was the case with orchard trees, that on the latter being of a flimsy character and dropped off wholesale. Caterpillars were also very thick on many trees both in gardens and orchards, and these spoilt numerous clusters of fruit. Our best crops are of Keswick and Carlisle Codlins, Kentish Fillbasket, Gravenstein, and King of the Pippins. Pears are very partial; some trees are carrying good crops, others have not a good fruit on them. Jargonelle flowered grandly, and we have a heavy crop. The trees of Marie Louise, Beurré Diel, Josephine de Malines, Vicar of Winkfield, Pitmaston Duchess, Maréchal de la Cour, and Duchesse d'Angoulême are also well furnished with fruit, all these being against walls. Apricots generally are a good average crop, and are ripening well. Peaches lost nearly all their foliage by blight, but they have rallied well and a good average crop will be had. Plums very much blighted at the outset, and the standards have failed badly. All the trees against the walls were not so seriously crippled at the outset, and a capital crop will be taken. De Montfort, Oullin's Golden, Dry's Seedling, Green Gage, Victoria, Magnum Bonum, and Jefferson's will yield the best crops, the first named being very forward. Cherries generally were plentiful and ripened early. Governor Wood and Florence are keeping well, and Morellos are fairly good. Figs did not ripen their wood well last season, but the Brown Turkey is yet very prolific. The crops of Gooseberries, Red, White, and Black Currants, Raspberries, and Strawberries were all very abundant, the Gooseberry bushes under a permanent wire netting-covered structure being over-weighted by fruit. Laxton's Noble and Sir J. Paxton have proved the most profitable Strawberries grown in this district. Medlars are thin, and there are scarcely any Walnuts or Filberts.—W. IGGULDEN.

Stoke Edith Gardens, Hereford.—Apples are a total failure in this neighbourhood, and very few trees are bearing in these gardens, the most noticeable being Juneating, Margaret, Kerry Pippin, Lord Grosvenor, Warner's King, Stirling Castle, and New Northern Greening. Pears are a very thin crop indeed, and the only varieties carrying anything approaching a crop are Souvenir du Congrès, Beurré Giffard, Beurré d'Amanlis, Althorpe Crassane, and Beurré Superfin. Plums—some few varieties such as Jefferson's, Victoria, Prince of Wales, Washington, and Kirke's Black are bearing half a crop; all others are a total failure. Apricots are a good average crop. The fruits are clean and healthy, and are just commencing to colour. Of Peaches, Stirling Castle is the only variety bearing, and of Nectarines we have none. Cherries—May Dukes have borne well, but all other sweet varieties with the exception of Governor Wood are quite a failure. Morellos are again bearing excellent crops of fine fruit. Strawberries

have been all that could be desired, the crop having been an abundant one, the berries large in size, well coloured and of first-class flavour. Bush fruits of all kinds are carrying heavy crops, Red Currants and Raspberries being especially fine. Nuts are quite a failure.—A. WARD.

Trelissick, Truro.—The season in general has been the best we have had in this neighbourhood for many years. Apples and Pears very good. Plums only moderate. Cherries a good crop on the walls, but nearly all stolen by squirrels. Strawberries were badly scorched at flowering time, so only gave a middling crop. All bush fruits under permanent wire net are carrying the best crops we have had for years. We cannot grow Apricots in West Cornwall except under glass. Peaches and Nectarines out of doors a splendid crop. Trees looking healthy and clean, very free from the curl and blister that affected them so badly last year, and which were caused, in my opinion, by cold blighting easterly winds and hail showers in April. I have never protected our Peach trees, and the crop has never failed for thirty-one years.—W. SANGWIN.

Down House, Blandford.—Apples, the smallest crop for several seasons, numbers of trees having nothing on them. I never remember seeing such an abundant show of blossom as we had last spring and such a small quantity of fruit, probably owing to the wood not having been sufficiently ripened last season. We had no frost when the trees were in flower, and the blooms opened later than usual. Pears the same with very few exceptions. Plums very good, especially the Gage, Golden Drop, Jefferson's, Kirke's, and Blue Impératrice. Cherries moderate. Gooseberries, splendid crop. Currants and Raspberries good. Strawberries very good. Medlars and Filberts moderate. Apricots protected when in flower by glass coping are good.—THOS. DENNY.

Sherborne Castle, Dorset.—Fruit crops in this locality are, with few exceptions, much under the average. Trees of all sorts blossomed well, but very weakly. Apples are very thin, with the exception of a few of the early kinds, such as Lord Suffield, Duchess of Oldenburg, Keswick Codlin, Manks Codlin, and Kerry Pippin. Pears are very thin and much deformed. Apricots above the average. Plums very partial; the following sorts are heavily laden: Early Prolific Wilmot's Early Orleans, Pond's Seedling and Jefferson's. Peaches and Nectarines are very thin, but I am pleased to say that the young wood is in good condition. Morello Cherries are plentiful; other varieties do not thrive in this neighbourhood. Bush fruits are scarce, excepting Raspberries, which are very abundant. The Strawberry crop has been a grand one; King of the Early is the favourite. Nuts, few.—W. G. PRAGNELL.

Compton Basset, Calne, Wilts.—The Apple crop in this district is very uneven. In our own orchard there is not a twentieth part of a crop, but in an orchard close by there are heavy crops; taking the district generally, there is not a good crop. Pears are better than they promised. Of early varieties we have a fair crop of such sorts as Citron des Carmes, Doyenné d'Été, Louise Bonne of Jersey (extra good), Jargonelle, Williams' Bon Chrétien, Marie Louise. Late sorts, which are more valuable, are not so abundant, Ne Plus Meuris, Autumn Bergamot, Winter Nelis, Duchesse d'Angoulême, Catillac, Doyenné du Comice, Bergamote d'Espéren, Thompson's Bergamot, Glou Morceau, Knight's Monarch are all average crops. The other sorts are not so good. Early Cherries are a complete failure (ours is not a Cherry soil); Morellos an average crop and of good quality. Plums an average crop, Jefferson's, Victoria, and Kirke's being heavily laden. Apricots nearly a failure. Peaches about the same. Quinces a failure. Damsons a failure. Bush fruits: Currants, Red, White, and Black, heavy crops. Raspberries and Gooseberries good crops. Strawberries were a very heavy crop, but the fruit of late varieties rotted through so much rain. Walnuts nearly a failure. Cob nuts a complete failure.

During March and April many complaints were made of slugs amongst the vegetables;

but since then and up to the present, delightful weather for all crops has been experienced. We had warm days and nights during May, which brought vegetation rapidly forward. We have now vegetables of all sorts in great abundance and of good quality. Cauliflowers and Cabbages are good. Potatoes here are good, and there is no disease at present, but there are signs of it on Beauty of Hebron. Onions are good, and the late rains have helped them. Parsnips and Carrots are looking wonderfully well, as also are Beans, Broad, French, and Runners, and Haricots. Vegetable Marrows have never done better. Asparagus did well and is making splendid growth. Leeks, Lettuce, and other salads have had a good time. Celery is looking uncommonly well, as are all winter and autumn plants. We have been using some early sown Veitch's Extra Black Beet, the most beautiful in colour and flavour of any I have ever seen. Turnips have been inclined to bolt, but with frequent sowings we have had a good and constant supply. Plants of Brussels Sprouts that were put into their quarters during May have never looked better than at the present time. Those planted later are equally good; in short, all crops appear to be in the best possible health. If we do not get too much rain we may expect to fill our sheds and keep the tables supplied with vegetables of fine quality.—W. A. COOK.

Killerton, Exeter.—Apples are generally below the average in the orchards here. Pears are good on walls, but scarce on pyramids. Cherries good. Apricots very good. Strawberries very good crop. Gooseberries, Red and White Currants are very good. Raspberries and Black Currants are not so fine as usual. Filberts are plentiful. Walnuts scarce.

POTATOES very good in crop and quality, and so far free from disease. Late crops very promising, but we are now having too much rain for them.—JOHN GARLAND.

Onslow Hall, Shrewsbury.—The fruit crops will be rather under the average this season, owing, no doubt, to the sunless autumn. The wood and fruit-buds were not properly matured, and the blight attacked all kinds of fruit trees after passing through one of the finest, driest, and most promising springs we have had for a long time. Apples very thin, Fearn's Pippin, Warner's King, Irish Peach, and a local cooking Apple being the best. Pears almost a failure, Aston Town being the only one in the open carrying a good crop. Marie Louise, Beurré Bosc, Beurré Diel, Anna Nelis, Easter Beurré, Doyenné du Comice, Souvenir du Congrès are among the best on walls. Apricots a failure. Peaches failure, not many grown outside; the sappy wood was killed by early autumn frost. Cherries heavy crop, especially the Morello. Plums of all sorts abundant, but disfigured badly by blight. Figs on walls look very promising. Strawberries were very good and the fruits large during the early part of the season; but later on became small, and were soon over owing to the want of rain. Red and White Currants very fine crops, but Black badly blighted and very poor crop. Raspberries good, Bampton's Seedling proving the best.—JOHN LAMBERT.

Inwood House Gardens, Henstridge, Blandford.—Fruit crops in this district are an average on the whole, except Apples and Pears, and although they had plenty of bloom on them, this all seemed to drop off as soon as fertilised, especially among the cider Apples in cider orchards where the trees are crowded. I consider the un-ripened wood is to blame. Peaches and Nectarines are an average crop, but the trees were much blistered in early spring with cold winds. Cherries on bushes and on walls are above an average, and very fine fruit. Plums an average crop. Nuts, both Filberts and Cob, scarcely any at all. Bush fruit most abundant. The new Raspberry Superlative is an excellent cropper, very large fruit, and capital flavour, and makes a fine dish on the table. Strawberries a wonderful crop, although they did not last long, the sun being too powerful for them, except in the case of plants that were watered. Laxton's Noble, very large variety, but of

poor flavour. Waterloo is a good cropper, splendid large fruit, nice flavour. It is rather late and a first-rate traveller, and looks well dished up. Figs on walls outdoors good crop.

POTATOES look remarkably well in this district. The early varieties yielded abundantly, and the tubers were excellent in quality and of good size. Late kinds also look well, and there will be a good crop if disease keeps off. I have noticed some specks of disease on the foliage of the Snowdrop variety and M.P., but other sorts appear quite safe as yet.—THOS. WILKINS.

Witley Court, Stourport.—In this district the fruit crops generally, and especially so of Apples and Pears, are the poorest that can be remembered by the oldest inhabitant. Apples are a complete failure, due in a great measure to the un-ripened state of the wood consequent on a wet and sunless summer, for although the trees flowered fairly well, the individual blooms were weak, puny, undeveloped, and deficient of pollen. The flowering stage was followed by an attack of caterpillar, which in most instances denuded the trees of their foliage and also of what little fruit that had set. Pears to a great extent escaped the ravages of the caterpillar pest, but the crop is a light and partial one. Plums, Damsons, Peaches, and Nectarines are fairly good crops, but these are partial. Plums and Damsons suffered very much from the effects of a severe hail-storm in the last week of May. Bush fruits, with the exception of Black Currants, are plentiful. Strawberries most abundant, the quality excellent. Cherries, of which there are large quantities grown in this district, are almost a complete failure.—JOHN AUSTEN.

Longford Castle, Salisbury.—With the exception of Apples, Pears, and Plums (excepting trees of Green Gage, which were protected when in flower), the fruit crop for the year 1889 is a fairly good one. To the very imperfectly ripened state of the wood of last year is to be attributed in a great measure the scarcity of Apples, Pears, and Plums generally, for although the trees were well furnished with fruit blossom in spring, the flowers were puny and the wood badly ripened. The following varieties of Apples are bearing very heavy crops, the trees being espaliers: King of the Pippins, Mère de Ménage, Nonpareil, and the good old Keswick Codlin. Of the Pears, Williams' Bon Chrétien, Glou Morceau, Chaumontel, Josephine de Malines, Knight's Monarch, Beurré Gris, and Louise Bonne of Jersey. Of kitchen Plums, those certain cropping varieties Victoria and Pond's Seedling are bearing good crops. Green Gages on east walls, and which were (as stated above) protected with roller blinds when in flower, are heavily cropped, the trees being clean and vigorous. Bush fruit and Strawberries are and have been very abundant. Early and late Cherries are good crops. Black Tartarian is a large, handsome Cherry, and a good cropper. Apricots are a good average crop.—H. W. WARD.

Glewston Court, Hereford.—I am sorry to state that the Apple crop is a failure in this neighbourhood. The trees bloomed most profusely, but owing to the serious attacks of caterpillars, both bloom and foliage were devoured by these pests, very few trees escaping their depredations. Pears are in the same condition from the same cause. There are a few fruits on walls and on a bush tree or two, but they look unhealthy. Plums out in the open quarters are very poor. Like the Apples and Pears they bloomed well, but were sadly injured by caterpillars and afterwards by aphids; trees on walls are bearing an average crop. Denbigh Seedling or Cox's Emperor has a heavy crop. This variety is worthy of more extended culture. Cherries set a good crop, but the greater portion fell off at stoning time. Morellos are much under the average and small in size. Gooseberries are a heavy crop of good fruit. Raspberries two-thirds of a crop, which would probably have been larger if the birds had not been so hard on them, owing to the dry weather at ripening time. Red and White Currants a heavy crop, but much reduced by birds. Black Currants one-third of a crop.

Strawberries a very heavy crop of fine fruit, good in every way, Loxford Hall and Sir Joseph Paxton being especially fine. Keen's Seedling the worst we had this year. Peaches, Nectarines, and Apricots an average crop. Taken altogether it is a poor year for fruit here.—S. S. WRIGHT.

Tortworth, Falfield, Gloucester.—A more unfavourable report on the Apple crop of this season could not well be given. Roughly speaking it is a complete failure about here. Pears about one-third of a crop. Peaches and Nectarines are very good; the trees have not given us so much trouble to keep clean this year as they generally do. To ensure first rate flavour in Peaches they should not be gathered before they are quite ripe. Cherries are about half a crop. Strawberries abundant. Raspberries not so good. Plums are a very light crop. Gooseberries and Currants abundant and good. Quince crop a failure. Medlars abundant. Nuts of all kinds are a complete failure.—THOMAS SHINGLES.

Madresfield Court, Malvern.—The Apple crop in this district, owing to the cold, comparatively sunless season of 1888, coupled with a most severe and persistent attack of the caterpillar, which devoured leaves and flowers as fast as they appeared, is very partial. Apricots are nearly an average crop of good quality, but some branches dying. Pears are fairly good all round, and the favourite Doyenné du Comice is fruiting well. Plums a full average, but much blighted and attacked by aphids and caterpillars early in the season. Cherries of excellent quality, but only moderate crops; the Cherry orchards having fared badly, were a failure. Small fruits abundant and good all round. Strawberries were very abundant and of the finest possible quality. Laxton's Noble was the best as an early kind, and is a great advance on older varieties. For very early kinds, flavour is of secondary consideration generally.—W. CRUMP.

MIDLAND.

Walcot Park, Lydbury North, Shropshire.—Apricots under the average. Plums good average. Cherries good average. Peaches and Nectarines, none grown outside. Apples under the average; in some places entire failure. Pears under the average. Small or bush fruit very good. Strawberries were very good.—H. SENSECALL.

Warwick Castle Gardens.—Apples with few exceptions in orchards are a poor crop, while carefully cultivated young trees in gardens have a fair crop of good fruit. Pears an average crop. Plums good crop and trees clean, but in many places there is no fruit and the trees are much blighted. Apricots partial, and thin where they have fruit. Peaches and Nectarines an average crop. All small fruits, especially Strawberries, are abundant and of excellent quality.—A. D. CHRISTIE.

Eydon Hall, Byfield, Northampton.—Apples on orchard standards are a complete failure, while small bush trees, worked on the Paradise stock in the kitchen garden, are carrying heavy crops. Pears are also a failure, except a few kinds on walls. Apricots on south wall a medium crop; on west wall a failure. Peaches and Nectarines an average crop. The growth of the trees is also very clean and healthy. Plums are good, but not heavy. Cherries are fair. Gooseberries, Currants, Raspberries, and Strawberries very plentiful and good.—J. HUGHES.

Worden Hall, Preston.—The Apple crop in this neighbourhood is much better than we expected some weeks since, Keswick Codlin, Early Harvest, and a few local varieties bearing a full crop. Pears on walls are very poor, especially early varieties; some standards, however, are pretty well covered. Apricots under average; also Cherries, both sweet and Morello varieties. The same with Plums—some Damson trees a full crop, while others close by are quite bare. Gooseberries, Currants, and Raspberries plentiful and good. Strawberries have been a very heavy crop, the fruit being extra fine. Figs a fair crop, but they do not often ripen here out of doors. Nuts not up to the average. Peaches

and Nectarines are not much grown in the open about here. The trees suffered much this season on account of the wood being badly ripened last autumn. What we have and what I have seen are grafted on the Plum stock.—ROBERT FRISBY.

Glossop Hall, North Derbyshire.—Taken on the whole, this is by far the best season for fruit that I have seen in this district. Pears on such varieties as the Hesse, Williams' Bon Chrétien, Marie Louise, Louise Bonne of Jersey, &c., are very fine crops, and the trees clean and healthy. Other



A group of Scotch Firs. (See p. 167.)

varieties are a fair crop. Apples, with the exception of Lord Suffield, Manks and Keswick Codlins, and one or two others, are not particularly plentiful, many having dropped; quite one half of the fruit fell, owing to the long spell of dry weather which we have had, but plenty remain to make a good crop. The genial rains we have had of late have improved the size of the fruits considerably. Plums generally are a fine crop in this neighbourhood, some trees that I saw about a fortnight ago a few miles from here of Jefferson's, Coe's Golden Drop, Magnum Bonum, and Victoria being literally borne down to the ground with the weight of the crop, the branches having to be propped to prevent

them snapping off. Cherries of the Morello type are a grand crop and will be fine.—B. ASHTON.

Shipley Hall, Derby.—I may summarise the small fruit crops of this year as being by far the heaviest and most quickly over in my remembrance, a season calling forcible attention to the wisdom and necessity of growing both the earliest and latest varieties of any kind of fruit. This makes me wish to again pay tribute to the usefulness of Hélène Gloëde and Loxford Hall Strawberries grown under a north wall. In my report of last year, I wrote that on August 14 I had not commenced to gather from them, but I continued to do so late on in September, and as the main crop was a total failure through wet they were much appreciated, as no doubt they will be this season, the main crop being over in a few days. Crops of Apples and Pears, also the Plum tribe, are very partial in this locality, through late spring frosts.—WM. ELPHINSTONE.

Beaupre Hall Farm, Outwell, Wisbech.—The fruit crops in this district are much under the average, especially the early flowering kinds. The blossom opened late and with much vigour and profusion. Cherries, although abundant in blossom, set badly, and are a total failure. Apples are very thin and partial, the earlier kinds being a very thin crop. The varieties that crop best here are Keswick Codlin, Lord Grosvenor, Ecklinville Seedling, Blenheim Orange, Stirling Castle, Ringer, and Grenadier. Lord Suffield, Warner's King, Wellington are failures generally, canker almost the first year or so of planting. Only a few of the most hardy Pears are grown, the following varieties being good croppers in favourable seasons: Summer Bergamot, Williams' Bon Chrétien, Beurré d'Amanlis, and Hesse. The last is a general favourite and heavy cropper, but a partial crop this year. Gooseberries are largely grown, and their cultivation is fast becoming the chief industry of the neighbourhood; the crop this year was bad generally, owing to late frost and caterpillars. Strawberries and Raspberries good average crop, the former producing very fine fruit. Plums are much under the average, the kinds chiefly grown being Victoria, Rivers' Early Prolific, Czar, and Prince Englebert. Red and Black Currants are almost a failure. Peaches, Nectarines, and Apricots very little grown. The caterpillar was more numerous on the Apple this year than heretofore, a sign that it is fast making headway over the entire country. No precautions in any way are made to stop its progress in this locality.—P. CONWAY.

Knebworth Park, Herts.—If the very profuse blossoming of the trees had been a sure indication of a crop, then I should have had the pleasure of reporting a very heavy crop of Apples, instead of, as it is, lamenting an almost total failure. A combination of circumstances may have helped to bring about this failure, chief amongst which must be put immaturity of the buds through the lack of sunshine to ripen them last summer; at least the very imperfect state of much of the blossom pointed to this. Our trees when in blossom were much infested with the maggot and aphids. We had also several dull days with heavy rains at the time, which were in a degree contributory causes to the failure. On lighter and warmer soils in the district I have noticed trees carrying fair crops of Apples. With us Claygate Pearmain, Fearn's Pippin, and Nonsuch are the only kinds with anything like a crop. Keswick and Dutch Codlins, Hawthornden, and Norfolk Beaufin are the only other kinds, and these have thin crops. What is said regarding the Apples will apply equally to the Pears. On walls we have Williams' and Beurré d'Amanlis fairly cropped, while such varieties as Glou Morceau, Knight's Monarch, Thompson's, Bergamote d'Esperen, and Winter Nellis have very light crops. Of stone fruits, Plums are the only kind having a fairly average crop. Early Orleans, Reine Claude de Bavay, and Coe's Late Red on standards have good crops, and Jefferson's, Green Gage, Golden Drop, Washington, Pond's Seedling and Kirke's on west and north walls have an average crop. Apricots, Peaches, and Cherries, with the exception of Morellos, have

failed. Bush fruits, especially Red Currants and Raspberries, are with us the crop of the year, much over average and of excellent quality. Strawberries have been abundant and excellent, even on old plantations. La Grosse Sucrée, Thury, President, Sir Joseph Paxton, Dr. Hogg, and Sir Charles Napier are the kinds which do best here, President always carrying one-third more of a crop than the others.—J. KIPLING.

Abney Gardens, Cheadle, Cheshire.—Beginning with the Strawberries, here the crop has been poor, though the quality has been good, especially of President. In the district, however, the crop has been a good one. We have made a mistake in planting Sir Joseph Paxton here, a kind, though good, that will not do with us. The few plants of Noble which we planted last year showed that it is a likely kind to do, which seems to be its general character. Raspberries are an average crop and of good quality, though the promise for next year is not good at present, as the canes are not over-vigorous. Gooseberries and Currants are a poor crop with us, owing to the birds taking the buds in the spring. In the district, however, the crop seems to be a heavy one. Pears are under an average crop. Apples are a fair crop, though some of the kinds that were loaded last year have nothing on this, Quarrendens, for example. Lord Suffield seems a fine cropper; this year it is quite loaded; so are Hawthornden, Ribston, Kerry Pippin, and Cox's Orange. Plums are few, so are Damsons. Morello Cherries are an average, but dessert ones were a poor crop.—R. MACKELLAR.

Brickhill Manor, Bletchley, Bucks.—The fruit season of 1889 is now so far advanced as to enable one to form an opinion of each crop, whether good, bad, or indifferent. I never remember the months of April and May to be so free from frost. The wet, cold, and sunless season of 1888 is responsible for many under-average crops of fruit this year. The wood of Apples, Pears, Peaches and Plums never got thoroughly ripened; consequently the blossoms of these fruit trees were weakly, and the result was they quickly became a prey to aphides which attacked Peaches and Plums unmercifully. The trees are just now only recovering from their ravages. In this neighbourhood I am pleased to say we have again escaped the onslaught of the caterpillar amongst our Apple trees, but the crop is far below the average. Early kinds are all thin; the never-failing Lane's Prince Albert is carrying, however, its usual good crop of fruit. Plums on walls are an average crop. Peaches, as I have before stated in previous reports, do not succeed with us, owing to the nature of our soil which is very light and sandy; consequently we only cultivate a very few sorts and those under very adverse circumstances. Pears are much clearer in the skin than last year, but there is barely half a crop. The Strawberry is by far the finest crop of the year, being very abundant and good in quality. The kinds that succeed best here are Keen's Seedling, Vicomtesse Héricart de Thury, James Veitch, Lucas, British Queen, and Oxonian. The last mentioned still holds its own as the best late Strawberry I am acquainted with. We are now gathering fine dishes of fruit of this variety (July 20). Figs on walls are an average crop of good fruit. Apricots failure. Gooseberries, Red, White and Black Currants, abundant and good. Nuts almost a failure.—G. BLOXHAM.

Wycombe Abbey, Bucks.—The fruit crops vary very much this season in different localities, but they may fairly be said to be below the average. The Apple crop is very partial indeed about here. Pears decidedly under the average. Plums fairly good, Victoria being most abundant. Cherries very much under average; consequently, the price this year rules high. Peaches and Nectarines a light crop outside. Apricots very scarce about here, and very few Nuts or Walnuts. The foregoing result is even better than I anticipated would follow a sunless season like we had last year. Bush fruits of all kinds excellent in quality and quantity, excepting Black Currants, which are small and not abundant. Strawberries have been wonderfully

good and fine, and the runners on the plants promise well for forcing by-and-by.

ALL the crops in the kitchen garden department are very promising indeed. Early Potatoes abundant and good, no disease visible yet, but the prevailing stormy weather and heavy rains may be the means of bringing it on speedily. Peas and Beans very abundant. Root crops, as Onions, Carrots, Parsnips, Turnips, &c., promise to be first-rate, and all the Brassica tribe is growing vigorously, and promises to be abundant and good.—GEO. THO. MILES.

Addington, Winslow, Bucks.—The fruit crop this year, with the exception of Apples, may be said to be very satisfactory. Apples, as a general rule, showed plenty of fine healthy blossom, but all at once apparently the flowers seemed to turn brown and decay. On examination it was found that a very small caterpillar was the cause of the ruin of the crop; but for that the crop must have been a good one, for we had no frost to injure anything, not even a Potato top. Pears are a thin crop. Plums are plentiful, such kinds as Victoria, Cox's Emperor, Grand Duke, Duke of Edinburgh, Autumn Compôte, Green Gage, Kirke's, &c., fruiting well. Gooseberries plentiful, fine, and early. Currants of all kinds the same. Raspberries a good crop. Strawberries may be said to be the crop of the season, but their season was a short one. Sir Joseph Paxton, James Veitch, and President were grand. Peaches have done no good here for some years, and I do not know of anyone in the neighbourhood who has been successful out of doors.

VEGETABLES of all kinds are good this year, and so far I have not seen any symptoms of disease among the Potato crop. I expect a good crop at lifting time. We planted early, all finished by the 19th of March, and, fortunately, they never had a check. I do not think those who planted late will stand such a good chance.—JOHN MATHIESON.

Waddesdon, Bucks.—The most satisfactory item in considering the present season's fruit crops has been the crop of Strawberries of unusual quality. Our stock is confined to plants of one and two years old. In each case the crop was heavy and the quality remarkable. Noble led off with fine fruit, four days earlier than Early Prolific and Pauline, and a week before Black Prince and King of the Earlies. The above kinds were put out last August on the same quarter of ground. Pauline is a grand Strawberry for colour and flavour if gathered before it is too ripe, as it quickly becomes flat; King of the Earlies is an improved form of Black Prince, having all the good qualities of the latter and being a little larger; La Grosse Sucrée is not taken to kindly by some growers. I consider it first-rate as an early forcing variety, and when properly managed during the ripening period it is of very excellent flavour, and the same may be said of it when gathered in fine weather from the open quarters. Loxford Hall Seedling is another kind that has been in unusually fine form this season, and just following British Queen, which it much resembles, it prolongs the season with fruit of high-class quality. All other varieties have been unusually good, small fruits having heavy crops of good quality. Apples, Pears, Plums, and Apricots present a very different picture. Of the first named our trees suffered severely from the attack of caterpillar before the bloom was set. As soon as possible the trees were gone over with a mixture of soft soap and paraffin, dissolved in water, applied through the garden engine, and repeated in two or three days. This helped to clear the trees of insects. These remarks apply to pyramid and espalier trees only. The kinds of Apples carrying best crops with us are confined to cooking sorts; Lane's Prince Albert carries a fair crop; Cellini, Grenadier, Lord Derby, Lord Grosvenor, and Keswick Codlin each having about half a crop of smallish fruit; Lord Suffield, Warner's King, Manks Codlin, King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, and other free kinds are quite failures. Of Pears not many kinds are grown, the early kinds having about half a crop of indifferent fruit. Plums are also variable, Early Prolific, Victoria, Prince of

Wales, Prince Englebert, Reine Claude de Bavay and Reine Claude Violette carrying half crops; the same may be said of Damsons. Apricots quite a failure.—J. JACQUES.

Fulmer, Bucks.—There have been good crops of Strawberries, size and quality also good. Gooseberries have been good. Red Currants below the average, but the fruit generally clean and bright. Black Currants below the average, and the fruit small. Raspberries above the average, and quality good. Apples about here are very thin, but in favoured districts there are some very good crops. The fruit is small, the caterpillar having quite destroyed the leaves in many places round here. Some of the trees have been badly attacked with the caterpillar, and the trees had an autumn look, as there were scarcely any leaves on them. Plums and Pears were also attacked with the caterpillar, and the crop of each is much below the average.—W. MOWBRAY.

Kiddington Hall, Woodstock.—Apples very light crop; trees were covered with bloom, but blight attacked them just as the flowers were setting and most dropped off; what fruit is left appears to be swelling off well. Apricots a very fair crop, about average. Plums on walls are very abundant and swelling off well. Pears very poor crop, the best being Marie Louise and Louise Bonne of Jersey; other sorts very light. Morello Cherries are about an average crop. Bush fruits are all good, especially Gooseberries and Raspberries. Strawberries have been excellent both in crop and flavour. I may say I never saw such a crop. Nuts almost a failure.—F. Q. CLATWORTHY.

Old Warden Park, Biggleswade.—Apples are very thin, with few exceptions, the best crops being Fearn's Pippin, Cox's Orange Pippin, New Northern Greening, and Cellini Pippin. Pears poor, not swelling kindly. Plums are fairly good, the Victoria, Orleans, and Gage types being the best, but the trees have been very much infested with fly. Cherries a fair crop. Apricots thin. Peaches and Nectarines on unprotected walls fairly good; the leaves were very much blistered in the early part of the season, but are now healthy and clean. Strawberries have been a heavy crop and very fine, Laxton's Noble being the earliest variety, and the fruit very fine. Gooseberries, Currants, and Raspberries have been plentiful. Most kinds of fruit trees have suffered from a grub or maggot similar to that which does so much damage to Roses; consequently, the trees present a very ragged appearance.—G. R. ALLIS.

Hopton Hall, Wirksworth, Derby.—April showers prevailed through the month with dense fogs, sharp frosts, and cold east and north-east winds with snow and sleet. Thursday, April 18, was the hottest day of this year. Fruit crops generally good. Red and White Currants, Raspberries and Gooseberries abundant and fine. Wild Raspberries an enormous crop in the woods amongst young plantations. These are gathered and preserved wholesale by the villagers. Black Currants, fair crop and clean, were affected by the dry weather in June. Apples have set well—Nonsuch, Keswick, Hawthornden, Lord Suffield, and the never-failing Irish Peach being the best. Pears are poor, Marie Louise, Jargonelle, old Brown Beurré carrying a small crop. Plums good, as Dove Bank, Victoria, Golden Drop, Impératrice, Goliath, &c. Damsons in orchards round about heavily laden and clean. Strawberries very prolific; Laxton's First Early, Vicomtesse Héricart de Thury, and President, principal sorts. Stock is kept up by planting the pot plants after having been forced. President and V. H. de Thury are producing fruit plentifully now (July 23). Cherries—Late Duke and Morello carrying good crops, though small; other varieties cast their fruit.—G. BOLAS.

Workshop Manor, Notts.—The Apple crop with me is very much below the average, the best kinds being Lord Suffield, Keswick Codlin, Flower of Kent, Golden Noble, Minchal Crab, all of which are carrying good crops, while dessert sorts are very scarce this season, the best being Margil, Cox's Orange Pippin, and Sturmer Pippin. Pears very

poor crop, under average; the best are Jargonelle, Marie Louise, Louise Bonne of Jersey, Beurré de Capiaumont, Beurré Superfin; also several varieties of stewing Pears. Peaches and Nectarines, none out of doors. Apricots below the average, fruit fine in size, trees clean and healthy. Cherries, none grown. Strawberries and all bush fruit plentiful and good, better than for several years past. Plums a splendid crop of all kinds; also Damsons; in fact, the trees are almost broken down to the ground, this being the fourth season in succession. Nuts, none at all this year.—T. H. SUTTON.

Welbeck, near Worksop, Notts.—Enclosed I send you report of fruit crops here. All Apricots are grown on a south wall, 385 yards in length, and protected during flowering with glass. Peaches and Nectarines outside have no fruit on, and for my early supply I depend upon Peaches and Nectarines in pots. All trees under glass have good crops. Apples, Cherries, an average crop. Apricots average, all grown under glass. Plums average. Pears under the average. Peaches and Nectarines—none outside, over average under glass. Nuts—none. Strawberries over average, very good crop. Bush fruit over average, very good.—JOHN HORTON.

Thoresby, Ollerton, Notts.—Apples are a light crop; there was plenty of bloom, but it was weak and did not set, and what did set dropped off soon, and the caterpillar also attacked the trees. Pears are but a light crop also, though they promised when in bloom to be abundant. Plums are an average crop with us, but in the Plum district near there are very few. Apricots very few. We had no bloom in spring, and the wood was very green and not ripe. This may be the reason so many Apples and Pears never set properly. Strawberries were abundant and of excellent quality. Noble, Waterloo, and Jubilee are here all good on our light land; Noble has not stood so long as the other two. For a late Strawberry I find none like Oxonian. Gooseberries are plentiful and fine. Raspberries are good and of fine quality. Currants of all sorts are abundant.—A. HENDERSON.

Coddington Hall, Newark-on-Trent.—Both Apples and Pears in this district are thin on young trees, although upon old orchard trees the crop is fair. This difference I attribute to the fact that, owing to the unsatisfactory autumn of last year, the wood of the young specimens did not ripen; whereas that of the older ones, being more thin and wiry, got fairly well matured, and thus prepared for setting and swelling their crops. Plums in most gardens hereabouts are very scarce, although the bloom was very abundant, and as we had practically no frost during their season of flowering and setting, the cause of failure must be the same as with Apples and Pears. Apricots with us are few and far between, the sudden withering of the branches being common in this neighbourhood. Cherries are a poor crop, but Currants, Gooseberries, and Strawberries have been good. The crop of Strawberries has been the heaviest seen here for many years, but the fruit from beds planted last autumn quite eclipses that from two-year-old ones, both in the matter of size, colour, and flavour. Raspberries are thin.—JOHN CRAWFORD.

Newnham Paddox, Lutterworth, Warwickshire.—Apricots are very thin; the blossom was weak and did not set well. Peaches are a poor crop; the wood did not ripen last year owing to the wet, sunless season. The leaves did not blister much this year, and the growth is in every way satisfactory. Plums are an average crop, the trees being badly infested with aphids. We syringed the trees frequently with diluted tobacco water. Pears are below the average; they did not flower freely, and in most instances a bad set resulted. Cherries are a very good crop. Apples are only a partial crop; the trees flowered well, but the caterpillar played sad havoc with them. Strawberries were a heavy crop, and the fruit was very fine. Gooseberries are very plentiful. We had the bushes all hand-picked as soon as the caterpillar first made its appearance. Raspberries and Currants are equally abundant, with the exception of Black Currants, a great many of which dropped immediately they

were set. Damsons are a fair crop (not so heavy as last year); they were greatly crippled with the caterpillar. Filberts are quite a failure.—W. HARMAN.

Clumber Park, Worksop.—The Apple crop here and through this district is below the average. Pears are a fair crop and promise to be good. Generally speaking, Plums are below the average, though Green Gages are the best crop I have seen here. Sweet Cherries, as usual, are almost a failure, while Morellos are a heavy crop and the fruit is very fine. Bush fruits of all kinds are abundant, and Strawberries have been most plentiful.—M. GLEESON.

Dropmore, Taplow.—Apples and Pears are generally a very thin crop throughout this district, and may be considered a failure. There are, I have noticed, a few exceptions, and in these cases the crops last season were comparatively poor. In one orchard I noticed a very heavy crop on several trees of Blenheim Orange, and which I learnt were fruitless last year. Keswick Codlin, Cox's Orange Pippin, and King of the Pippins, in addition to the above, were also good.—C. HERRIN.

Althorp Park, Northampton.—The Apple crop is very bad in this neighbourhood this year. The trees were very much infested with caterpillars just as they came into bloom. Pear trees, like the Apples, suffered in the same way, and the crop is very light, many varieties having none. Bergamote d'Esperen, Beurré Clairgeau, Easter Beurré, Beurré d'Amanlis, and Pitmaston Duchess have the best crop. Morello Cherries are carrying a good crop, but there are very few fruits on other kinds. Peaches have a very light crop. Nectarines very good. Nuts very few. Strawberries good, a heavy crop. Raspberries, Currants, and Gooseberries all have a very heavy crop this year.—EDMUND COLE.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY'S VEGETABLE CONFERENCE AT CHISWICK.

SEPTEMBER 24, 25, AND 26.

THE Royal Horticultural Society is organising a great exhibition of garden vegetables, roots, saladings, &c. It will be combined with a conference of practical cultivators, having in view the improvement of the products of the vegetable garden and the promotion of a more extensive use of garden fruits and salads. The exhibition will consist of selected samples of all kinds of green vegetables, such as Cabbage, Cauliflower, Spinach, Beans, Peas, Tomatoes, and Aubergines, which are classed as pulse and fruits; tubers and bulbs, including Potatoes, Onions, and Turnips; tap-roots, such as Beets, Carrots, and Salsafy; saladings, as Endive, Lettuce, and Celery; garnishing and pickling plants; Mushrooms and new vegetables.

For the selecting of the best types of these several products, committees of experts will be appointed, who will report upon those considered the most suitable for general cultivation, both for profit and high quality. The reports will be published in due course. In the conference free discussion will be invited on the proposals made in the several papers to be read. These include the following subjects to be introduced by the persons named in connection with them, viz., "Asparagus," by Mr. Shirley Hibberd; "Winter Salad," by Mr. Norman; "Food of Vegetables," by Mr. J. Wright; "Improvement of Peas," by Mr. T. Laxton; "Improvement of Potatoes," by Mr. A. Dean; "Vegetable supply throughout the year," by Mr. J. Smith, of Mentmore.

On the first day, September 24, the proceedings at Chiswick will be followed by a gardeners' dinner at the Cannon Street Hotel. On the second day, September 25, the reports of committees will be presented. On the third day, September 26, the larger question of improving the products of the vegetable garden will be discussed. Mr. Harry

Veitch has been appointed chairman, Mr. Shirley Hibberd vice-chairman.

Schedules and all other particulars are obtainable at the offices of the Royal Horticultural Society, 117, Queen Victoria Street, Westminster, or of Mr. A. F. Barron, at the Society's gardens, Chiswick.

— At a meeting of the committee appointed to carry out this project, held on Tuesday, August 13, in the council room of the Royal Horticultural Society, Mr. H. J. Veitch in the chair, the revised schedule was presented and will be forthwith distributed. The only alteration from the schedule issued in January is in classification, the vegetables to be represented being the same as originally announced. Mr. Shirley Hibberd was appointed deputy-chairman of the committee, in view of Mr. Veitch's absence during the next few weeks, and a sub-committee was nominated, consisting of Messrs. A. Dean, H. Herbst, J. Hudson, J. Wright, G. Wythes, with the deputy-chairman and secretary, Mr. A. F. Barron, to make the necessary arrangements for adjudication and other matters; also for the dinner of gardeners, nurserymen, and friends, to be held at the Cannon Street Hotel on the first evening of the conference, Tuesday, September 24. As the price is to be 5s., a large gathering is expected, and it is thought the date may be convenient for several country gardeners and provincial seedsmen making arrangements for visiting London on the occasion. With the cordial co-operation of growers of vegetables a large, diversified, instructive, and enjoyable gathering may be expected. The conference will then be what its promoters hope—a great success.

Fruit and vegetable committee.—The several varieties of Potatoes on trial this year in the Royal Horticultural Society's Gardens at Chiswick were examined on Tuesday last by members of the fruit and vegetable committee, and the following varieties were selected as productive and good in appearance. The heavy rains of the night previous to lifting affected the whole of them prejudicially, and though several were cooked, it was considered advisable to submit them to a further trial for satisfactorily determining their qualities.

Vegetarian (Dean).—Oval, white, free cropper, fine sample.

The Canon (Dean).—White, round, medium size, splendid crop.

Edgemoor Early.—Kidney, medium size, good shape and good crop.

The Governor (Dean).—Kidney, white, large, even, and good crop.

Crown Jewel (Fletcher).—White, round, evenly shaped, medium-sized tubers, great crop.

Bedfont Purple (Dean).—Fine uniform tubers, and a good crop.

Irishman (Kane).—White, round tubers, large, with somewhat deep eyes; very heavy crop.

Debutante (Ross).—Bright crimson, round, uniform; good crop, rather small tubers.

Early Victor (Oakshott & Millard).—Large, white, flattish oval, even sized tubers, good crop.

Satisfaction (Oakshott & Millard).—White, round, heavy crop of good sized tubers.

Tacoma (Bliss).—Pink, large, roundish, a heavy crop.

Ellington's Prolific.—White, round, medium size, even; very heavy crop.

Some 30 seedling varieties received from Mr. Bliss, New York, were examined. They proved remarkable for their extraordinary cropping qualities and great size, but were considered somewhat rough for general culture.

Mr. C. Ross, Welford Park Gardens, Newbury, sent three varieties of Melons, viz.: Standard, a scarlet-fleshed variety; Colonel Grenfell, green-fleshed; Duchess of Fife, green-fleshed. They were all somewhat deficient in flavour.

Mr. Pratt, Matfield Nurseries, sent a seedling Apple greatly resembling Beauty of Bath.

Tomatoes at Chiswick.—Those interested in the cultivation of the Tomato will be well repaid by a visit to the Chiswick Gardens of the Royal Horticultural Society, where the crop this season is quite equal

to if not better than that last year. On looking over those grown in the open we were very much struck with the superiority for outdoor cultivation of the variety called Chiswick Hybrid, a cross between Horsford's Prelude and Perfection.

THE NATIONAL CO-OPERATIVE FESTIVAL AT THE CRYSTAL PALACE.

AUGUST 17.

THE department of the great National Co-operative Festival held at the Crystal Palace, at Sydenham, on the 17th inst., which had the greatest amount of interest for horticulturists was the flower show held under the auspices of the Agricultural and Horticultural Association, Limited, a corporation based upon the principle of co-operation, and of which Mr. E. O. Greening is the manager. A very large sum of money was offered as prizes, contributed by the Horticultural Association, by the Crystal Palace Company, and the Festival Committee. The horticultural show filled the whole of the nave with the exception of that under the central transept, and four rows of tables had to be brought into requisition, with supplementary side tables. The task of staging such an enormous number of exhibits was a work of great labour, especially so as the same articles were shown in different sections. Then a very large number of exhibits sent for competition had to be unpacked and staged by the assistants, and the wonder is that so little confusion occurred. Altogether there were just over 350 exhibitors, and the number of entries amounted to over 4000. In some classes there were over 100 competitors; the work of making the awards was, therefore, an onerous one, and it required the services of fourteen judges to do this within the given time. In some of the classes as many as eight prizes were offered, and in a few instances these were supplemented by special prizes. The competition for the prizes was confined to members of industrial co-operative societies, and to the members (or their gardeners) of the Agricultural and Horticultural Association, Limited.

This is the fourth exhibition of horticultural produce. The first and second were held in the conservatory of the Royal Horticultural Society at South Kensington; and on the first occasion, two judges, and on the second, four sufficed to make the awards. A comparison is thus afforded between the first and fourth exhibitions, with the result that the annual exhibition is seen to be advancing by giant strides. What its ultimate dimensions may be it is difficult to conceive, but it must grow, because the interest in it grows and spreads in ever widening circles. On this occasion exhibitors were drawn from Scotland, from Wales, from all over England, and one from Ireland. Every festival of this character spreads a knowledge of the benefits derived from co-operation, and brings adherents to the ranks of the co-operators. One highly satisfactory feature was the marked advance in the quality of the productions and in effective staging. The roughness and coarseness seen at the first show are becoming less and less yearly, and vegetables of a high order of quality are taking their place. A very large number of the exhibits would not have done discredit to the most important horticultural exhibitions held in the kingdom.

The better class of forced fruits was somewhat sparingly represented, yet Grapes showed a marked advance upon anything previously seen. The best collection of six dishes, staged by Mr. L. Budworth, was highly creditable to him. Apples, both cooking and dessert, were very good. Mr. John Butler, of Sittingbourne, had the best four dishes, two dessert and two cooking, staging very good fruit indeed of Red Astrachan, Worcester Pearmain, Lord Suffield, and Peasgood's Nonsuch. The best Pears were Jargonelle, Beurré Goubault, and Windsor.

Plants in pots were numerous, but somewhat disappointing. There were a few good Fuchsias, and pots of Phlox Drummondii were a charming feature, but many had a spare and ill-conditioned appearance. In the classes for these, the prizes were in

almost every case in the form of books. Of cut flowers there were great numbers—from stands of six and eight bunches to single bunches. Stands of half-a-dozen bunches of annuals were very bright and pleasing, an annual being defined as a plant which is sown, blooms, and dies in one year. Bunches of Phlox Drummondii were very pretty, but their beauty was eclipsed by that of the bunches of Sweet Peas. The double forms of Zinnia elegans were singularly bright, and the rich orange African Marigolds all that could be desired. Dahlias were a weak point, so many of the blooms were disfigured by the green eye; but they were yet a decided improvement upon those seen at the earlier exhibitions. Bunches of Grasses and of wild flowers were very numerous, many of them arranged with considerable taste. Vegetables were a striking feature, and in the case of Potatoes the judges had to select eight of the best in four classes for single dishes out of about seventy-five in each class. There was little that could be denominated coarse among so large a number; size and handsome outline appeared to be happily combined. The quality of many of the vegetables was very high, a seed grower might have selected many things as valuable pedigree stocks. Everything was cleanly washed and carefully staged. There was a class for eight dishes of Potatoes grown with the aid of the "One and All" artificial manure. The prizes were keenly contended for, the first prize going to Mr. Waite, Glenhurst, Esher, who had very fine examples of Queen of the Valley, Satisfaction, Sutton's Seedling, Red Rover, Vicar of Laleham, Snowdrop, Governor, and Nonsuch.

The growth of the co-operative principle among our industrial communities is one of the signs of the times. It is surely spreading on every hand, and as the working classes come to appreciate the value and helpfulness of legitimate combination for mutual advantage, so much the more rapidly will the principle take hold of the public mind. In its wake follow temperance, thrift, public spirit, consideration for others, and many other social features which mark the solid improvement of the times in which we live. It is no longer the dream of a few enthusiasts; it is now a clearly recognised principle powerful for good when properly applied and directed.

MARKET FRUIT CULTURE.

THE reports on fruit crops already to hand are by no means encouraging to those who have the extension of home-grown fruit supplies at heart, as no amount of enthusiasm will long survive a balance on the wrong side of the ledger. That such must be the case with many this year there cannot be a doubt, for the reports of failures, more or less complete, are, unhappily, far more numerous than those where fair average crops are found. I can, fortunately, add this locality to the few favoured spots where the crops are better than they have been for several years past. As one goes inland, however, the fruit gets scarcer, until those growers who bring supplies in from a distance are, like the majority in other counties, telling the same tale of having very little to bring. Happily, there is one consolation for those who have any crops at all, viz., the prices are far better than they have been for some years past, as up to the present very little foreign fruit has come to hand, and what there is is of very moderate quality. The French Pears, Plums, Apricots, &c., that are usually being hawked about our streets at very low prices are conspicuous by their absence. Whether their crops are lighter, or whether the rush of visitors to the Exhibition causes the growers to get better prices at home, I cannot say; but certainly a good many of the Strawberries grown in this locality were bought up for sending across the Channel. Therefore, I do not think that the planting of fruit trees will be seriously checked, for if we can trace the present scarcity to last year's cold, ungenial weather, we ought on the same grounds to be able to count with certainty on a good crop next year. A more genial season than the present it would be difficult to remember—plenty of sunshine, an entire absence of spring frosts, and rain enough just in time

to check the drought. The trees now look splendid, and all we want is a continuation of the season equal to what it has been to ripen off the wood.

When we come to consider the cause of failure we find it generally set down to unripened wood, and in the case of tender fruits like Peaches, Apricots, &c., that require a south wall even in this part of the kingdom, that is probably the correct solution. But I can hardly think that the failure of Apples and Pears can be set down to the same cause, for it must be a wretched summer in the southern half of these islands that does not equal an average season in many places where Apples and Pears mature good crops. Trees stripped of their foliage at midsummer by a plague of caterpillars would not ripen wood made after that date if covered with a glass roof, and if such visitations cannot be stayed the future of fruit culture is doomed. Happily, English cultivators are hopeful, not easily deterred by even two or three failures, and I trust that in this case they will try again, for I feel sure that they have in these islands as good a climate, and as free from destructive storms and casualties of various kinds as they are likely to find in any part of the world. If the landlords would encourage their tenants and help them to plant, and, above all, give compensation for improvements when they are compelled to leave, we should be in a more hopeful mood than at present. This uncertainty of tenure is an ever present evil, checking the energies of those who would willingly embark in the trade if they had any security for their investments. With trees planted when not only the soil, but the subsoil is suitable, and cultivated with as much skill as is lavished on other crops, I have little doubt but that hardy fruit culture will yet, in spite of all drawbacks, be able to hold its ground as one of the coming industries of the kingdom. Something better, however, than our old orchard culture is necessary before it yields either pleasure or profit.

Gosport.

JAMES GROOM.

Death of Mr. G. D. Vallance.—It is with feelings of regret that I record the death of Mr. G. D. Vallance, of Tresco Abbey, Isles of Scilly. He had of late suffered from an affection of the heart, although he was not obliged to give up his duties till quite recently, when provision was made for him to reside at Yatton. He died at Exeter on the 17th inst., on his way over from Scilly, accompanied by one of his sons. He was well known during the last few years in connection with the fine gardens at Scilly. His gardening career was commenced at Stackpole Court, Pembrokeshire, having been apprenticed there. After leaving there he served in other places, and in due course took charge of the gardens at Farleigh Castle, near Bath. There he remained seventeen years, gaining the respect of all with whom he came in contact. After this he went to Venn Hall, near Sherborne, where he remained thirteen years; from there to Tresco, where he discharged his various duties for fourteen years.—J. C. F.

Plastic slate.—Will any reader of THE GARDEN kindly say where this can be obtained?—C.

Ants in hothouses.—Could you tell me any cure, through your paper, how to destroy ants in hothouses? I am very much troubled with them, especially in the Orchid houses and stove.—G. B.

. The most simple and effectual way of destroying ants is to pour boiling water over their nests at night. If the nest should be in a pot amongst the roots of a plant, immerse the plant and the pot in cold water for five or six hours, by which time the ants will all be drowned and their eggs destroyed. Another way is to coat some plates, dishes, or pieces of slate with syrup. They will cover these by thousands. When well crowded, the plates may be dipped sharply into hot water and the ants thus be destroyed.—Ed.

Name of fruit.—L. J. Baker.—Apple, New Hawthornden.

Names of plants.—T. W. R.—1, Spiraea callosa; 2, S. salicifolia; 3, S. s. var.; 4, Spiraea, probably a hybrid, cannot name.—F. Douding.—Nigella damascena.—Lady Willoughby d'Eresby.—Salvia Horminum.—X. Y. Z.—Love-in-a-mist (Nigella damascena).

WOODS & FORESTS.

TREE PLANTING IN IRELAND.

THE Royal Commission on Public Works in Ireland has not only recommended that a large amount of capital be spent in drainage in different parts of the country, but likewise that the Treasury advance £600,000 at 3 per cent. in aid of light railway extension, with the view of opening up and developing the industrial and mineral resources of congested localities, where hitherto capital could not be raised for this purpose. Should these improvements be carried out in a practical manner, they will not only be the means of giving employment to thousands of workmen, but likewise open up in the wilds of Donegal and other parts of the country vast tracts of barren bog and mountain land that are capable of being improved and turned to account for tillage, pasture, and the growth of timber trees. It is roughly estimated that there are about 5,000,000 acres of barren land in Ireland capable of growing useful timber trees, but one great drawback to such undertakings has been the want of proper roads and the cost of transit in many parts of the country. As there is now, however, a prospect of a revolution in that respect, proprietors of such ground, men of capital and enterprise, will see the advantage of turning them to account without further delay. A great deal of mountain and bog land in that country is capable of producing quickly, Pine, Larch, Spruce and Silver Fir of a profitable size, and in sheltered places I have found the Douglas Fir make rapid progress, and consider it worthy of a fair trial. The best tree for planting in such places in Ireland is the Larch, the reason of this being that it never suffers from ulceration and blotch. I have sold Larch timber at all stages of its growth, and found it realise nearly twice as much as I could obtain for any other species of the Fir tribe of the same size. These are recommendations of a high order and well worthy of the consideration of all who contemplate planting trees on a large scale for profit in that country. On damp boggy ground I have grown the common Spruce (*Abies excelsa*) with advantage as a profitable tree. Farmers use its timber as well as that of the Larch for building purposes and repairs, while its flat, fan-shaped branches are occasionally used for thatching sheds, forming screen fences, and a variety of other purposes. In order to promote the formation of fine clean stems free of knots, this tree had better be grown in blocks by itself, and at such a distance apart that the side branches gradually lose their vitality, by which means the stems are not only clean, but likewise exhibit a pretty uniform thickness throughout, which enhances their value to a large extent when offered for sale. When the proposed drainage is carried out by the Government, it will afford facilities for planting vast tracts of marsh ground with Spruce and other species of trees that can be grown to a profitable size in that class of ground. I know for a fact that many gentlemen are prevented from planting barren ground through fear of the high cost at the outset. That these fears and doubts are ill grounded I shall endeavour to show. In Ireland as well as Scotland I have planted barren heather ground at rates varying from about 30s. to 40s. per acre, this including the cost of fencing and draining where necessary. In this case the whole of the plants were inserted by the notch system. In cases where a mixture of hardwood trees of a pretty large size had to be

used and planted in pits I have found the cost per acre to average from 40s. to 100s. according to the class of ground, price of plants at the time, and the rate of workmen's wages in the locality. These prices are not so heavy after all, and I have no doubt that before long proprietors of waste ground will see the benefit of planting such on a large and very extensive scale. Just as I write I see by the papers that the proposed light railways for Ireland have been discussed by the Standing Committee on Trade and passed, and as it is further intended before long to lay before Parliament a comprehensive scheme of land purchase for that country, there will in all probability soon be a wide field opened up for the investment of capital in tree planting and other much-needed estate improvements, which can hardly fail to prove highly remunerative.

J. B. WEBSTER.

The timber supply.—Constant and growing demand on a constantly diminishing timber supply in all the civilised countries is beginning to have a visible effect. In a careful article the *Lumber World* states that despite the systematic efforts of the various European countries to maintain by forestry regulations an adequate supply, the whole wooded area of Europe has dwindled to 500,000,000 acres, or less than one-fifth of the area of the Continent, while the demand goes on increasing as the population increases in density and consequent poverty, forcing them to use timber, as a cheaper material than brick and stone, to build houses. Norway and Sweden have parted with nearly all their available forests. Northern Russia has been stripped so bare that at present the single city of St. Petersburg demands more than that country can spare. The fostered German forests yield an ever decreasing supply, which constantly deteriorates in quality. Bohemia, Galicia, Transylvania, and some adjacent sections still possess considerable areas of forest, but they are in inaccessible mountain regions, with neither railroads nor navigable streams to make the timber available. The forests on the shores of the Adriatic have disappeared. France and Spain, Portugal and Italy, Turkey and Southern Russia have little or no timber that is available. Great Britain long ago ceased to depend to any extent upon her own small woodland areas for timber. In the United States the consumption of timber goes on at an amazing rate, each year seeing hundreds of thousands of acres stripped of forests. Canada has large wooded areas yet, but the demand upon them makes it only a question of time when they shall be stripped. Asiatic, African, and South American forests are still important, but at present they are unavailable because of their remoteness from the centres of consumption. The civilised world will soon awake to the fact that its timber supply is exhausted to a serious degree, but as yet there seems to be but little appreciation of the true state of affairs.

The value of Birch twigs.—According to the *New York Lumber Trade Journal* Birch twigs are worth a good deal. Even the leaves and young shoots secrete a resinous substance, which, under long names, is sold as a medicinal preparation for as high as three guineas a fluid ounce. The inner bark secretes a bitterish alkaloid, not unlike cinchona in its nature, and is used largely as an adulterant for quinine in many parts of Europe. The so-called "Cinchona Mixture" has been found by analysts to consist, in many instances, of the alkaloid found in the inner bark of the humble Birch tree. The outer bark, subjected to dry distillation, yields an empyreumatic oil, having the peculiar odour of Russia leather. The oil of Wintergreen, so useful, fragrant, and expensive, is nearly always adulterated with Birch oil—much of it even is Birch oil, pure and simple, but is sold as Wintergreen oil, and is Wintergreen oil to all intents and purposes, having, when properly prepared and refined, the same properties. The Birch

limbs, twigs, bark, and even the leaves, if a more commercial oil is to be made, are gathered and placed in a large tub containing a coil for steam heating, and as fast as the mass accumulates it is kept covered with water. After becoming nearly full, steam is turned on, and the batch kept about blood-warm for twenty-four hours. This will dissolve nearly all the oil and resinous matters, which, being precipitated, cause the mass to assume a very sticky consistency. By means of a wooden connection with a small barrel or keg, the tank is made tight and brought to a boil. The steam, having previously dissolved the oils, &c., will now vapourise them, and will condense in the last named keg. After a few hours the job is done, the keg is corked up, and ready for shipment as commercial Wintergreen oil, though made from Birch refuse.

THE BEECH.

(*FAGUS SYLVATICA*.)

JUDGING by the numerous fine specimens of the Beech that are to be seen in the grounds at Holwood, the chalky formation of this part of Kent would seem to be peculiarly well suited for its healthy and perfect development. On several occasions I have been struck with the luxuriant growth of this tree when growing on the chalk ridge which passes through the estate from west to east, it being no difficult matter to point out where such crops up near the surface by the presence of Beeches of unusual dimensions.

In the lake wood on the left side of the green drive, entering from the top or Holwood side, is growing by far the most remarkable Beech tree with which I am at present acquainted on the estate. At 3 feet up, this tree is 20 feet 6 inches in girth of stem, above which it divides into ten massive limbs, two of the largest girthing 5 feet 3 inches and 5 feet 4 inches at a yard from the fork, the whole tree containing about 235 feet of timber. The head is of immense proportions and beautifully rounded, the diameter of branch-spread being fully 78 feet. As an ornamental tree this gigantic Beech occupies the front rank, and as it stands at a considerable distance from any other and on the well-kept greensward, it has a very unusual and striking appearance. The soil where this tree grows is not of the best quality, it being but a shallow loam with a subsoil of gravel and chalk.

Now-a-days the Beech is not a very remunerative tree, for the small price of 9d. per foot hardly pays for ground-rent, let alone cost of planting and management. For the production of firewood Beech is certainly very valuable; while it may be that occasionally a well-rounded butt of large dimensions realises a fair price (perhaps 1s. 3d. to 1s. 6d. per foot) for use as a beetling beam. It is a common tree in Kent, and springs up naturally in neglected patches of ground by the wayside or in the enclosed common. In the formation of hedges the Beech is a tree of great value, as it affords such an amount of shelter from cutting winds and acts as a protection to more tender trees and shrubs. For nursery fences it ranks almost on a par with the Yew and Holly, the old withered brown leaves being retained long into the following spring. A. D. WEBSTER.

Rings not always a guide to the age of trees.—In a recent work by Professor Hartig it is stated that a count of the annual rings of a tree when cut 3 feet or 4 feet from the ground may not give the accurate age of the tree. Where trees are crowded in a forest and have developed feeble crowns, the greatest annual increment is just below the crown, and it diminishes regularly downwards. When the leaf-area is not sufficient to afford food-material to provide for a sheet of cambium all over the tree, the growth stops before reaching the bottom, and the ring which is found 20 feet up the trunk may fail altogether before it reaches the ground. In such trees there may be rings lacking at 3 feet high for certain years, and the total number of rings would be less than the number of years in the tree's life.

No. 928. SATURDAY, Aug. 31, 1889. Vol. XXXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

THE EARLIEST CHRISTMAS ROSE.

(HELLEBORUS NIGER VAR. LACTEUS.)

ONE of the pleasures of gardening is the sudden and unexpected appearance per parcel post of a neat little box containing some treasure in the way of plant, bulb or seed one may never have seen before. One day last year such a box containing plants of two seedling Hellebores raised by Herr Max Leichtlin at Baden-Baden arrived, and one of these of tall and slender habit with very narrow leaflets is now fully in flower on this the 26th day of August along with the Sunflowers, Dahlias, Tritomas, and Gladioli. To see a pale-faced Christmas Rose thus early competing for admiration in direct comparison with the Torch Flowers and Sword Lilies is a sight I had never hoped to see in a garden. It is, of course, a question whether well-behaved Christmas Roses should bloom before Michaelmas, but this variety is flowering now, and, as Burns tells us, facts are stubborn things. It may be that many, if not most people will from association's sake, aided by their ever popular name, be always most eager to welcome and admire Christmas Roses when accompanied by the golden Aconite and pearly Snowdrop of winter, or as contrasted with the golden Crocus and early Daffodils of the spring. However this may be, there remains to be considered the plain fact that here is *Helleborus niger lacteus* now thrusting up its tall pale stalks from its slender leaflets, each enriched at its apex with a couple of small, but daintily shaped white flowers. Of course there is the usual tuft of pale lemon-yellow anthers in the centre of the waxy sepals, and there may be just the slightest blush of rose, just enough to add warmth and beauty to such a chaste and lovely flower. I suppose Parkinson had he seen such a go-ahead, early-to-rise kind of Christmas flower would have applied to it the epithet of "timely Christmas Rose," just as he called the earliest blooming Poet's Narcissus the "timely purple-ringed Daffodil," but in the days of Gerard and Parkinson flowers were more orderly than now, at least so far as we know to-day; the Black Hellebore then was a seasonable and well-conducted plant, and did not try to emulate the more gaudy blossoms of summer or early autumn-tide. Most of us have expected to see a few early flowers on the great Christmas Rose (*H. altifolius*) in October, and in November it is often at its best, a dense mass of large white flowers, more or less surrounded by a shapely coronet of dark and massive leaves. But here is a variety which, although quite a mannikin as compared with it so far as mere size and substance are concerned, can beat it fully six weeks as to earliness of blossoming.

The Irish climate and soil can often afford to give a point or two in the culture of these noble flowers of winter, but even here by the genial shores of Dublin Bay I never expected to see any Hellebore of the *H. niger* section in blossom on August 26. Perhaps the parent of this elegant seedling hailed from the sunny side of the Alps, instead of from the northern one, where these and other flowers are often buried under the snow-drifts until late in the spring. At any rate we must look to Herr Max Leichtlin to enlighten us as to the parentage of this "milky Christmas Rose," which up to date

seems by far the earliest or most timely of its family. The flowers I send to you from the plant itself will show the natural size and general characteristics, but with the poet we must still ask the question:—

Say, what impels, amid surrounding snow
Congeal'd, the Crocus' flaming bud to glow?
Say, what retards, amidst the summer's blaze,
Th' autumnal bulb, till pale declining days?

In the so-called floral vocabularies we are told that flowers of *H. niger* mean "relieve my anxiety," and I hope Max Leichtlin will see the suggestion that these flowers convey, and kindly relieve our minds as to this and other of his seedling Christmas Roses, for I cannot believe that the two he so kindly sent to me represent the whole or half of his hardly won treasures in this direction.

So far, I believe, I am right in saying that this has been an ideal season for these favourite flowers, and I shall be very much disappointed if we have not a splendid winter's harvest of their lovely blossoms. The hot summer of 1887 suited them perfectly, and gave quite an impetus to their culture. That of 1888, wet and chilly as it was nearly all over Europe, encouraged that direst of all scourges on cold and damp soils—fungus—and in many cases the finest of plants lost almost all their leaves, and, of course, failed, more or less, in their blossoming. This year, the plants, as a rule, have grown ahead most luxuriantly, and already the great plump bronzy buds have burst up through the earth, and I shall have to confess that I am a false prophet if the Hellebores of the *niger* section are not this season a great and decided success.

There are one or two practical points in the culture of these flowers to which I attach some importance. Just now, for example, I like to give the plants a good soaking of soot water which adds considerably to the deep and lustrous appearance of their foliage. Then, as soon as ever the flower-buds can be seen forming in the centre of the leaf-stalks, a handful or two of pure sharp sea sand or well-washed grit is dropped over the crowns. The soot, or manure water, strengthens the plants at a critical stage, and by covering the crowns with well-washed sand or grit, the depredations of the slugs and snails are prevented. This is just now most important, as a nibbled bud means a deformed and injured flower, and, to my mind, unless the great white sepals of the Christmas Roses are clean and shapely, they are not worth having, but as seen vigorously grown and at their best, they are flowers fit for a queen.

F. W. BURBIDGE.

NOTES FROM PARIS.

VINCETOXICUM OFFICINALE (see GARDEN, p. 148), which Mr. Wood speaks of as a desirable garden plant, grows wild in the woods around Paris and also on the banks of the Circle Railway. It certainly is not showy; the stems have the appearance of young Lilac shoots and grow to a height of about 2 feet. The most interesting part is the long beak-like pod containing the seed, each of which resembles a little comet with a long silky tail. There are two species, *V. nigrum*, *V. officinale*, and a variety called *contiguum*.

CHESTNUT TREES IN BLOSSOM.—Many of the Horse Chestnut trees in the streets, which lost their leaves early on account of the hot, dry summer, have produced a second growth of delicate green leaves and perfect spikes of blossom. These appear to be from buds which should have come out next spring.

AILANTO TREES.—While Chestnut, Lime, and Plane trees in the streets have suffered from the dry weather the Ailanto is flourishing finer than

ever. Among many to be seen here there is one in the Bois de Boulogne covered with large masses of seed-pods, which have turned a bright brick-red; it is the admiration of all beholders, and can be seen from a long distance. The foliage of these trees when lit up at night by the electric light in the street lamps is exceedingly beautiful.

LANTANAS.—A very pretty effect is produced in a large bed of Geraniums by planting little trees of Lantanas having clean stems about 4 feet high. These stems are tied to stakes, and now that the plants are in flower they appear at a little distance like standard Rose trees bearing clusters of flowers of curious colours.

CEANOTHUS LE PHARE, free-growing, with large trusses of blue, is flowering freely in beds in the exhibition; also *Hydrangea paniculata grandiflora*, white.

CROCOSMA AUREA IMPERIALIS grows higher and larger than the ordinary aurea in the same bed, and is very showy with its large orange-yellow flowers.

TAGETES LUCIDA is very small-flowered, but produces a fine effect in a mass. The flowers are deep yellow, and grow in corymbs something like the wild Yarrow. It was particularly noticeable in the beds at Versailles last Sunday. R. J. C. R.

ROSE GARDEN.

BRIER CUTTINGS.

A CLEVER cultivator writes to me to tell him all about Brier cuttings, their mode of preparation, age and size of Brier used, time and mode of planting and after treatment. As others may be in the same or a worse position, and information on the subject is not over-plentiful, I hardly know where to turn for a single line. I have written to say, See answer in THE GARDEN. Taking time of insertion first, a good deal depends on the character of the season. In autumn when the Brier wood is mature early, the cuttings may be inserted during any time in October; in ordinary seasons, the end of October or any time in November will prove the most suitable and successful season. It cannot be too often repeated in regard to such matters that condition is of more vital import than time. So soon as the leaves fall or are ready to fall, Brier cuttings may be inserted with every prospect of successful rooting. The modes of preparation are probably manifold, but all resolve themselves into two—heeled and heelless cuttings, the latter being by far the more plentiful. Each foot or 9 inches of Brier can thus be formed into a cutting by the simple process of being cut up into lengths with a chopper or bill-hook. In this rough and ready way of making Brier cuttings there is frequently no care nor thought of disbudding, nor any other manipulation whatever. The Briers are cut into lengths, thrown into heaps like so much firewood, and occasionally may be about for days or even weeks before insertion. Some are even so careless as hardly to trouble which end of the cutting is placed uppermost; and as Nature is so obliging, that a current may be reversed in vegetable tissue without vital loss or even serious loss of time, such topsy-turvy Brier cuttings may grow. Though Brier cuttings are so hardy and tractable that they may be rooted to the tune of from 80 to 90 per cent. on such rough and ready lines as these, yet it pays to give more humane and considerate treatment—such, for example, as immediate insertion and the placing of their right ends in the earth, so that they may start on their new career on natural and normal lines. Where they are rooted in quantity it hardly pays to trouble about disbudding; in fact, on the whole it may be as well or better to leave them all intact, for

Brier cuttings are somewhat self-willed and capricious.

For example, the best shoots do not always come from the two or more buds the cultivator elects to leave above ground. Often in practice it is found very much the contrary. The base or any other buried bud throws up the strongest shoot, and these favourites of fortune speedily starve off or out into puny nothingness or uselessness all the others. In practical result it matters little so long as one vigorous break comes forth to run into a strong shoot for each cutting, for one is sufficient, though it is wise to afford the cutting the means of producing several. The moment, however, the cutting has made its own selection all rivals should be vigorously suppressed to let the cutting's favourite have the full pull or run of the food larder, and the strength of the soil and the roots. Cuttings with heels are in marked contrast to those that are heelless. Each cutting has a base or heel of older wood, ranging from a quarter of an inch to an inch in length for a foundation. This heel mostly consists of wood a year or more older than the cuttings. In the case of Briers, however, it may often not be more than a few months older than the cutting. The cutting, in fact, may be simply a later break on the current season's shoots, or it may be this year's break on the previous or earlier year's wood. And thus the heels on Brier or other cuttings may be of different ages as well as sizes. Neither is of vital importance to success, the science and practice of successful heeling being rather in the curious fact that in or near the heel lies greater potential power of rooting than in any other portion of the cutting. Nevertheless, few rooters of Briers on a large scale seem to think the practice worth the candle—that is the sacrifice of the additional time and Briers that the heeling involves. As to the age and size of Briers used, those of the current year's wood and of medium size are the best. Abnormally large Briers seldom root so freely as those of smaller calibre. Small Briers root just as freely as those of medium size, but then they are not so useful afterwards, as they seldom throw up such vigorous shoots. The top cuts of Briers are also to be avoided, as they are seldom so mature as other portions. Where Briers are abundant and cuttings sufficiently plentiful the base cuts may also be rejected, as these mostly root later and with less freedom and certainty than the middle portions of the shoots.

As to the method of planting, deep and firm are the chief points. Two or three buds above the surface are ample, and in some cases and circumstances one would be preferable. All the rest of the cutting should be buried under ground. The length of the buried portion is not material, unless for economy of labour and of Briers, but from 6 inches to 9 inches is a convenient and suitable portion to bury. Solidity at the base of the cutting is of far more moment than depth or mode of insertion; in fact, the latter is essential to success. Brier wood being tolerably hard, it will hardly root or root freely in loose earth. Press or stamp the soil firmly against the cuttings, and the vitality of the cutting puts forth all its energy to overcome the obstruction, and roots speedily and in plenty are the nett product of the struggle.

So long as the soil is firm it matters little or not what it is composed of so long as it is porous enough to allow all excess of moisture to pass away. Actual modes of insertion, distances apart, &c., are all mere matters of secondary importance non-essential to rooting, and may be arranged to suit the cultivator's convenience. So far as rooting is concerned, digging the cuttings in a foot

apart is a practice that proves alike convenient and successful. But the distance may be reduced to 6 inches or broadened out into a yard without affecting the rooting by a hair's breadth. Solid earth at the base of the cutting is the one essential point; that secured, nothing is gained, but the cuttings may be rotted by stamping or pressing the earth too firmly round them all the way from base to air-line.

The after treatment consists in keeping them clear of weeds and of a superfluity of shoots. This is about all the culture the cuttings require till the set time for budding them comes, which may range from nine to eighteen months from the period of insertion. As a rule, the cuttings are left in their rooting beds until budded, though at times other practice prevails. Hence distance apart gets mixed up with facilities of access and other questions relating to budding rather than with the mere rooting of Brier cuttings.

My correspondent does not ask me to pronounce on the knotty question of Brier cuttings *versus* Brier seedlings. And had he done so, my answer would have been the same, viz., that either may prove best under certain conditions, and in the hands of those who have special faith in either one or the other. What is more practical is the fact that both methods prove almost insufficient with own-root Roses thrown in to meet the insatiable demands for more and yet more Roses that grow in impetuous urgency day by day, if not hour by hour.

D. T. F.

SHORT NOTES.—ROSES.

Rose Adam.—This is a good old Tea Rose that is now not often seen. It has been conspicuous of late, for whilst the copious rains have rotted the buds upon the bushes of the very double kinds, the buds upon Adam have opened into large, globular flowers of good form and sweetly scented. The colour is a tender rose. It is also known under the name of President.

Rose Climbing Devoniensis is now flowering well upon the second growth. It is one of the sweetest of Teas, and probably the best white climbing Tea we have. Unfortunately, in some situations it fails to flower. I have known plants grow vigorously for several years without producing a bloom, and then commence to flower and continue to do so yearly. Climbing Devoniensis is such a delightful Rose that it is worth taking a little trouble over, for if it suddenly burst out into a profusion of flowers the trouble is repaid a thousandfold.

White Japan Rose (*Rosa rugosa alba*).—Words can hardly describe the magnificent effect of a group of the above. The foliage is as glossy now as when first expanded, and among the rich green leaves nestle the large clusters of scarlet fruits. In addition, the strong shoots sent up from the base of the bushes are crowned with flowers, for as many as a dozen buds and blooms can be found at the top of some of these vigorous growths. There will continue to be flowers for some time yet. There are few plants that give us the combined effect of foliage, flower, and fruit so well as this Rose.

Tea Rose Mme. Berard.—Though perhaps not yet so popular, this is as free flowering and as beautiful as Gloire de Dijon. Its almost spineless wood is a recommendation, and the beautiful tints of the young growth are almost as charming as the flowers. The flowers are of good form and substance, full, double, and globular; in colour a salmon-yellow, deepening into orange and shaded with rose. The scent is powerful and very sweet. It is a vigorous climber. In a little garden I know in Kent there is a wire fence covered chiefly with this Rose, and there are always flowers from June till November, and sometimes in December if the weather keeps mild.

Rose Viscountess Folkestone.—For this as well as the beautiful Grace Darling we are indebted to Mr. Bennett, and without a doubt the two should become garden Roses of the greatest importance, as they combine all the essential qualities of hardiness, vigour, and a long-lasting season of abund-

ance of bloom. In contrast to Grace Darling, with its full double flowers, those of Viscountess Folkestone, though double, are large and loose, as the petals reflex and appear quite pointed. The colour is white, passing to flesh, and sometimes deepening into salmon. Our group of twelve small plants put out late in April has been quite a feature, for it has not been without flowers since the first one opened in June, and still they come. It is only in a bold group that the great merit of these fine Roses and their fitness for the permanent decoration of the flower garden can be realised.

SOME OLD ROSES.

At the present time there is no more useful Rose in the open air than Souvenir de la Malmaison. On well-established plants that are growing in good soil the flowers are produced with great freedom, and the colour, whether of the half-expanded bud or the open flower, is so refreshing, that no one can fail to admire the blooms, although their form is somewhat flat. I cannot help thinking but that the absence of strong sunshine and heavy rain has been favourable to this Rose, as it is some years since I saw the centre of the flowers so pleasingly flushed with colour. This Rose possesses two striking characters that should not be overlooked by those who require flowers in quantity in the late summer and autumn months. It is a perfectly hardy Rose, and will thrive where some varieties with more highly-coloured flowers will refuse to grow. It does equally as well as a standard as a dwarf plant, and may also be utilised for covering a low wall or fence. It is not until the autumn approaches that the flowers open well and assume their proper character.

CLOTH OF GOLD.—There are two plants of this Rose in the immediate neighbourhood from where I write. One is covering a good space of wall on the south front of a dwelling-house; the other is standing on a lawn and growing in the form of a pillar. The first-mentioned plant has flowered remarkably well, and is now making very satisfactory growth, at all the points of which, in most instances, is a cluster of flowers. The depth of colour in the flowers of this Rose is very striking. The form, too, is good. The other plant has occupied the same position for nearly twenty years. It is budded on the Brier, and although a severe winter kills back the young wood, the plant rallies again and sends out long and vigorous shoots, which, when allowed to grow, tower up to a height of several feet and arch over in the most graceful manner, each shoot bearing a large cluster of blooms. The flowers of this Rose are very valuable in the autumn.

MADAME PLANTIER.—Whether grown against a wall or as a standard, this old Rose has been very conspicuous this season. The profuseness with which it blooms and the purity of the flowers render it, I think, one of the finest white Roses we have where a mass of colour is of more importance than the form of the flower. It is a perfectly hardy Rose. It is one of the earliest Roses to bloom if it is given a warm aspect. As a standard it can only be found growing satisfactorily when it gets but little pruning, and then it produces large, massive heads of flowers. It is only in old gardens where it can be seen in this form now, as very few think of growing it except as a climber or pot plant. This is much to be regretted, as it produces larger and better-formed clusters of flowers than Aimée Vibert.

MACARTNEY ROSES.—The single form of this Rose is well worth growing for its distinct character. The plants are evergreen, with dark shining foliage, and although only a few blossoms are open at one time, they continue to appear from early summer until quite late in the autumn. Now that single Roses are gaining favour, the variety alba simplex (*grandiflora*) should be grown. The Macartney Roses should be grown on a wall with a south or west aspect.

J. C. C.

Tarleton.

A new graft sport in Roses.—For years, indeed ever since *Cytisus Adami* attracted attention, it has been suspected that sports or variations

might result from budding or grafting. In the current number of the *American Florist*, Mr. W. Falconer tells us that "the newest thing in Roses is a graft hybrid, if I may so term it. The stock was *Maréchal Niel* and the scion *Mermet*. The hybrid differs from either, and Mr. Henderson thinks it resembles a *Gloire de Dijon* in habit more than anything else. It was not in bloom when I saw it, but the plants were very healthy." I wish we could obtain more full and accurate information as to the supposed facts of this case. That the variegation of a green-leaved stock can in some cases be induced by grafting or budding is now a well-established fact, and even in the case of the Rose there is some precedent for attaching more than a transient importance to Mr. Falconer's note as above. Was not the Rose called *Mabel Morrison* presumed to be a bud sport induced by grafting? Perhaps Mr. Paul or some other historian of Queen Rosa may enlighten us as to this or other instances of vegetative as opposed to sexual or floral cross-breeding in Roses. After all there are many things not yet dreamt of in our garden philosophy.—F. W. BURBRIDGE.

Roses on fences.—There can, I think, be no question that if we want a good display of Roses we must grow them on fences or in some similar manner to afford them the necessary support and leave them pretty much to themselves, as then they send out strong shoots that flower from almost every bud up their entire length and make a grand display nearly the whole of the summer. The sorts best adapted for this class of work are the strong growing perpetuals, of which there are many, and some of the Teas and Noisettes, that are all the better for not having a knife applied to them at all, except it may be now and then by way of thinning. In proof of this one has only to look at the illustration that appeared in *THE GARDEN* of July 27, where plants of John Hopper are shown. This is yet one of the best and most useful Roses, as it is very free, and the flowers, of a soft pleasing colour, are of good form. In cases where it is intended to have Roses grown in the way referred to, it is important that they be on their own roots, else suckers will be coming up from the stocks and the plants will soon go wrong.—S. D.

NOTES OF THE WEEK.

The tree Andromeda.—I forward blooms of *Andromeda arborea*, which I hope may arrive in good condition. They are off a tree at least 25 feet high.—A. WATERER, *Knaphill*.

Helleborus niger var. lacteus.—I send you flowers of this seedling, raised by Herr Max Leibtlin at Baden-Baden, and now fully in bloom here. The tall and elegant flowers as seen growing are rather small, but very distinct.—F. W. B., *Dublin*.

The Apple Rose.—I send fruits and leaves of the great Apple Rose (*Rosa pomifera* major of Parkinson in "*Paradisus Terrestris*," A.D. 1629) from the garden at Mount Usher, Co. Wicklow. Note the fresh Sweet Brier-like scent of its younger leaves.—F. W. B.

Autumn Lilies.—*Lilium tigrinum splendens* is in full bloom, and is quite safe as to weather. *L. speciosum* often has the later blooms damaged by frost. It is early this year, the first blooms in warm situations being out. It is a good practice to cut the later flowers in bud, as they come out well in water.—G. F. W.

The large Snake-root (*Liatris pycnostachya*) is now an object of much interest, the long graceful stems of closely packed deep purple flowers marking it amongst the few tall growing plants as suitable for the select border for late autumn flowering. It is quite hardy, and may be easily increased by division of the roots.

Lilium Mrs. Anthony Waterer.—I send you some flowers of this hybrid from *L. auratum*. I have named it Mrs. Anthony Waterer.—A. WATERER.

*** A very chaste and beautiful variety. The flowers are large, pure white, and densely covered with rich scarlet dots; very effective and showy. It will, no doubt, be found invaluable for market work.—Ed.

Perennial Sunflowers.—Mr. Ware sends us an interesting gathering of these with long Latin names which are not so pretty as English ones would be.

Granting that the Latin name is necessary for the species, the forms would be best with English names. There are forms of the old multiflorous, a large and a smaller single-flowered kind, and two double forms: one *Anemone-centred*, the other and the prettiest, simple strap-shaped in its divisions. All are good plants, that may, however, be easily over-planted.

A note from Antibes.—M. Naudin, writing to us from Antibes, says that the *Fota Eucalyptus amygdalina* is *E. coriacea*. He also says, "The heat is suffocating, but it will probably allow seeds of *Sciana odorifera* and the curious *Saccia elegans* to be gathered. The latter is a *Convolvulus* from Bolivia, a shrub, not a climber, a beautiful plant. We will have plenty of seeds of *Cocos australis* and *Phoenix canariensis*."

Gunnera manicata in Cornwall.—We have several plants of this giant-leaved subject here, and one I think worthy of especial notice. It is growing in a sheltered nook in a mass of decomposed vegetable refuse, and at present has twenty enormous leaves, besides several small ones. The largest leaf is quite 8 feet across on a clear stem fully 7 feet high. This specimen has three immense flower-spikes each 5 feet high. The whole plant forms a mass 25 feet through.—WM. SANGWIN, *Trelissick, Truro*.

Notes from Dublin.—A plant of *Nepenthes Mastersiana* in the Glasnevin collection at the Royal Horticultural Society of Ireland Show, August 22, bearing thirty perfect and large highly-coloured pitchers was the finest specimen I ever saw. In Mr. L. G. Watson's collection at the same exhibition, *Todea superba*, *Vallota purpurea* with 30 spikes, and a noble variety of *Nepenthes khasyana* (= *N. distillatoria*) were very creditable specimens of high culture.—F. W. B.

Lady Sudeley Apple.—I send you two fruits and spur of Lady Sudeley Apple. It is decidedly the best of its season—beauty and quality combined.—Geo. BUNYARD, *Maidstone*.

*** This Apple, certificated by the Royal Horticultural Society, September 9, 1884, under the name of "Jacob's Strawberry," originated in the garden of Mr. Jacob at Petworth, Sussex. It is conical, of medium size and handsome appearance, and is undoubtedly a good Apple of its season, the flesh being firm and juicy. It is very free bearing, and in use from August to October.—Ed.

Tomato Cooper's Luscious.—We have the pleasure to send you herewith some specimen fruits of a new Tomato, Cooper's Luscious, introduced by us last year. The special merit, as we think, of this variety is its sweet flavour, which renders it fit to be used as a dessert fruit. We believe this will be the parent of a new race of this useful vegetable. We are sorry only to be able to send you three fruits to-day, most of them having been damaged in transit from the grounds.—COOPER, TABER, & Co.

*** Not in a condition to enable us to form any opinion regarding the variety.—Ed.

Clematis Jackmani alba.—Like "J. C. B." (p. 148), F. W. Burbridge, and "A. H.," I have been disappointed with the above plant. About three years ago I planted, along with various other creepers, two specimens of *Clematis Jackmani* and two of *C. Jackmani alba*. All the plants have made very good growth. The type has flowered twice, and at the present time is quite covered with bloom. The white form has not yet shown a single flower. Like "J. C. B.," I shall be glad to hear if it has done better with others who have had it planted longer.—E. W., *Crosswood, Aberystwith*.

Spoiling the Snapdragon.—Mr. John Forbes, of Hawick, who "knows things," sends us a box of Snapdragons, weak, poor, and spotty, with feeble stripes and splashes all over them. We feel sure that if he tried he could pick out a noble series of selfs from this fine and hardly-used hardy flower. Forms could be selected from it that would be really beautiful in a flower garden or wherever they would grow; whereas a hundred acres of these would only be a sea of miserable spottiness. The ivory and other whites, lemon and fine dark reds are really handsome plants, and a florist who raises many, like Mr. Forbes, might add new and pretty colours to what we have.

Salpiglossis.—Fragile as the blooms of this half hardy annual are, there is no denying that they are beautiful in the extreme. Recently we saw a fine bed of it on an east border, and the expanding blooms of innumerable shades of colour were very effective. It does best on a rich light soil and in a sunny position. With this, as is the case with numerous other flowers, many fail to see them at their best by attempting to grow them individually.

If all such flowers are grown in masses, then the effect is charming.

A pretty combination.—With some of the finer plants used in bedding out one sometimes sees a good result. One such I saw and admired recently. It was the old blue *Salvia* and *Centaurea candidissima* in association. The plants of *Centaurea* were thinly placed and the *Salvias* dotted between. Their tall spikes of handsome blue flowers appeared to spring out of a cool grey carpet, and the contrast was charming. The eye seems to find relief and repose in these grey-leaved subjects, and they should never be far away from masses of brilliant colours.—A. H.

American Centaury (*Sabbatia campestris*) is a beautiful dwarf annual belonging to the Gentian family, and blooms during the months of August and September, when it produces a profusion of large, pretty rose-coloured flowers. The seeds are simply sown with the other annuals in spring, and if sown with the earlier batch will begin to flower in July, later sowings being necessary for autumn bloom. *S. campestris*, *S. chloroides*, *S. angularis*—the last a handsome plant—are all natives of North America, and should be largely cultivated.

The Sea Heath (*Frankenia laevis*), as we saw it the other day in the herbaceous grounds at Kew, forms a most attractive and useful subject for a groundwork. It covers 2 to 3 yards of the bed allotted to this and allied genera, and forms a perfect carpet of small evergreen leaves, which are just now relieved by the innumerable small and pretty purple flowers. It is a common seaside plant, but appears to do well enough at Kew without the aid of either sea salt or sand. If it would grow as freely in the bulb garden it would perhaps be found suitable as a groundwork for the stronger-growing kinds of *Narcissi*, &c.

Phygellus capensis.—In districts where this does well it is one of the most charming subjects for the flower garden or the rockery that we know. Though a native of South Africa, we have seen it in fine condition as far north as Edinburgh flowering early and in as great profusion as we have ever seen it south of London. It reminds one most of the *Pentstemon*, and bears no little resemblance to *P. Torreyi* with its numerous brilliant scarlet, tubular flowers. When well established and in a fairly sunny spot it appears to be a very free-flowering plant, beginning in May and June and continuing until cut down by frosts in autumn. It may be increased readily by the runners with which it is always well furnished.

The Wedding Iris (*Moræa Robinsoniana*).—In *THE GARDEN*, August 24 (p. 175), it is stated that this noble plant from Lord Howe's Island "never has flowered, whatever the treatment." This may possibly be the fact, but the probabilities are that it is a delusion on the part of the writer, since *Iris Robinsoniana* was chronicled as having flowered in the open air near the lake in Tresco Abbey Gardens both in the *Gardeners' Chronicle* of Sept. 8, 1888 (p. 263), and also in *THE GARDEN* of Sept. 15, 1888 (p. 244). It first flowered, according to the authorities quoted, in the Scilly Islands in 1887, but in 1888 it threw up a spike 5 feet in height, bearing in all, and I presume in succession, about sixty of its large white flowers. This specimen appears to have been presented to Mr. T. Dorrien-Smith by Mr. H. J. Elwes six years previously to its having bloomed. The late Mr. G. D. Vallance, a good man and a genial gardener, was rather proud of having bloomed this gigantic *Iris*, and in justice to his memory let us give honour wherever it may be due, and ever remember that to his skill and care for the most part was due the first blossoming of the Wedding *Iris* in English gardens.—F. W. BURBRIDGE.

The Crested Gentian.—*G. septemfida* seems better suited to a cool soil than a dry sandy one. In a stiff soil with a north or north-west aspect it was one of the loveliest rock plants I saw. It was a mass of lovely deep blue flowers, and very attractive. It is a native of the Caucasus, and in many gardens is still known under the wrong name of *G. gelida*, another Caucasian species, with fine large

yellow flowers, and probably not such a beautiful plant as the above. Few if any of the later introduced species surpass *G. septemfida*.—K.

Erigeron mucronatus, known also in many gardens under the name of *Vittadenia triloba*, is a model rock plant, and very useful for autumn flowering. It reminds one very much of the common Daisy, the rays being rose-tipped, changing to white, so that on a single plant there is much diversity of shade. It has, moreover, an advantage over the Daisy in the profusion of its leafy stems, which, with the flowers interspersed, make a pretty little picture. It is one of those plants that will encroach if not kept in check. It seeds profusely and the ground for several feet round will be found studded with tiny seedlings. These seedlings, however, are not so very troublesome as might be imagined, and the plant is well worth encouraging wherever space can be spared.

Of all the *Eryngiums* we have seen in cultivation in English gardens none can equal *E. alpinum*, as a border plant, and yet how rarely one sees it represented even in good collections. *E. alpinum*, though singularly fine as a specimen plant, should always be planted in large groups, and then the real charm of this remarkable Sea Holly comes out. It is a native of the Alps, rarely exceeds 3 feet in height, and never fails to produce a profusion of its huge steel-blue flowers with stems of the same tint. *E. Oliverianum*, though a worthy rival, is an inferior plant for large groups; and *E. amethystinum*, with the same coloured heads, rarely grows more than 1 foot to 2 feet high, and is more suitable for the rockery.

Potato White Beauty of Hebron.—It is quite a rarity to hear market growers say that any new variety of vegetable has fulfilled the glowing characters with which it is usually ushered into public notice, yet such is the fact with the White Beauty of Hebron Potato, that promises to become more popular than its older namesake with the pink skin. As white Potatoes are certainly more popular and command top prices in the market, I fully expect to see this kind take a leading place amongst early kinds. A grower in this locality who planted a large quantity in fresh soil in the open field assured me that the crop was enormous. Many of the tubers were over 1 lb. in weight, and very few were too small for table. I may add that the Potato crop is one of the best that has been grown for years.—J. G., *Hants*.

A valuable new Cherry.—At the Taunton flower show, held August 15, several very fine dishes of Cherries were staged, but none of them, including Morellos, equalled in size or appearance a grand dish of a seedling variety, raised at Castle Hill, South Molton, Devonshire, and exhibited by Mr. R. Nicholas, gardener at that place. As far as colour and flavour are concerned, the variety much resembles the Black Tartarian at its best, but in point of size the latter is simply nowhere alongside Mr. Nicholas's seedling. I am unable to give the history of this undoubtedly valuable novelty, but it is to be hoped we shall soon hear more of it, and that it will be distributed directly a stock sufficiently large can be raised. Such a fine variety would be appreciated for dessert purposes, and exhibitors would welcome it as a grand addition to the list of choice fruits available in August.—I.

Saunders' Torch Lily (*Tritoma* (*Kniphofia*) *Saundersi*) is an early and gigantic form of the well-known Torch Lily (*Tritoma* *Uvaria*), and is well worthy of a place in all good collections. Its flower-stems tower upwards to a height of from 6 feet to 8 feet and are very stout, bearing at their apices a dense spike nearly a foot in length of orange-scarlet blossoms. The leaves, longer and broader than those of *T. Uvaria*, are also of a lighter green hue. It is by far the finest of all the Torch Lilies at present known to me, but I have not seen the newer kinds offered by Max Leichtlin, Ware, and other nurserymen. So far I prefer to cultivate the variety Saunders', meanwhile rearing a few seedlings of my own every year. As it is, we have *Tritomas* in flower all the year round, beginning with *T. media* in December or January and ending with the later forms of *T. Uvaria* in Novem-

ber. Once again I ask, Who cultivates to-day the pretty little *T. pumila*, as figured in the *Botanical Magazine*? Is it lost to our gardens? or if not, whence may plants of it be obtained? Judging by the figure named it must be a distinct and brilliant little plant, fully equal or superior to *T. Macowani* or *T. corallina*, &c.—F. W. BURBIDGE, *Dublin*.

Gerbera Jamesoni.—This is a handsome as well as remarkably distinct composite, with possibly a good future before it as a plant for the greenhouse. It has been in bloom in the Royal Gardens, Kew, on and off since early June, and we hope to publish a coloured plate of it. The leaves are deep green, somewhat like those of *Francoa* in character, irregularly lobed, and forming a good base to the plant. From this tuft of foliage rise the stems, each about 18 inches high, and carrying a beautifully symmetrical flower of exquisite star-like arrangement, each floret of equal size, smooth, and of a peculiarly attractive and distinct shade of orange-red. It is a welcome acquisition from Natal, and it will be through no failing in the plant if it does not become popular.

The Rev. C. Boys, of Wing Rectory, near Uppingham, having completed fifty years' service in the church of that village, was on Tuesday, August 13, congratulated by his parishioners, who, moreover, propose to place a memorial window in their parish church as commemorative of the event. To our readers the Rev. C. Boys is known as an enthusiastic amateur gardener, who has worked wonders on a cold soil in rather a bleak situation. His papers on fruit tree and *Chrysanthemum* cultivation are well known to the readers of THE GARDEN. The little village of Wing where he has so long resided was years ago famous for a celebrated ancient dame, who professed herself a disciple of *Æsculapius*, and who certainly, if traditional reports be true, worked wonders with her medicines of subtle herbs and flowers.—F. W. B.

A fine spray of Lapageria alba.—I send you a photograph showing a spray of *L. alba* with forty flowers on it, thirty being fully expanded. The length of the spray is 2 feet 6 inches. It has four bunches with four flowers to the bunch, and eight bunches with three flowers to the bunch. The plant from which the spray was taken is growing under the roof of a three-quarter span greenhouse in a box 2 feet 6 inches square. The plant was put into the box about six months ago, and has sent up three very strong *Asparagus*-like shoots. Two out of the three shoots have grown about 20 feet each. Has any reader of THE GARDEN ever seen a *Lapageria* shoot 30 inches long, bearing thirty fully expanded flowers?—ANTHONY BAGG, *The Gardens, Bishop's Hall, Romford*.

New Black Raspberry First and Best.—By this post I send you a photograph of my Black Raspberry First and Best. It is growing against a wall, where it appears to flourish and produces fruit in abundance. I have also several rows growing in the open nursery quarters. These have also produced an abundant crop. The fruit makes a most excellent jam, and I believe, if its good and distinct qualities were more generally known, it would become a universal favourite. The fruit is jet-black and produced in clusters.—R. H. VERTEGANS.

* * Judging by the flavour of the fruit sent it is not, we should think, an edible kind. The poorest Blackberry is a good deal better.—ED.

The Murucuja.—Under this name there can now be seen in the windows of the London fruit shops a number of brownish-yellow fruits, each about the size of a hen's egg, but rather more elongated. When fully ripe the skin is yellow with white spots, but handling and exposure cause the fruit to take on a darker tint. *Murucuja* is the South American name, and it is also known as the *Granadilla*. The fruit contains a whitish watery pulp, which in the West Indies, it is said, "is usually sucked through a small hole made in the rind, which is tough, soft, and thin; the juice has a peculiar aromatic flavour, and is delicately acid. It is very agreeable to the taste, and is much relished by Europeans, as well as by the natives." This is said to be the fruit of *Passiflora laurifolia*. It is

found in the West India Islands, where it is called by the French *Pomme de Liane*, and by the English Honeysuckle and Water Lemon.

Eryngium planum.—This beautiful Sea Holly deserves a note, as it is now at its best. There are many species of this genus, but few finer than *E. planum*, which is distinct, free in growth, and sends up a mass of branching stems, each crowned with a lovely blue-coloured flower surrounded by a few narrow, short, and spiny bracts. A bed of it is remarkably handsome, and so are clumps on either the rockery or border. The *Eryngiums* are being grown in a charming way in the Broxbourne Nursery by planting them between the stones on the rockery, where the rich blue metallic flower-heads and glaucous tinted foliage associate well with the soft grey colour of the stones. This kind is easily raised, either by division or root cuttings.

Blackberry Rose Queen.—In 1887 I distributed a new rose-fruited Blackberry called Rose Queen. Owing to the unfavourable weather of last season and the plants not having been thoroughly established, the fruit did not come to perfection. This season being more favourable I have had a fine crop of flowers and fruit. The flower itself is very uncommon, of a rosy tint, and the fruit, of which I send you some specimens, is transparent, of a brilliant rose; the flavour is peculiar, but most agreeable; in habit it is well adapted for rockwork or trailing over fences, &c. This is distinct from any of the American varieties, as its foliage, which is very ornamental, clearly shows.—R. H. VERTEGANS.

Hybrid Tritonias.—The hybrid *Tritonias*, said to have been introduced by Lemoine, seem to have been very much overrated. I have seen several of the choicest kinds, and with one exception (*Eldorado*) they are very much inferior to the old variety *T. aurea*. Their origin seems not to be fully understood, and I was told the other day by a well-known nurseryman that they had been raised from *T. Pottsi*, and I have also been told that *T. aurea* was the source. Their origin, of course, makes a great difference, because if from *Pottsi*, there is clearly an advance in the right direction; but if from *aurea*, they are much inferior to their parent. *Le Phare* and *Meteore* are very much alike, too much so to be grown separately. *Incendie* is a little deeper in colour, while *Drap d'Or* and *Eldorado*, which I take to be the same, have splendid, soft yellow flowers. *Eldorado*, in my opinion, is the only one worth growing.—D.

Musa Cavendishi.—Will someone kindly tell me how long this plant takes to ripen the fruit? Mine showed the fruit about six weeks ago. There are about 200 fruit that grow well, and a great quantity of smaller ones towards the end that grow but very little. Ought these to be removed, or ought I to let them take their chance?—R. C.

Cedar unhealthy.—I have a Cedar on my lawn about 50 years old, and it seems now to be dying back, as the shoots it made last year are now dried up. The soil is light, and about 8 feet down there is chalk. Could any of your correspondents kindly inform me whether there is anything to be done to stop the gradual decay?—BUNTINGFORD.

Fungi on lawn.—I should be obliged by your advice on undermentioned case. Two and a half years ago I sowed seed for a lawn, the subsoil being raw sand with top dressing of soil. The sward has been infested with fungi, which grow in a band 2 or 3 inches wide in a crescent form. Wherever they grow the Grass dies, and of course the bare patches are very unsightly. What can be done to eradicate the pest?—J. B. HARRISON.

* * The appearances on the lawn are caused by the growth of the Fairy Ring Champignon (*Marasmius oreades*). A dressing of ammonia salts will generally get rid of them. Potash and nitrogenous manures are useful. Avoid superphosphate of lime and the sulphates of soda and magnesia. Decayed farmyard manure and quicklime mixed with surface soil has been recommended. Fairy rings only grow on poor pasture land or in analogous positions, never in rich meadows and their analogous positions. Treat the lawn in accordance with these facts and the rings will vanish.—W. G. S.

BALCASKIE HOUSE.

THIS, the Fifeshire residence of the Anstruthers, is situated 1½ miles from Pittenweem, where there is a station on the St. Andrew's Railway. The house, which is an old substantial structure, was erected by Sir Wm. Bruce, the celebrated Scottish architect, while proprietor of the lands, which were afterwards acquired, soon after the Revolution, by the ancestor of the present proprietor, Sir Ralph W. Anstruther, Bart. The following extract from Sir Walter Scott's diary tells its own story: "May, 1827. Balcaskie is much dilapidated, but they are restoring it in the good old style with its terraces and Yew hedges." The house is interesting to the artist especially for the beautiful alto-relievos by the Italian workmen on the ceilings of the dining-room, drawing-room, and library. The designs are classic, and worked with singular delicacy and taste. The tradition is that the house was

above the level of it. It is upheld by a retaining wall facing south, and which is covered with fruit trees. The ground plan of this terrace was remodelled by Sir Ralph in the early part of this century. The wall which sustains the upper or third terrace, and forms the north boundary, is upwards of 20 feet high and supported by twelve buttresses, each of which is surmounted by an ancient bust of a Roman emperor. Upon this wall are grown over thirty-eight varieties of climbing plants, including fine specimens of Magnolia, Benthania, Ceanothus, Myrtle, &c. In the centre is a bowling-green, breaking the continuous line of a 15-foot walk, which goes the whole length of the terrace. On each side of this walk there are alternate beds of Roses and other plants. At the east and west ends, where flights of steps, each 12 feet broad, lead up to the third terrace, there are two magnificent

terrace and looking southward, the park, beautifully studded with fine old trees, stretches away in the distance. From this terrace there is a fine view of the entrance to the Firth of Forth. Haddingtonshire, where the Lammermoor hills rise up, obstructing further view, but making a beautiful termination to the picture, is also to be seen in the distance.

J. M.

FLOWER GARDEN.

HERBACEOUS PLANTS, INCLUDING LILIES.

I KNOW what Mr. Wolley Dod's experience is and how limited mine is in comparison. I know also what a difference there is between the climate of Cheshire and that of East Kent, for do I not rejoice whenever after a visit to the north I find myself once more amongst its



Balcaskie House, Fifeshire, N.B., from the east. Engraved for THE GARDEN from a photograph by A. Murray, Leven.

to be replaced by an elegant mansion in modern taste by Sir Ralph, but he was persuaded by Sir Walter Scott to restore and extend it as now seen in the photograph. Sir Robert, the first baronet, was the son of the gallant royalist, Sir Philip of that ilk, the descendant in an unbroken line of the brave Italian knight who acquired the lands of Anstruther in the time of Malcolm Canmore.

The gardens are of considerable extent, and formed by terraces, which are situated on the slope leading up to the house on the south side. The first, or bottom terrace, upwards of 3 acres in extent, is devoted solely to vegetables and fruit, which in the strong clayey soil of this locality are here grown abundantly and well. There are no glass houses of any consequence, only a few that are absolutely required to grow bedding plants and those required for house decoration. The second terrace runs the whole length of the kitchen garden, and stands 10 feet

specimens of Cedrus Deodara and two of Araucaria imbricata respectively. The Araucaria is upwards of 40 feet high, the stem measuring 5 feet 9 inches in circumference.

Leaving this terrace and ascending the steps at the east end, we are now on the top terrace, on a level with the mansion, from the east end of which the photograph has been taken. This terrace is divided into four sections—first, the American garden, containing a collection of plants usually grown in such. In the middle is the flower garden, a beautiful geometrical design which is always filled in summer with the best of bedding plants that are known to thrive in the locality. At one corner stands an enormous Cedar of Lebanon, a perfect picture of health in its old age. The west section is used as a tennis-lawn. At the other side of the walk, and at the west end of the mansion, is the Rose garden. On this terrace there are some fine specimens of sculpture. Standing on this

pleasant breezes and bright skies. There is a mistake in supposing that because we are so far south we are therefore in a mild climate; on the contrary, the greater portion of it is bracing, and visitors go to Margate and other seaside places, not as they go to Bournemouth or Torquay, but because they are bracing. I mention this because in writing about herbaceous plants I know how necessary it is to remember from whence the writer hails, so that we may test the value of his statements with regard to the hardiness of particular plants. With regard, then, to

LILIUM CANDIDUM, with which Mr. Wolley Dod and Mr. G. F. Wilson have found a difficulty, I have come to the conclusion, rightly or wrongly, that there is one thing it does like, and that is plenty of sun. There is a row of cottages near here which lie fully exposed to the sun during the last half of the day; they have small bits of garden in front, where one would think nothing would

enjoy itself, yet here the white Lily grows to perfection. I had some clumps of it in my border where they were a good deal shaded by Delphiniums and other plants, and there they were a comparative failure, so much so that I removed them to another part of the garden where they are more fully exposed to the sun, and there they have flowered well. Now I fully expect someone will insist that this is all nonsense, and that the Lilies prefer shade, and give instances of their doing so. I can, however, only give my experience, which is certainly in the direction that I have indicated. The point, however, in Mr. Wolley Dod's notes that puzzles me most is that in which he writes about disturbing the clumps of such flowers.

LILIUM TESTACEUM, which used, I believe, to be called *Isabellinum*, I had always understood, followed the rule of most Lilies and disliked being disturbed as little as possible. My clumps have been in their present position eight or nine years, and they have certainly not improved during the last two years, but this I attributed to the dry season of 1887, which, as I believe, ruined my large clumps of *umbellatum* and *aurantiacum*, the common Orange Lily, but which may have arisen from the cause which Mr. Wolley Dod states. I notice that where the clumps of *umbellatum* were there are a number of small bulbs, and I suppose the better plan would be to take these up and make a fresh clump of them. One of the most satisfactory Lilies I have had is

LILIUM AURATUM PLATYPHYLLUM. It does not seem to possess that constitutional delicacy which makes *auratum* so difficult to keep—it is also a very fine flower with broad petals, and the foliage is, as its name implies, also broader than the type, suggesting an approach to *L. lancifolium*, of which I believe some people believe *auratum* to be but a hybrid. I have asked for information about *L. Harrisii* or *floribundum*, whether it goes back to the one-flowered character of *longiflorum* after a year or two, but I have not obtained any reply. Can anyone tell me if this is so? If it is simply *longiflorum* altered in its character by cultivation in the kindly climate of Bermuda, as this is more likely than that it should revert again when its conditions were again altered.

LEWISIA REDIVIVA.—I noticed somewhere the other day that a writer wonders why this curious and pretty plant is not more cultivated than it is. My experience of it is that there is much of the *Lewisia* and not much of the *rediviva* about it, for after it has flowered, I never could by any chance keep it, and as it is a somewhat expensive little gem it does not pay to grow it, however pretty it may be. I do not know whether any of your correspondents have been successful with it. If so, they would confer a boon on lovers of herbaceous plants by letting them into the secret of their success. I notice very often of late some boast of their success with difficult plants on the strength of one or two years' experience, but this is not enough. A plant to be successfully grown must, I think, have a longer record than that. The plants when received have been most probably grown in a frame; they are sufficiently strong to endure the changes for one, and perhaps in some cases two seasons, but succumb when they can no longer enjoy the comforts and care connected with a frame. I have thus seen such plants as *Lewisia*, *Eritrichium nanum*, and other capricious little gems gratify the owner for a season or two, and just when he thought that he had overcome the difficulty of their growth, they disappoint him by vanishing altogether.

ANDROSACES.—While some of these, such as *sarmentosa*, *villosa*, and *lanuginosa*, are very easy to grow, others like *carnea* are very difficult; in fact, after having tried the most opposite treatment which I have seen recommended for them I have been obliged to give them up. I have noticed that one large patch of *Androsace sarmentosa* has very much diminished in the size of the rosettes, and from the vigorous appearance of another batch, which consists of small plants taken from the former one, I am led to the conclusion that the whole clump requires taking up and replanting in fresh soil. This leads up to a question I hardly ever see touched

upon, viz., the best time for removing and dividing herbaceous plants. Should it be done after flowering, or in the autumn, or left until the spring? I have some Delphiniums and Spireas I want to move, and yet I am at a loss to know when to do it. If removed in the autumn, will they make sufficient root growth to enable them to withstand the winter? while if deferred until the spring, are they not likely to suffer from want of time to recover from the removal and get sufficient root-hold before the plants begin to start for flowering, my impression being that one thing at a time is all we can expect them to do? I should, therefore, be glad to have the opinion and advice of some competent authority, for, curiously enough, it is a point upon which books on the subject are singularly deficient.

ORCHIS FOLIOSA.—Few plants have given me more pleasure this year than this beautiful and vigorous growing Madeira Orchid, although it has not yet attained the dimensions I have seen it in Messrs. Backhouse's nursery at York, where I have seen spikes 2 feet in length. The colour is a rich purplish mauve, and the whole appearance of the plant is very handsome; nor does it, like so many terrestrial Orchids, come up at a distance from where it has grown, one of the reasons, I think, why so many of our "natives" are difficult to keep. Of a very different character is

CYPRIPEDIUM SPECTABILE (the North American Lady's Slipper). My clump of it suffered from the drought of 1887, for it is a moisture-loving plant, but it has since then recovered considerably. I do not care to take it up, but think that I shall remove some of the soil and give a supply of fresh peat, giving it, in fact, a good top-dressing.

Might I here suggest that it is very desirable when collections of cut flowers of herbaceous plants are shown that care should be taken as to the naming of them. Some glaring instances have come before me this summer, and this affects not merely the exhibitor, but also misleads many who visit the shows. Another matter of great importance is, that those who cater for the public should be accurate in what they send. Thrice have I tried to obtain *Arnica montana*, and each time I have had sent me a *Senecio* instead. I ordered *Lathyrus Sibthorpi*, and found after two years growing it that I have simply got the common Everlasting Pea (*L. latifolius*); and, of course, the older one gets, the less does he like to have a year or two of his time wasted on what he does not want. It is of course difficult to keep the species of a genus distinct, but I do not think that the individuals of one genus ought to be mixed up with another. There are some firms which are especially careful on this point, while there are others who, from either ignorance or carelessness, often disappoint those who have to do with them.

The present season has been so far a favourable one for herbaceous plants, which I hope are laying up a good store of strength and vigour for next season. DELTA.

Lilium auratum cruentum.—This variety of the golden-rayed Lily, of which mention is made on page 142 of THE GARDEN, is most beautiful when the blossoms are freshly expanded. The rich glowing crimson band which is present in the centre of each petal quickly changes, however, to a dull chocolate tint, and the flower is then not nearly so attractive as at first. Still, where several blooms are present on one stem, a succession is kept up for a considerable time, and though the flowers that have been open for some days are much inferior to the freshly expanded ones, they even then are so distinct from those of the typical form of *L. auratum* that they will at once commend themselves to the lover of Lilies. In direct contrast to this may be noted the variety *Wittei*, the colour of whose blossoms is a pure unspotted white, lit up by a golden stripe down the centre of each petal. The individual blooms are smaller than those of most forms of *L. auratum*, and are of a neat, rounded shape, with thick, wax-like petals. The blooms of *cruentum* are larger and of a more open character than those of *Wittei* or *virginale*, as it is often called, but from the absence of high

colours in the petals, these last remain in beauty longer than the deep-tinted form. Both are among the rarest of the *auratum* section, and both are imported into this country from Japan during the winter months in small consignments. The variety *cruentum* is usually sent here under the name of *rubro-vittatum*, and sold as such at the various auction sales. The bulbs are smaller than those of the commoner forms of *L. auratum*, and are also rather more delicate in constitution. As far as my experience extends, the bulbs can usually be depended upon to prove true to name. Another variety of the golden-rayed Lily, which has been imported into this country in large numbers within the last few years, is *platyphyllum*, a very distinct and handsome kind. This may be easily recognised from any of the others by the scales of the bulb being whiter and larger, but more particularly by reason of the sturdy growth and very wide leaves, combined with large, massive, somewhat saucer-shaped blossoms. The flowers of this vary in colour, not to the same extent as those of *auratum*, it is true, but some are quite spotless with just a yellow band down the centre of each otherwise, pure white petal, while in others the flower is very much spotted. The above include the most strongly marked varieties of *L. auratum*, but it is such a variable Lily that where a quantity is grown it is possible to select a great many distinct forms.—H. P.

NOTES ON HARDY PLANTS.

Lobelia fulgens.—If this is tried it will be found to answer quite as well in the ordinary borders and beds as in damp places. It is a mistake for people to forego this brilliant autumnal flower from a fancy that it can only thrive in moist quarters. If it is given a deep bed of rich loam it will stand well in the sunniest position and need no more care than other things. Of course, if the season is dry it will be better for an occasional soaking, but that is all; and what is of still more importance perhaps under such conditions, the roots stand the winter far better than in damp soil. All this I have proved year after year.

Saxifraga cuscuteformis.—This is often said to be rare and not hardy. It has lived here in greater or less quantity for thirteen years, and in a way it is hardy enough. It will stand intense cold with dryness. Winter wet kills it; I therefore keep it in a cold frame. At present this plant is lovely; its big flowers are like daddy-long-legs on the wing and dressed in white, each bloom being upheld by a stalk as thin as a horse hair. What if this gem must have a pot and a corner in a frame! Everything about it, from the veined, variegated, and notched leaves to the delicate flesh-tinted stolons and snow-white flowers, is so pretty and full of character that it well repays a little care. When the cold weather comes I merely collect the progeny that have run over the sides of the pot and along the surface of the plunging sand, insert each little tuft in a pot, not covering the knobs; these spring into life about March and flower in late summer, as my present ones are doing.

Spiræa astilboides.—Everybody now inquires for this plant, and it is well that it can be quickly increased. I wish, however, to point out a quality which no doubt others will have observed, and that is the rich bronzy brown foliage, which when cut is most effective. No *Spiræa* is hardier, and besides it may be grown to perfection in an ordinary border of deeply tilled soil, and without the boggy condition.

Delphiniums.—This is a good time to operate on the finer Larkspurs that it may be desirable to increase, and in doing so it is helpful to wash the roots, but the practice is not good all round. Washing roots is good in some cases. As a hard and fast rule, however, it may not always be advantageous, but just the opposite. Much depends on the age of the plant and everything as to its condition otherwise. If a plant has been well cultivated and the roots are in sweet soil and not matted, what would be gained by washing them?

And if the roots were very active, with the points succulent and brittle, it would go hard with many a non-robust species to wash its roots. Moreover, some Delphiniums and Geraniums that have their roots cut or torn show a dislike for water by splitting and curling their stronger parts. As with many other matters, root-washing will require to be done with the greatest discrimination and care. I find it not only a safe plan to divide Delphiniums in early autumn, but the divided pieces are assisted by being set in sand beds at once, and in spring they may be lifted with their masses of new rootlets and quickly placed in borders that could not, perhaps, well be got ready for them in early autumn. The practical gardener knows well that scheming to make things dovetail in this manner is quite as important in the pleasure as in the kitchen garden. I find that scores of hardy plants may be treated in this way, and they are the better for it. In all gardens where hardy plants are largely cultivated there should be a series of sand beds.

Phyteuma caudatum is a pretty plant with curious flowers. Its dense tufts of Grass-like leaves, almost resembling common Thrift and of the deepest green, render it a fitting rockery subject. It does not seed with me, and so far as my experience goes it is all but impossible to divide it. There is a peculiar cause of injury that happens to it when in full leaf: slugs eat off the leaves near the crown, and the milky sap escapes in such quantity as to nearly cover the crown. When it dries it has a cheese-like consistency, and often causes the parts covered with it to decay. The flowers are dark blue-purple, in compact small heads on stems each 4 inches to 6 inches long.

Primulas.—These, if looked over now, may in some, perhaps many instances appear unsatisfactory. Now is the time when the young grubs of the hard dull black weevil begin to feed, and Primula roots seem to be their favourite food. I never consider my Primulas safe if they have not been shaken out and repotted every year, and when I see those of my amateur friends which do not have such treatment, my wonder is, not that they have losses, but that they have not more. In my experience, all the other pests combined are not so deadly as this grub at the roots. Both the European and Indian hardy species, but especially the latter, are badly attacked. The mere fact of shaking out the pot plants will almost be enough to keep this pest in check, but if there are signs of its presence, it should be sought in the root-stock. Plants in the open are not so easily dealt with; I have been lifting some, and what I found showed the necessity of doing so.

Littonia modesta.—I shall not be surprised if the reader ridicules the idea of my notice of this plant under the "hardy" heading. I have wintered this tuber in the open, and also met with another instance. I am aware that this handsome climber has long been grown under stove treatment, but that does not imply much, for you may grow Ivy or Holly beautifully in a stove, as I have done by way of experiment. Pots of tubers were left out plunged in sand by accident all last winter, and all have done as well as usual since. Mr. Bartholomew, of Reading, grows it out of doors, and I saw it in bud in July. I asked him if he thought it would stand out, and he said, "Yes." With deep planting in well-drained soil I am certain it will be as safe and hardy as *Amaryllis Belladonna* and the tuberous *Tropeolums*; and if so, what a gain it must prove. What have we in the way of a small bright orange Lily that climbs? and the big pods of seed, how rich when they burst, retaining by a filament the bright scarlet fruits in orderly array.

Galax aphylla.—Why do not our American friends take the hint and send us some of this in nice cultivated pieces. It is a most coveted plant and seldom procurable. It is one of the sweetest things for autumnal effect; the ruddy shining leaves are equal to flowers. When grown well exposed it is attractive all the year round. Among hundreds of rock and alpine plants this, though but a few inches high, stands out distinct in beauty and effect.

Epilobium Fleischeri.—I have just seen this

very dwarf Willow-herb, and it has done remarkably well this season. The tree-like habit, abundant and prolonged flowering amply qualify this bright-flowered species for many uses in late summer. All I will say is, "try it," if you have stiff moist land. J. WOOD.

Woodville, Kirkstall.

Hyacinthus candicans.—By far the prettiest thing we now have in the flower garden is a large group of this rising from a carpet of the grey-leaved *Veronica incana* and *Stachys lanata*. The ground is hidden with foliage of a colour that the eye delights to rest upon. Arching above the carpet are the long green leaves of *Hyacinthus candicans*, and above these stand about fifty stately spikes of flowers, which will continue fading and opening all through the autumn. There is not a more beautiful bulbous plant for the garden in late summer and autumn than this.—A. H.

The Prairie Sunflower (*Harpalum rigidum*).—This, in my opinion, is the best of all the Sunflowers and should be in every garden. It is invaluable for cutting from, as its bold, bright yellow flowers make a fine show in vases, and last fresh almost as long in water as they do on the plants. The stems, too, are very strong and stiff and hold the blooms well up and erect, so that there is never any appearance of drooping. In habit the plant is strong and robust, growing about 4 feet high, and in good soils the roots run about freely round the crown and send up numerous suckers in the spring.—S. D.

Gypsophila paniculata.—Although this is not a showy plant, it is one of the most useful for cutting from to dress vases or for working up in bouquets, as its panicles of bloom are exceedingly light and graceful and lend quite a charm when mixed in with other flowers. It is of dense and bushy habit, and sends up stalks from the crown that branch out into numerous thread-like stems on which the tiny white blossoms are borne. This plant seeds freely, and the stock may be readily increased by seed or by division of the crowns, which should be done in spring and the seedlings planted at the back of the herbaceous border or in quantity in the wild garden, for which position this *Gypsophila* is admirably adapted.—S. D.

Everlasting Peas.—How very useful and showy these are and such persistent growers, that they will live and thrive in positions where few other plants would exist, for now and then they may be seen in courtyards sending up their shoots between the joints of bricks, or running up and supporting themselves by grasping with their tendrils the branches in hedges of cottage gardens, or shrubs in borders, which they almost overwhelm, but clothe with fresh beauty. This habit and facility for taking care of themselves render these Everlasting Peas of great value for shrubberies, the wild garden, or the backs of borders in front of Evergreens, in either of which positions they are very effective and afford no end of flowers for cutting. The white is one of the best things that can be grown for wreath-making, as the flowers look very chaste and stand well. Plants of either may be raised by sowing the seed as soon as it is ripe. The best way to prevent mice destroying the seeds is to sow under handlights and plant out the seedlings in spring, or Everlasting Peas may be increased by dividing the crowns.—S. D.

SHORT NOTES.—FLOWER.

Maiden's Wreath (*Francia ramosa*).—Although somewhat tender, this beautiful plant may be advantageously given a place in the flower garden in a sheltered position. Not long since I saw an instance which corroborated this fact. A cottager had grown a fine specimen of it for several years in his window, and having no large pot in the spring for repotting it, he planted it out against the wall of his house. The result was that the plant grew more vigorously than ever, and is now throwing up numerous long stems covered with pinkish white flowers.—C.

Harpalum rigidum naturalised.—Beautiful though it be, most growers of this plant know full well that when mixed with other subjects on a border

it has a tendency to spread rapidly, and frequently to the detriment of other subjects. This I experienced when in charge of a large flower garden some years ago, and to keep it within bounds constant attention was necessary. In spring when the borders were dug we usually picked out all superfluous roots and planted them in semi-wild places, by the sides of woodland walks, on grassy plots, and in shrubby borders. With no attention whatever these have now become thoroughly established, and produce their beautiful yellow blooms in profusion.—C.

KITCHEN GARDEN.

EARTHING UP CELERY.

How often do we see Celery earthed up, or rather soil put to it, long before it has completed its growth. This is the greatest mistake possible, as should the weather prove dry and artificial waterings have to be resorted to, it is almost impossible to give them without washing the earth into the crowns, although long steady rains may wet the roots without doing harm. Rain, however, cannot be depended on to come when wanted, and the safer and better way is to leave the rows of plants as they are, and keep on watering and giving liquid manure frequently till quite the end of September, as from now till then growth in Celery is generally most rapid. Those who happen to have Celery early and want to blanch it, will find that they can do so by binding it round with thick brown paper, or, if near the sea-shore, by using sea-weed. The sea-weed will not only exclude light and make the Celery white, but it will keep away slugs and worms, which often do a deal of harm to the stems, as not only do they disfigure the outside, but they get into the inner leaves and heart and furrow them in like manner. A good substitute for sea-weed may be had by making haybands of any soft inferior hay or dry Grass, and wetting them in salt water, which will in no way hurt the Celery, but will keep away the insects referred to. Our practice with regard to the plants, and it is one I can strongly recommend, is to go over the whole about this time, and run a piece of matting or raffia round each. This draws the leaves up together and greatly facilitates the work of earthing later on. Without the ties the outer leaves grow in anything but an upright direction, and it is a difficult matter to earth it. Later on the stalks become stiff and brittle, and often break at the base when drawn close by the hand. Tying prevents all this, and yet admits of full and free watering as long as growth continues, and not till that is finished is it necessary to commence blanching operations. S. D.

Vagaries of the Tomato.—How new varieties of Tomatoes are raised is a subject that has perplexed not a few. But to those who have raised and fruited a good number of plants and watched the characters they develop it is no longer a mysterious subject. One could hardly pass a season amongst them without being struck with the behaviour of some of the plants. This has been my experience, and a more extended practice this season further strengthens my previous views. Sometimes a Tomato plant will develop characters in the direction one would least expect. At the present time I have a plant bearing large yellow corrugated Tomatoes, the seed of which was last season saved from Hathaway's Excelsior. This instance is sufficient to explain how new varieties are raised. I am perfectly satisfied that there was no mistake in the matter, as I selected the fruit and cleaned the seed myself, all the other details having been done by my own hands. In this case it will be seen that there is a wide departure both in the colour and form of the fruit. There is a good deal that is perplexing in the growth of Tomatoes;

for instance, why will not the smooth-fruited sorts set their fruit during the winter and early spring as freely as the ribbed kinds? Another point that puzzles one is, why do all the flowers on the first bunch and only one or two on the second set, while on the succeeding one all will develop good fruit? Again, why should the first developed fruits be the most ill-formed of any on the plant? In the case of the corrugated kinds the fruit are sometimes positively ugly. In other cases the foliage differs considerably upon plants obtained from seed taken from an individual fruit. I have plants of Laxton's Open-air that have foliage both broad and flat without a wrinkled leaf. In other instances we may often find deeply corrugated fruit on plants of the Perfection type, and perfectly smooth fruit on the ribbed sorts. So marked is this, that the most skilful grower would not be able to tell to which sort they belonged. The last case I shall mention is that out of about 200 plants which I am growing I have a single plant of Dedham Favourite. How it came into my possession I do not know, as it was not raised from seed of my own saving. This plant is the produce of a packet of seed of King Humbert, a totally distinct kind from Dedham Favourite. From the cases I have mentioned it will be seen that the Tomato has the capacity of developing several characters from individual fruit. —J. C. C., *Taunton*.

KITCHEN GARDEN NOTES.

CARDOONS.

ON heavy soils these have not made very satisfactory progress, the ground being far too cold and saturated to suit them. The best rows I have seen this season are in a garden where the soil is naturally light and rather shallow, the subsoil being of a gravelly nature. In this situation the Cardoons are unusually luxuriant, and fine succulent stems will be available whenever they are required. In but few instances is it necessary to use the watering-can, but all the same it is advisable to examine the soil about the roots, water or weak liquid manure being given freely if it is found at all dry, or otherwise premature bolting may be the consequence of neglecting this precaution. The more forward rows of plants must be allowed to attain nearly their full size, or it will prove a very difficult matter to bring the stalks up together to effect the proper blanching of the hearts. The latter important process should be proceeded with on much the same lines as recommended for Celery, that is the moulding up with soil ought to be done gradually, or according as the inner leaves and the heart rise. Instead, however, of tying up the outer stalks or attempting to hold them together in any way, the better plan is to well and closely bind them round with hay-bands, this effecting the double purpose of keeping the outer stalks together and also excluding the soil from the hearts. It is very difficult in the case of the spiny varieties, and the French plan of using leather gloves and aprons is to be commended. After the plants are thus bandaged up the soil should be banked up round them, repeating the process about every three weeks until the tops of the leaves only are exposed. Cardoons blanch rather slowly, and are fully ten weeks after having been moulded up the first time before they are fit for use.

BLANCHED ARTICHOKE.

Globe Artichokes are closely allied to Cardoons, and by some are blanched and prepared for the table as a good substitute for them, being then designated Chards. This season has been rather favourable to the late growth of Artichokes, and in most instances there are plenty of strong suckers that will soon be fit for blanching. Suppose, then, one or more rows can be spared, or are to be destroyed, it is advisable to at once thin out the suckers, leaving only two or three of the strongest to each old stool. The soil about the roots ought also to be examined, and if found in a comparatively dry state be given one or more heavy waterings, liquid manure not being thrown away on them. When these suckers have attained their full size, or in any case before severe frosts are anticipated,

they ought to be enclosed separately in hay-bands and moulded up completely, the top of the ridge being neatly finished, so as to throw off heavy rains. The blanching will be effected in from six to eight weeks, and if the position is not low and wet the Chards will keep for some time, or they may be lifted and stored in rather dry soil or sand under cover and drawn from as required for use.

SCARCITY OF CAULIFLOWER PLANTS.

Judging by what is taking place here, more than ordinary pains will have to be taken this season in rearing a sufficiency of plants to keep through the winter. In the first place, the seed germinated indifferently, and, to make matters worse, oft-repeated dustings of soot and lime have not preserved from the tough little black slugs what seedlings did appear. The only remedy is to use what seed is left in the packet or procure more, sowing this where the seedlings can be protected, without removal, from severe frosts and other enemies. A sunny border answers well for this purpose, but we prefer to utilise an old frame for both raising and wintering the plants. This is set in the frame ground, with the corners resting on bricks, inside being placed a layer of partially-decayed manure and leaves, facing this over with about 4 inches of fine soil. The seed is sown thinly broadcast and lightly covered with fine soil. After the seedlings appear, the lights are thrown back and not put on again till it is necessary to protect the plants from severe frosts. In this manner a large number of sturdy plants may be reared and kept through the winter, these sometimes eventually doing better service than any raised earlier and pricked out, especially if the latter are much coddled.

RIPENING ONIONS.

Such a long spell of dull showery weather as we have experienced this summer has been very unfavourable to the maturation of Onions generally. Innumerable large breadths are yet to be seen still quite erect and green, bull-necked bulbs being very prevalent. This is much to be regretted, as badly-ripened Onions never keep well, and besides, the ground they now occupy is wanted for a Cabbage bed. All, therefore, with their tops still erect ought to have these rather roughly twisted down, this effectually checking top-growth and hastening the swelling and firmness of the bulbs. The sooner those with their tops nearly or quite brown are cleared off the very moist ground the better. The roots perish at the same time as the top ripens, and directly a bulb can easily be drawn this should be done, or otherwise it may start rooting afresh and thus destroy its keeping qualities. The bulbs must not, however, be stored till they are thoroughly harvested, and if the weather is unfavourable to their being laid on mats disposed on a sunny walk, they ought to be laid out thinly either on the staging, shelves, or dry floors of early vineries or other comparatively empty houses. Not till they are thoroughly dried or baked and quite firm should they be stored, and in every case very thin storing will be necessary this season. The old-fashioned mode of roping Onions, that is to say, tying in long bunches or on ropes or stakes, these being suspended in airy sheds, is yet the best, those stored in heaps being the first to start into growth. Tripolis, whether spring or autumn sown, are invariably the worst keepers, very few lasting good till midwinter. These, then, should be first used, and after these those of the White Spanish type, among which are included Nuneham Park, Reading, Banbury, and other popular varieties with rather flat, straw-coloured bulbs. Veitch's Maincrop, Giant Zittau, Bedfordshire Champion and Brown Spanish are fairly long keepers, but in this respect do not equal Brown Globe, The Wroxton, and James's Keeping. The three latter ought, therefore, to be taken especial care of, amateurs especially being advised not to use any of them while any other variety is available.

WINTER SPINACH.

If from any cause the seed sown early in August has failed, more should be got in at once. Unless it is a very bad failure it is not advisable to hoe over and re-sow the whole bed, but shallow drills

may be opened and seed sown wherever the worst failures occur. On warm subsoils the later sowings, or those made towards the end of August, sometimes succeed the best; but, as a rule, the earliest raised plants prove the most serviceable, and good care should, therefore, be taken of them. In showery weather transplanting may safely be carried out, and for this reason it is advisable to thin out the seedlings where crowded, very lightly at first, the final thinning being deferred till the plants are large enough to dibble out where blanks occur. Sprinklings of soot and frequent surface hoeings have a most beneficial effect upon Spinach.

LATE TURNIPS.

Late sowings have fared badly this season. In our case both worms and slugs cleared all before them, and it has been necessary to sow twice, and in some cases three times, before a fairly good breadth could be obtained. At this late date it is useless to sow more seed of any but the quick-growing varieties, notably the Early Milan, but much may be done by transplanting seedlings before they commence to bulb. We usually find it necessary to transplant few or many late-raised Turnips, and have in extra bad seasons formed a large bed entirely with the thinnings obtained from three or four rows. It is unwise to thin out other than lightly at first, the final thinning, as in the case of winter Spinach, being deferred till it is seen what may be needed for transplanting or dibbling out elsewhere.

W. I.

A WELL-MANAGED GREENHOUSE.

I HAVE more than once seen the assertion made that the best culture is generally to be found in small gardens. However this may be, it is certain that where the glass area is very limited gardeners have to exercise a considerable amount of care and ingenuity to make the most of it. Variety is as much thought of by the owners of small as of large gardens, and the consequence is that plants differing much in their requirements have to be grown together. It is a credit to any plant grower who can produce good examples under such circumstances, and many of the fine specimens that have taken honours at the London exhibitions were grown where the glass accommodation was so limited that one might reasonably suppose it to be impossible to cultivate plants to such perfection. About twenty years ago, the plants of a grower who exhibited regularly were noted for their remarkably fine appearance. This man had such a limited space wherein to grow his specimens, that, in order to keep them in good condition, he made a point of putting some of them in the open air for an hour or two whenever the weather permitted of so doing. This necessarily caused a considerable amount of labour, but it was found to be necessary to maintain the plants in the best condition and shows what must be done where plant culture has to be carried on under such comparatively adverse circumstances. Some time ago I saw in a villa garden an example of what may be done with but one glass house. This is a span-roofed structure about 12 feet wide, with a rather low roof glazed with tolerably large panes of glass, and is divided into two compartments and both heated in the usual manner. At the time of my visit one side of one compartment was occupied with Cucumbers, bearing a heavy crop of good fruit. Under them was a collection of Ferns and some shade-loving, fine-leaved things in the best of health. On the opposite side was a Stephanotis thinly trained on the roof and full of bloom, the stage underneath it being taken up with Dracenas, Ficuses, Crotons, and similar things in small pots. Nice healthy Gardenias in 8-inch pots were bearing an abundance of fine blooms. The other compartment contained flowering plants of various kinds, all well grown, and a shelf at the top of each compartment was filled with Strawberries, some ripening, the others coming on. The total length of the two houses is not more than 30 feet, and I never remember having seen so much variety in so small a space in combination with really good culture.

Everything looked thoroughly healthy, and it was pleasing to see such good use made of the limited accommodation.
J. C. B.

BEAUTIFUL WINDOW GARDENING.

WHENEVER the general conversation turns to window gardening it is quite a common experience to hear the familiar comment, "Ah! you should see how beautifully it is done in London." "In what part of London?" I have now and then asked. "Oh! in Piccadilly or in Kensington," comes the reply. "Oh, yes," I answer, "but a good deal of what you see in the localities named is not window gardening of the best and permanent type, but is often carried out by the florists by the month or by the year." My notion of good window gardening is that carried out in its entirety by those who live behind the beautified panes.

Again, the window-box or flower-pot style of window decoration is not always the most worthy of adoption—a remark amply proven by the illustration herewith given. Window-boxes and flower-pots, which look at home in the cottage or villa residence, are somewhat apt to jar a little as seen in the windows of a castle or a church, but no one could well object to the simple and appropriate window decoration by means of beautiful and naturally grouped climbing plants as here shown. The plant most evident on the central mullion and to the right is the Japanese Hop plant (*Humulus japonicus*), an easily reared annual of less massive habit than is *H. lupulus*, our native and perennial species. There is no lack of climbing vegetation of the best for window gardening of this kind. Clematises of many kinds, Ivy of the large and small-leaved forms, Virginian Creeper, *Tropeolums* and Jasmines of varied sorts and exquisite perfume. Nor must we forget that most queenly of all the flowers of the window casement—the Rose. Beneath the windows on the borders near the house we can, as Bacon tells us, plant herbs yielding their delicately perfumed breath—Lavender, Rosemary, Wallflowers, Camomile, Thyme, Musk, Pinks, and Carnations, sweet-scented Verbena, and the cut-leaved Pelargoniums, to say nothing of many other exquisite and homely things. One of the nicest things for draping large windows at a considerable height from the ground is Veitch's Japan Creeper (*Ampelopsis tricuspidata*). At Oxford the windows of some of the colleges and churches are fairly covered with its elegant leaves, mullions, glass and all, so that when you are inside on a blazing hot day in summertime "you look out through a translucent leafy screen, and appreciate the calm coolness and repose of the cloister-like shade within." Our illustration in reality shows us a happy wedding between the frozen or solidified music which Mme. de Staël called architecture and some of our more exquisite forms of vegetation. In the wiser days of the future we trust that the architect will recognise the added beauty that plants of many suitable kinds can bestow upon his finest work, and that he will provide permanent receptacles in his window-sills for beautiful flowers. The window-box at the best is only a makeshift, and should be the work of the builder rather than of the

carpenter or of the horticultural furnisher. Only yesterday Canon Ellacombe told us of the use of the Carnation in window-boxes and other receptacles in Switzerland, positions in which it can grow as naturally as it does on its native rocks in Normandy, or as hanging on the walls of the bastions and keep of the noble old Chateau Gaillard, as it frowns, a ruin to-day, over the birthplace of Nicholas Poussin and the ever-winding and beautiful river Seine.

Our engraving is from a photograph kindly forwarded by Miss A. Downward, of the Castle, Shrewsbury, and it may be considered as an illustration of a phase of window gardening a little removed from the ordinary type. Now that tasteful window gardening is affected by all classes, we trust the architect will see his way to provide in the best manner for the more perfect



A window garden.

enjoyment of one of the best and most popular phases of domestic gardening.

F. W. BURBIDGE.

Stokesia cyanea.—Although this pretty plant has been introduced more than a century, it is not often seen. A colony of it is now in fine flower in Mr. Thompson's garden at Ipswich. The flowers are large, blue, and resemble those of an Aster. They are borne on branching stems, and whilst showy upon the plant, are attractive and long-lasting in a cut state. The plants at Ipswich are frequently divided, and the treatment, combined with the light, warm soil in which they grow, suits them. Upon cold or heavy soils this plant would not prove hardy, but it is an excellent subject for pot culture, as it will flower through the autumn into winter, and its pretty blue flowers will be found very useful for the greenhouse or conservatory.—A. H.

Roscoea purpurea.—This uncommon Himalayan plant is flowering finely in Mr. Thompson's garden at Ipswich. It grows about 10 inches high, forming a single stem clothed with long light green leaves which sheathe the stem. The flowers appear successively from a cluster of bracts which terminate the stem. At first sight the flower might be

mistaken for an Orchid. It is about 2 inches long and of a purple colour. The upper petal is erect and arched; the two lower ones are long, narrow, and spreading, the two lateral ones being white, and the lip is obovate, about 1 inch long and half an inch broad. It is growing in a light, warm soil, and is easily increased by division. Such a distinct and pretty hardy plant as this should be more frequently seen.—A. H.

FRUIT GARDEN.

LARGE AND SMALL POTS FOR STRAWBERRIES.

I HAVE grown Strawberries in pots of various sizes, and found that it was just as easy to obtain good fruit in $4\frac{1}{2}$ -inch pots as in larger ones. I remember some years ago that having layered some of the old Underhill's Sir Harry, now almost gone out of cultivation, in $2\frac{1}{2}$ -inch pots quite late in the season. I did not shift them. They were stood closely together in a long row on a shelf, and the fruit hung so thickly on them that one could hardly put a finger between the berries without touching them. A string was stretched along for the flower-stalks to rest on, and looking down them there seemed to be a solid line of fruit. I never remember to have seen a prettier crop of fruit than that was. For early forcing I am decidedly in favour of $4\frac{1}{2}$ -inch pots, as they can be filled from top to bottom with good roots, and it must be a careless man that will overwater such plants. For early work I do not consider a Strawberry to be up to the mark unless the roots appear to have eaten up the soil. For crops that are to come in from the middle of April such well-rooted plants are not so much required, although I have always tried to have them in that condition. In a season when we get a fair amount of sun indifferently rooted plants will come on very well with careful watering, but it is the periods of dull weather that try them, and under such circumstances they often fail to push up their flower-trusses so strongly as they should do. If small pots are used, I do not think that the runners should be layered before August. If they are layered early in the season they make so much foliage that in very hot weather it is difficult to keep them moist, and whatever may be said to the contrary the plants ought to be fed when the pots are full of roots. The first runners put into $4\frac{1}{2}$ -inch pots will have made four or five crowns with corresponding leaf growth by the end of August, and the soil will be so packed with roots that the plants might be turned out and tossed about like a cricket-ball without disturbing the roots. Such plants require watering three times a day in parching weather, and it stands to reason that the soil cannot contain much nutriment. By layering at the later date they will become well root-bound by autumn, and will have about three good crowns each, which is quite enough for the size of the pots. For later crops it is just a matter of fancy as to whether 5-inch or larger pots should be used.

A certain amount of room is required for each plant, and it will depend upon their size as to the number that are needed to fill up the space. I once grew some plants in 8-inch pots, and they were as large as good open-air stools, and bore from 1 lb. to 2 lbs. of fruit each. They were the best of the plants in 5-inch pots that had been forced the previous year and were shifted in July. They were by far the finest lot of pot Strawberries I ever saw, but I never repeated the experiment, as it seemed to me that it was just as well to have a larger quantity of plants in pots of a more manageable size. The plant I like best is that which has three or four good sound crowns in a 6-inch pot. I have generally found that such plants give the best fruit, the flower stalks being stronger than when the crowns are more crowded. They have sufficient leaf development to allow of the pots being well filled with roots, but do not require that close attention with watering as in the case of larger plants. This is the kind of plant that market growers generally favour. I have had plants with six or seven crowns in

6-inch pots, but when the fruit was swelling up in a May sun I had to stand them in pans, which were filled twice a day. J. C. B.

OUTDOOR CULTURE OF PEACHES.

WHY it should be so I cannot tell satisfactorily, but there is no better example of Peach culture in the open to be seen anywhere south, so far as I know of, than at Ditton Park, close by Datchet, and not far from Windsor, where Mr. John Lindsay, formerly of Exton Park, Northampton, continues to treat the wall trees in the same admirable way his father did for a period of nearly thirty-five years. I have seen the trees at Ditton Park every season for the past seven or eight years, and have never seen better. They are still good this year and fruiting finely; indeed, the only exception is the late and not very meritorious Salway, fruit of which, let it be ever so ripe, is not of much value even then. I do not know that Ditton Park is better favoured in the matter of soil than are many other gardens. It is rather light, but seems to owe that texture very much to the wealth of leaf soil which has been applied to it from time to time. The soil of the Thames valley is naturally good, but strong. Ditton Gardens are almost exactly opposite to those of Frogmore, and perhaps just a little further from the river on the Bucks side. Still, there is little or no difference in the elevation, for a dead level runs throughout the valley. The excellence of the wall trees—for of stone fruits, Apricots, Peaches, Nectarines, and Plums are all largely grown on the some 400 yards run of garden walls—if due neither to special advantages in the matter of soil nor of elevation, may be due to surroundings, as the gardens are much enclosed, though at respectable distances, by high trees. Still, even such conditions exist elsewhere, and are not always found favourable to the production of a dry atmosphere, especially in the spring when the trees are in bloom. When it is, therefore, found that somehow Ditton seems to enjoy no special advantages, and yet Peaches do so well, the trees enduring many years, and filling up the walls in a remarkable way, it seems needful to go further and inquire whether treatment has anything to do with the successful results obtained. I do not know that the varieties grown differ appreciably from what are grown elsewhere generally. They comprise Early Louise, Prince of Wales, Princess of Wales, Violette Hâtive, Grosse Mignonne, Noblesse, Lord Palmerston, Walburton Late Admirable, and Salway, and of Nectarines, Lord Napier, Elruge, and Violette Hâtive. With the exception of the Salway, all of these are carrying fine crops of fruit, even in a season when Peaches out of doors seem to be a marked failure, and they have cropped almost regularly in preceding years. The Ditton walls are from 9 feet to 10 feet high, and the trees furnish them fully right to the top. In no case is there made that very large coarse growth too often seen on Peach and Nectarine trees, the product of gross feeding. There is plenty of wood, and it is somewhat thickly laid in, so that at this time of the year many of the trees have such liberal leafage that there is not an inch of uncovered space of wall to be seen amidst any good tree. The late Mr. Lindsay, who laid by his excellent culture the foundation of all this good result, strongly favoured the draining of roots by putting in some 4 inches or so of rubble in the bottoms of the holes and covering that with rough turf. He preferred fresh loam to using gross mixtures, adding chiefly manure from old spent hot-beds. Naturally a light soil, it was also found desirable to tread firmly about the roots after the trees had fairly well settled down. Mulchings some 4 feet in width were always put round the base of the walls, but especially on the south borders. So far as possible water was freely given, but at Ditton there are none of those favoured arrangements to be found in some well-appointed gardens; therefore all water had to be carried in cans. During the hot dry summer of 1887 very much additional labour was cast upon the garden staff in watering trees liberally which were laden with fruit, but the labour was well repaid in the capital resulting

samples. To the considerable drainage, and may be also to the natural porosity of the soil, is perhaps due the fact that both Apricots and Peaches live to a great old age; indeed some of the former seem to be, or perhaps may be said to have been, patriarchs amongst wall trees. Circumstances have not favoured the granting of the trees in the spring much protection. There never have been those elaborate screens on rollers, and other modern appliances quite unknown to Peach growers of the olden time. Some Fir boughs or makeshift screens may be used, but, on the whole, the trees when in bloom have had to take their chance, and exceedingly well have they stood. It is very possible that the weakening the trees and bloom receive through elaborate protection in the spring does as much harm as results from full and free exposure. During the past spring there was no pressing need for screens, but the fact that the Ditton trees have almost invariably carried good crops shows that the bloom has set as well in difficult springs as during favourable ones. On the whole, we have few better examples of what may be done outdoors with Peaches than may be seen at Ditton Park. A. D.

A barren Fig tree.—Two years ago I planted a Fig tree at the end of my greenhouse. It has made vigorous growth and looks healthy, but it has never borne any fruit. Can you give a reason for this?—D. H.

Unless this vigorous healthy Fig was of good size when planted two years ago so far you have but little cause for complaint. Figs, you must understand, are peculiar in their likes and dislikes, and yours seems to have food which it likes, hence most likely its strong infertile condition. Does it get full sun, plenty of heat and air, and is it well drained? If not, lift bodily when the leaves are ready to fall, shorten all the strongest roots, and replant in a well-drained limited area. A poor calcareous loam, not too light, two-thirds, and old lime rubble one-third, thoroughly mixed, will make a suitable compost. Make the border 18 inches deep, resting on a well-drained concreted bottom, and not more than 9 feet super at the outset. Relay the roots near the surface, give one watering to settle the soil about them, finish off, and keep dry until February. Resume watering when the buds commence swelling. Train the main shoots 1 foot apart and shorten others not wanted, to induce the formation of short spur-like pieces, which will show fruit freely. A greenhouse Fig should have a poor larder, but plenty of water in summer, an abundance of sunlight and air to ripen the wood and give flavour to the fruit, and complete rest through the winter. Correspondents when writing for advice surely might go more into detail, as it is simply absurd to suppose that an expert can render help when facts patent to any schoolboy are withheld from him.—W. C.

Summer pruning fruit trees.—The opinions of cultivators have been conflicting on this point, and likely to remain so. When one finds any system answer his purpose, and the practice meets the requirements of the case in every possible form, it is best to let well alone. On the other hand, when individuals ask advice in a matter such as the manipulation of fruit tree growth, I take care to learn what condition their trees are in, the space allotted for them to expand, and what attention they are likely to receive in time to come. With ordinary tree management, however, I believe in having due reciprocity between root and branch, and after a lifetime's experience in doing the greater proportion of manipulation when trees are active during summer, I adhere to the practice, because it seems reasonable, and success has always attended my efforts. When the trees are clothed with fine foliage of the desirable texture and colour, Plums (on walls) loaded with fruit, the wood brown and hard for service next season, Peaches (under glass) in the same condition, and Cherries bearing freely every year, it would be difficult to persuade me to follow any other course of management. The thinning and stopping begin as soon as shade (to trees outside) seems to inter-

fere with the well-being of the trees—say in June—coarse out-growing shoots are removed, and others monopolising space unduly are stopped a few buds beyond the one where the “cutting back” is to take place in winter (we have little of this, however, as attention to cutting gross roots during the summer relieves it). Looking at a number of Peach trees which have been root-pruned—more or less—three consecutive seasons, and now in perfect health and vigour with wood brown, strong, and hard which will require little aid from the knife, my opinions regarding stopping, early root-pruning (when necessary) as soon as the crop is removed, whether it be June, July, or August, remain unchanged.—T., N.B.

PLUM CULTURE IN SHROPSHIRE.

As a rule, farmers are not the most intelligent and practical class of men as far as horticulture is concerned, but occasionally we meet with noteworthy exceptions, and pick up a few hints that gardeners generally ought to appreciate. Quite recently I spent a few days in Shropshire, and was much pleased with the state of various fruit trees in the garden and orchard owned by the friend with whom I stayed. Plums were especially good, and I found on making inquiries that nearly the whole of them were raised from seed. A few, and as it happened the least healthy, trees were evidently worked, the suckers thrown up from these proving conclusively that the mussel stock had been used. The favourite variety is the old Green Gage, this succeeding admirably either as a standard or dwarf bushy tree, rarely, in fact, failing to bear well. The Pershore is even more productive, the fruit, though realising lower prices in the market, being yet excellent for making into jam. Gisborne's, an improvement on the latter, is not as yet much grown in Shropshire, but it will be when better known. Another favourite is the yellow Magnum Bonum, this also cropping heavily and finding a ready market. The Victoria everybody grows, but very few comparatively are aware what a good variety the Nectarine Plum proves under ordinarily good cultivation. My friend has a good standard tree bearing a heavy crop of fine fruit, and he speaks very highly of the quality. Against a wall it would ripen early in August, but this season it will be near the end of the month before the fruit on the standard tree will be fit to eat. Damsons are largely grown in Shropshire, the greater portion of the trees being distributed along the hedgerows of gardens, orchards, and small holdings. There is always a good demand for the fruit, it being purchased largely by dye manufacturers, as well as being sent by local agents to the principal northern towns.

In very many instances the trees are self-sown, that is to say, originated from stones that were either accidentally trod or dug into the ground. Hundreds of these seedlings come up after a good fruit year only to be hoed off or dug into the ground again, it being found the wisest course to depend solely upon plants obtained by sowing the seed, or rather burying the stones 3 inches below the surface in the autumn, the plants thus obtained invariably coming true to name. Quite strong plants result during the first year from the kernel, and these may be transplanted if need be when in full leaf. Scarcely any pruning is resorted to, as the trees naturally branch freely and soon commence bearing. I have seen several bushy trees of Green Gage said to be only “four years from the stone,” and certainly not more than five years old carrying several dozen fine fruit, and those about eight years old were large, of good form and most profitable. If standards are required rather more time is taken up in forming a tree, but if a strong leader is duly staked up and allowed to branch naturally there is no necessity to trim away the lower branches. In time they are overshadowed by the head of the tree, but it is unwise to remove them so long as they are productive. These side branches are really aids to progress, or, in other words, they assist both in swelling the stems and also paying the rent. These seedling trees long retain their healthy, productive habit, and contrast most favourably with the stunted worked trees and

which are most addicted to gumming. It may be urged that Shropshire, in common with Worcester, Hereford, and other adjoining counties, is naturally well adapted to Plum culture, and the somewhat free working shallow soil resting on gravel, this being what I found, certainly does favour a productive rather than a too luxuriant growth. Whether or not seedlings would succeed best on our heavier Somerset soils remains to be proved; but judging from the excellent health and free growth of a seedling Nectarine tree, I have no doubt we shall eventually adopt the system of raising or buying own-root trees (if they can be had) not only of Plums, but any other fruit tree that may be required.

W. IGGULDEN.

WORK IN FRUIT HOUSES.

THE ORCHARD HOUSE.

FORTUNATE is the owner of a good houseful of pot Peaches and Nectarines, late Plums and choice Pears, for they will yield an invaluable supply now fruit is so scarce in the open air. The early varieties, as a matter of course, will be over, but the standard midseason sorts will be in and late ones swelling freely. Their management until the house is cleared will include abundant ventilation, syringing on fine mornings where pure soft water can be used without wetting the fruit, and carefully watering those nearly ripe with plain water, the late ones still swelling with clear diluted liquid. Early Pears and Plums, like the early Peaches, must have pure water, and late ones slight stimulants, both liquid and solid, in the form of top dressing as often as the pots ring dry or the mulching is washed away. If well cropped, the trees will now be making very little growth, but otherwise all laterals and sub-laterals must be kept closely pinched to let in sunlight and fresh air, also to fill up the flower buds, which should be ripe by the end of September. As so many of the best Peaches and Nectarines ripen so closely together, not unfrequently resulting in a glut, time should always be taken by the forelock in gathering, as fruit picked under rather than over-ripe not only is better flavoured when taken for use, but it keeps much longer when placed in a temperate, airy fruit-room to rest until wanted. By these remarks I do not mean to convey the impression that the fruit must be quite hard, as this condition applies only to Peaches intended for market, but slightly firm at the stalk; each fruit should be taken before there is any danger of dropping. When the fruit approaches ripeness it cannot be too carefully handled, as the slightest pressure with the fingers produces bruises, when fermentation sets in and the sprightly flavour is destroyed. If large sound Peaches are to be kept or packed, they should be detached with a pair of Grape scissors, laid on squares of tissue paper in flat padded boxes or baskets, conveyed to the store room and there left until they are wanted. A great number of first-rate growers do not pay half enough careful attention to gathering and packing, but place two or three layers of fruit pell-mell in the box or basket and send them away to undergo further rough treatment. In packing, after bruising by their own specific weight, they continue the mischief by going to the opposite extreme, placing the fruit so lightly and the material so loosely that movement takes place, when the packing works to the bottom or one end of the box and the fruit to the other in the course of transit. Some use cotton wool, which becomes damp and hard, and a few cling to bran, the very worst material that can be used, for, independently of its great weight and cost, it shrinks and consolidates, when up go the Peaches, rolling against each other and trying conclusions with the lid. All fruit growers cannot obtain good Moss, but those who can should give it a trial, as it is cheap, soft, light, and elastic. We drag ours out of the grassy banks with iron rakes, beat it well with sticks when nearly dry, tear it with the fingers when quite dry, and put it away for future use. The boxes for Peaches, 4 inches in depth, 14 inches in width, and 24 inches in length, receive a fairly beaten padding of this Moss, then with plenty of the material lying on the right hand, the Peaches, previously folded in tissue paper, are taken one by one

in the left and firmly placed in a nest of soft Moss. A good layer is then placed over the fruit, the lid is pressed down, fastened with a small nail at each end, and if well done, this box, containing twenty-four to thirty-two Peaches, so far as the packing is concerned, will travel safely to New York. A little practice, of course, is necessary, as each Peach must have at least half an inch of Moss dividing it from its neighbour and from the side of the box, and this packing in every part must be uniformly firm and solid. For Nectarines we use boxes 4 inches in depth, but the same width and length, for the convenience of cording two or three together. For fine Figs the Peach boxes answer admirably, as each fruit, rolled in a soft, dry vine leaf, then in tissue paper, is packed, stalk downwards, half an inch being allowed for a layer of Moss, which rises a little above the sides, before the lid is pressed into position. Those who cannot secure good elastic Moss will find extra soft paper shavings a good substitute, especially if they can prevail upon the consignee to return them, as frequent use softens and improves their quality. The newly-introduced wood wool also may be tried; but until Mr. George, the vendor, can produce a non-resinous material it will not come into general favour.

MELONS.

Late plants must now be hastened with all possible speed by closing about 3 p.m. with sun-heat and more or less atmospheric moisture, according to the state of the fruit. If still swelling, the surface of the bed and the floors may be well syringed with tepid water at closing time, but on no account must the foliage or stems be touched, as wetting about the collars now nights are longer and colder is almost sure to end in canker. This early closing will greatly economise fire-heat, but the time has now arrived for warming the pipes, first, to maintain a proper degree of heat with night air; and second, to prevent an accumulation of stagnant moisture in the lower part of the house. Watering, again, will require equally careful attention, and here the advantage of having late plants in pots will be apparent, as all the feeding roots are close to the sides or in the crocks, a position favourable to watering without moistening the collars. A little warm liquid or a pinch of guano may be put into the water until the fruit has attained full size and is netting freely; but of two evils, it is better to underfeed with liquid than to force beyond the normal size, especially at this late period when medium-sized Melons with deep flesh and small cavities keep sound longest and carry the best flavour.

Plants upon which the fruit is fully developed and approaching the ripening stage must not be allowed to flag, same time the supply of the purest tepid water must be limited, otherwise the finest Melons may crack and all will be watery and deficient in flavour. Another important matter must not be overlooked, and that is the bottom-heat. The soundest and healthiest plants will ripen fruit in a very low, dry bottom-heat, but save at setting time there is no period when a sharp bottom-heat is of more advantage than at the finish. Out of all the best sorts of Melons grown, I question if more than 10 per cent. in point of flavour can be relied upon, and so long as this reversing what actually takes place in their natural habitat goes on, Englishmen will be noted for unsatisfactory Melons. If we go no further than the neighbourhood of Paris we find Melon plants put out in the open air when the earth temperature is comparatively low; but what follows? The bottom-heat gradually increases, until by the time the fruit is ripe it is not only much higher, but a great deal drier, conditions which make the majority of an inferior kind of Melon refreshing and palatable, whilst many of stove fruits are decidedly objectionable. Where fleeting bottom heat from fermenting materials, as in mismanaged frames, is kept at high pressure through the early stages, and allowed to decline in autumn, the foliage often ripens before the fruit, and the same thing happens in hot-water pits where a little fuel at the right time is withheld; hence the great advantage of plunging the pots or forcing the

hills immediately above a bottom pipe, and turning on a gentle, but steady circulation when the Melons have nearly completed their swelling.

Frame Melons will now be nearly over, but where fruit still remains unripe the bottom heat of the bed should be tested, when being found too low the remedy must be sought in a thorough renovation of the linings. Hot water has spoiled the majority of modern gardeners, certainly for frame culture, and I have nothing to say against their good fortune, but the few, the small minority, who still have to grow Melons under the cumbrous process or go without them should look back to the days of their forefathers; those plodding men grew a higher percentage of first-class fruit than we do, and how did they manage it? Why, simply by renovating their linings as regularly as we clean up our stoke-holes; by very early closing with sun-heat and heavy matting before nightfall. They had good Melons, also a plentiful supply of mellow spit manure to fall back upon.

CUCUMBERS.

With autumn close upon us old Cucumbers and exhausted Melons should be cleared out with as little delay as possible, and when the different compartments are clear they must be thoroughly cleansed before they are re-occupied. Where heavy cropping, which means a short life and a profitable one, is practised, stout, clean, healthy, maiden plants should always be kept on hand, but at no time more particularly than in autumn. These, as the pits are clean and in perfect condition, should be put out in pots or upon hills, and pushed forward with a bottom heat of 80° which will allow for liberal ventilation. If fruit be wanted quickly they may be planted from 2 feet to 3 feet apart, stopped when they have travelled two-thirds of the trellis, and pinched at the first leaf formed by each lateral. The second set of laterals will show fruit, but considering their youth they must be cropped lightly. If, on the other hand, there is no hurry about the fruit, 4 feet apart will be quite close enough, and the laterals may be allowed a little more latitude; not much, however, as unchecked growth soon leads to grossness, and this is by no means desirable on the face of a long winter. The compost for Cucumbers at this season should be somewhat lighter and more porous than that recommended for summer culture. It should, nevertheless, be sound and quite free from animal manure, as this encourages worms and becomes sour at a most trying and critical period. If the plants are weak they can be fed with clear diluted liquid, or they may be mulched, but the best stimulant for winter growth is genuine bone dust. Two sowings of Telegraph, or some other good winter variety, should be made in September, the first early in the month, the second not later than the 20th. Cuttings also of extra good strains may be put into small pots, care being taken that the parents are free from insects and the fibry turf out of which the finest particles have been beaten is thoroughly warm when they are inserted. Stout, short-jointed points taken with or without a heel, plunged before they flag, and kept covered with a bell-glass, strike in a few days in a bottom heat of 90°. Many growers give preference to cutting plants, asserting as their reason the fact that the stems are hard, woody, and not given to canker.

POT STRAWBERRIES.

Now growing very freely, must have plenty of room for the full development of their foliage, the pots at the same time standing just close enough to shade each other. If the pots are small and well filled with roots, a little weak liquid two or three times a week will help the plants until the crowns are properly formed and the oldest leaves show signs of ripening. From this time pure water will suffice, but on no account, even late in the autumn, must they feel the want of this element. Where a great number of plants are grown and the hose is at hand, the wet and dry balls too often come in for an equal share of water towards nightfall, but this rough and ready method of getting over the work can hardly be called good watering. An occasional shower of soft water no doubt is beneficial after a hot day, but this re-

fresher should always follow the most careful hand watering. Plants transferred from 3-inch pots into 6-inch pots and now beginning to mat their roots, like the preceding batch, may have a soaking of weak liquid occasionally, but of two evils it is better to trust to the rich compost than to force a gross habit late in the season. Keep all plants free from weeds and runners; also move the pots frequently to prevent them from rooting through, and soak the stations with lime water if worms are troublesome. Forced plants of early varieties put out rather close together with the view to an autumn crop will now require careful attention. The fruit undoubtedly sets best when the plants are fully exposed to the weather, but once the berries begin to swell they should be thinned, tied, or propped up, and protected from birds, snails, and heavy rainfall. Good nets answer well in ordinary seasons, but those who make a speciality of autumn fruit should provide a temporary covering of glass lights, not only to increase the size, but also to shelter the ripening fruit when the weather is unpropitious.

WORK AMONGST HARDY FRUITS.

All pruning, pinching, and training having been brought to a close, the ingathering of crops, protection from birds and wasps, and the ripening of the wood are matters which must have attention. The gathering of ordinary fruit in many places is not a heavy business, and what little there is seems marked out for consumption by winged enemies. Blackbirds, now so numerous and wily, can be circumvented by the use of stout nets, but nothing short of hexagon netting can be relied upon for keeping out the wasps, perhaps never more plentiful and active. Peaches, when these insects are prevalent, we always enclose, but the fruit being late and the wood far from ripe, this extra light material must not be used so long as the pests maintain their good behaviour. The heavy rainfall in this locality having penetrated south and west borders, wall trees generally are growing rather freely; hence the importance of keeping the wood thin and as close to the brickwork as it is possible to train it. The old-fashioned method of nailing in has been quite recently condemned, and the French system of tying to horizontal wires recommended; but unless the situation is extra good, having thoroughly tested the two, I can safely assert that the best ripened shoots are secured by careful nailing. To all practical growers who have made the culture of the Peach on open walls their study, the advantages are obvious enough, as they know quite well that shoots hugging the wall receive more of the absorbed and reflected heat than others with a current of air circulating behind the trellis. In hot, high and dry gardens by all means tie, but in others less favourably situated, where the ripening of the wood is a matter of touch and go, close nailing may make all the difference between success and failure.

It is yet rather early to commence root-lifting, an operation sadly too much neglected in under-handed gardens. The time, however, will soon arrive, and mindful of the fact that some trees are barren, the growth of these may safely be checked by a complete clearance of the mulching to let in warmth and air, and the opening of a semi-circular trench just beyond the radius of the roots quite down to the drainage. Others carrying crops of fruit must be left undisturbed until they are clear, but once the last Peach is gathered they may be treated in the same way, especially where the roots have the run of rich vegetable borders. I open a trench round all my fruiting trees, and shorten the roots to within 5 inches or 6 inches of their start annually. The trench, the width of the blade of a spade, is then filled in with pure calcareous loam to which old lime rubble is added, as Peaches must have plenty of old, not caustic lime, and much as outdoor culture is pooh-poohed, my permanent trees have only produced two thin crops in thirty years.

Planting.—Those who contemplate planting may now set about the preparation of the stations for

the young trees by taking out the old soil to the proper depth, by concreting, if necessary, and the introduction of 6 inches to 9 inches of rubble drainage. The compost, the materials being at hand, also may be prepared and wheeled in when warm and dry, if only to economise time when border work is in full operation. Another very important matter must not be overlooked, and this is the selection of the trees, especially if they are to be obtained direct from the nursery. Stocks, owing to losses last spring, are not over-large; therefore those who would be well served should lose no time in choosing and marking all they require before the nurserymen commence lifting. First come, first served, is not the only advantage, as nurserymen, like other people, like to push on their work, and knowing that all their stock sooner or later will go, the baneful practice of lifting and laying in by giving early orders may be avoided. The strongest and largest trees are not the best, as they rarely ripen their wood well, and although they may struggle through a moderately sharp winter, soft sappy shoots form but a poor foundation for building upon. W. C.

A Perthshire fruit grower in New Zealand.—The *Auckland Weekly News* of June 1, 1889, gives a long description of the orchards at Matakana, the property of Mr. E. E. Matthew. The largest of the trees are the survivors of a number originally imported from Scotland thirty years ago, and are principally Pears. The orchards are divided into four parts, and extend to 9 acres. A tree of the Forelle Pear is over 30 feet high, with an equal spread of branches, and produced last season 1 ton or 2240 pounds of marketable fruit. Mr. Matthew, it is stated, has raised two perfectly blight-proof Apples, which are the parents of his nursery stock. This season's produce is estimated at 60,000 pounds, principally of Pears.

Late ripening of fruit.—Fruit of all kinds is most puzzling this year, as not only was the set bad, although the show of bloom was abundant and the weather apparently favourable, but what remained has never swollen kindly. Most of it is small and misshapen, and it now looks as if much that is left will not ripen. Apricots have been fairly good with us, but Peaches are hard as yet, and up to the present (August 24) I have not gathered any outdoors, except from trees of Alexander and Rivers' Early, the first named of which came in during the third week of July, and the latter about a fortnight after. Plums, too, are very late, and the only fine ones we have are some Kirke's on trees trained on a south-east wall, while all those on a westerly aspect are small and malformed. Green Gages are only just beginning to ripen, and we have not picked a dish yet, and Jefferson's looks as if the fruit will not be ready for another month. Coe's Golden Drop is quite green and hard, and unless we get a fine warm autumn I doubt if they will ripen at all. Jargonelle Pears on south-east wall have been good, but Williams' Bon Chrétien are not ready yet, although I ventured to pick a few of the most forward looking to-day (August 24). The late kinds must, I think, be almost worthless, and yet sun and a warm autumn may do much for them by way of finishing up. Apples are, like other fruit, small and irregular in shape and many have fallen, but trees look well, and the rains will help to keep the foliage fresh and clean, and assist in swelling the buds.—J. SHEPPARD.

Apple Blenheim Orange.—It has often been stated that this Apple is not a suitable sort for growing in the form of bushes or pyramids, and I must confess that I entertained the same opinion a few years ago. However, I thought I would put the matter to a test, and with that end in view I planted three pyramid and three cordon trees five years ago. The second year after they were planted they all bore a few fruits, and during the five years the trees have only once partially failed. This season they are all bearing a very good crop of fine, perfectly-formed fruit. The number is not large, but quite as many as one could expect, considering the space the trees cover. Even the triple cordons are carrying a good many Apples. I mention this

to show that it is possible to get a few nice fruits from restricted trees of this fine Apple. I do not advise the planting of this sort in any form of tree that must be restricted in its growth in a well-sheltered orchard or garden in which standards on stems 4 feet high can be grown. I should no longer, however, hesitate to advise the planting of bushes or cordons if there is not room for standards. I have been much impressed with the appearance of the specimens of this Apple that have been grown on cordon trees; they are large in size and more highly coloured than those produced on any other form of tree. If anyone wants to grow the Blenheim Orange in quantity he must first select a deep and fairly good soil and a well-sheltered situation, and thus grown there is no other sort that will pay better. Shelter is a great point in the cultivation of the Blenheim Orange, as the following will show. In a market garden in this neighbourhood there are four or five trees of this sort. This garden is well enclosed by high trees on the north and east sides, and by buildings on the other. In this case the Blenheim Orange bears as regular, and in some seasons better crops than any other sort. At the present time I estimate that two of the trees will produce not less than 24 bushels of first-class Apples. The trees, of course, are large and they have been well cared for, and many of the branches nearly sweep the ground with their weight of fruit. I am acquainted with many more trees of the same sort growing in different gardens and orchards that are not so well sheltered, but they do not bear so regular or such good crops of fine clear fruit as the trees I have referred to. It is very clear that if we want to grow good crops of this Apple on standard trees we must provide the needful shelter.—J. C. C.

GARDEN FLORA.

PLATE 716.

POLYANTHUS PRIMROSE COLLEGE GARDEN SEEDLING.*

THE coloured Polyanthus-Primroses of our gardens are analogous to the self-yellow Oxlips of the fields, and no doubt they are likewise of hybrid origin, and more vigorous and easily managed than are their foster-parents, the coloured forms of *Primula vulgaris*, or those of the common Cowslip. The plant we now figure is a chance seedling, one of the numerous beautiful accidents almost sure to happen, sooner or later, in all gardens wherever many seedlings are reared year after year. The variety here figured is not a florist's flower by any means, since it is not only a rampant grower with a coarse truss, but it actually produces a pin-eyed flower, i.e., a flower in which the style overtops the stamens. This, from a florist's point of view, is a fatal defect, and one that has consigned many lovely Primroses to the rubbish heap or the fire. A friend of mine, who had an innate taste for beauty of form and colour, but was in the "green Gooseberry" stage so far as his knowledge of florists' flowers was concerned, was once called upon to award the prizes at a country flower show where Primroses and Polyanthus were exhibited. In the afternoon, after the public were admitted to the show, my friend noticed an elderly individual watching him rather attentively, and eventually the old florist, for such he was, approached, and in a most respectful manner inquired if my friend was really the man who had awarded the prizes in the Polyanthus class. On being answered in the affirmative, he said with some dignity and in a tone of reproachful tenderness: "Why, sir, don't you know what you've done?" "Well, I believe I selected the finest flowers,"

* Drawn for THE GARDEN by H. G. Moon, May 4, 1889, from flowers sent by F. W. Burbidge, Dublin.



PRIMROSE "COLLEGE GARDEN SEEDLING"

hazarded my friend. "Not a bit of it," replied the florist. "Why, sir, you've actually given the first prize to a lot of rough pin-eyed ones; that's what you've done, sir!" "And, then," said my friend, "he looked as if he firmly expected me to fall dead at his feet, and, turning on his heel, he left me with supreme contempt."

This to some extent illustrates the faith in certain artificial standards as set up by the old pip-men, but now-a-days all bright and beautiful Polyanthuses are grown and admired irrespective of microscopic details of this kind. Of late years there has been quite a new taste developed for Polyanthuses of the white and yellow Oxlip races, which as seen at their best are of wonderful beauty. For groups and also for arranging in rich low nooks in the garden, these Oxlips and the richer self-coloured kinds, of which our illustration is an example, are the most effective. They are readily raised in quantity from seeds sown as soon as they ripen in boxes of light rich earth, or in prepared open-air beds or borders. The old plan of rigidly weeding out the pin-eyed variations did much to deter the improved development of these flowers, since, as pointed out by Darwin, the pin-eyed flowers as fertilised with pollen from the thrum-eyed individuals yield the finest and best progeny. As a rule the seedlings are at their best in their second season of flowering, but selected varieties may be divided, and if planted deeply in deep rich soil they flower well. A careful selection of the best seedlings year by year is necessary. Wherever this is conscientiously done the results are in all ways charming. April and May are months which bring visions of beauty to good growers of these flowers.

Ireland is of course the happiest home for the Primrose family, its mild winters and the cool moist summer climate being alike most suitable to its fullest development of leafage and blossoming. The English nurserymen, as is well known, draw most of their stocks of the double forms from the Emerald Isle, and yet we have never seen in Ireland such open woods and shaws full of the Primrose pale, nor such luxuriant fields of Cowslips in Ireland as there are in Southern England. But I know an old Wicklow garden in which fifteen varieties of the old double Primroses and several double Polyanthuses luxuriate, forming great Lettuce-like leaves, rosette-like, their interstices closely packed with masses of the most exquisite flowers. Not even in Normandy have I seen such magnificent specimens, albeit that country is the home of the double Primrose, as of the wild Daffodil and the Carnation. But you may get visions of Polyanthus-Primrose beauty in England also. The Oxlips at Munstead in the waning gold of an evening early in May are a perfect dream of delight; so also are the giant coloured Polyanthuses under the nut bushes at Calcot, near Reading, and the seedlings luxuriantly nestling in nooks and massed among the trees in the wood garden at Wisley "flash upon the inward eye" as a pleasing memory. Even on the cold Leicestershire clay I remember a cottage garden every bed in which was margined with the old gold-flecked, or tortoise-shell, double Polyanthus which one so rarely can see to-day.

The main points of excellence about the variety illustrated are its free and luxuriant growth and its clear and decided colouring, qualities to be appreciated by those who strive for bold and telling effects in their gardens. As associated with some of the lovely white-flowered Oxlip-Polyanthuses a delightful contrast is gained.

As a seed parent it promises to be of unusual excellence, but, as may be gathered from our illustration, it is well worthy of cultivation for its own vigour of growth and lavish colouring.

F. W. BURIDGE.

THE FRUIT CROPS.

EASTERN.

Cossey Park, Norwich.—Wall fruit this year very thin; Pears and Cherries about the best. Very few Apples; the thinnest crop I have seen in this part. Strawberries were a good crop; other fruits very fair.—A. ROCHE.

Woolverstone Park, Ipswich.—The fruit crops here and in this part of the country, so far as I have seen, are in a very unsatisfactory state, as Apples, Pears, Peaches, and Nectarines have fallen wholesale, and those that remain on the trees do not look like swelling off in the way they should. The fruit seems stunted or checked through contracted skin, which in my opinion was brought about by the very sudden transitions from heat to cold, and *vice versa*, that took place soon after the setting.—J. SHEPPARD.

Shrubland Park, Ipswich.—The fruit crops this year are partial. Apples are a failure. In places some trees have a good crop, other trees beside them being a blank. Pears on standards are very scarce; on walls they are better. Both Apples and Pears suffered much from the maggot, but the trees are now recovering. Apricots and Plums are growing well, but have very few fruit on them. Cherries have been good and clean, not troubled with black fly, as in some seasons; Morellos are plentiful and fine. Bush fruits under average. Strawberries were good, especially British Queen, which always does well here.—T. BLAIR.

Wellingore, Grantham.—Apples, this year are far below the average; Keswick Codlin amongst the early and Small's Admirable amongst the mid-winter kinds are full crops, but with these two exceptions Apples are very poor. Pears also are much below the average, tree after tree being fruitless. Plums are an average crop, but I think they will be only of second-rate quality. Cherries have failed, and the trees appear to be in bad health. I consider the heavy fogs we had when these were in flower did them great harm, causing the bloom to damp off. Nuts have failed, this not being a good district for them. Strawberries are abundant, the best I have seen for the past fifteen years. Raspberries have been good; the first fruits were rather small from drought. Gooseberries are a fair average crop, and free from caterpillar. Currants are over average and good.—THOMAS HARE.

Hardwicke Hall, Bury St. Edmunds.—Nil, is the short and all too brief and easy answer this season, with the one exception of Peaches and Nectarines among superior fruits, and Currants, Gooseberries, Raspberries, and Strawberries among others. The Apple trees had a magnificent show of bloom, which vanished suddenly under the forcing of semi-tropical weather in May and left hardly a fruit behind. Trees of all sizes, shapes, and in all sorts of places fared alike, excepting a few special cordons that have a full crop. This is the general state of things around us, though fortunately some trees and orchards here and there have a partial or full crop. Pears are just a little better than Apples. The promise was not so flattering, and hence the failure is not quite so glaringly out of character with it. Green Gages are about as great a blank as Apples, and other Plums, especially the finer ones, are almost equally scarce. Cherries, too, were smothered with bloom, set badly, and dropped heavily during their early stages. Some Cherry trees also blossomed but slightly and others again bloomed and set fairly well, though on the whole the crop has proved poor. Apricots are a more complete failure than Apples, whole branches and trees perishing as well as the crop. It is hardly, however, correct to write of the Apricot

crop perishing; it was never in the running here this season, for the trees did not blossom. One of thy most striking contrasts in the early spring was the bloomless state of the Apricots and the brilliant blossoming of Peaches and Nectarines side by side on the same walls, and everywhere exposed to exactly the same conditions of soil, air, and culture. The Peaches and Nectarines set freely and are doing well; whereas the few stray blossoms on the Apricots dropped or perished, as might indeed have been predicted from the first from their washy colour and weakly condition. The frost was not to blame for our failures, for we had none of sufficient severity during the blooming stages of our trees. I have but two guesses at truth to offer. These are the immature wood, the bad legacy of the sunless summer of 1888, and the outburst of tropical weather in the middle of May, 1889.—D. T. FISH.

Ickworth Gardens, Bury St. Edmunds.—In reply to your inquiries respecting the fruit crop in this neighbourhood, I beg to state that in most places the crop is very much under the average. There are, however, a few exceptions where there are good crops of Apples and Pears. With me in these gardens there is but a very poor crop of these fruits, many of the trees having none at all. I have a fair sprinkling of Plums on the walls and some of the standards, especially Denyer's Victoria and the Crittenden Damson, which I find a most valuable sort, as it commences to fruit in a very young state and never fails to bear well every year. Strawberries, Raspberries, and Currants of all kinds are an excellent crop; also Gooseberries. There are no Apricots, and the trees have died away this season more than usual.—ROBERT SQUIBBES.

Drinkstone Park, Bury St. Edmunds.—Apple trees bloomed equally well, but the crop is most erratic, and will barely average half, some local second-rate varieties bearing heavy crops. Apricots almost nil. Cherries—Fair crops of dessert kinds; Morellos good. Pear crop very light and erratic, many trees quite bare; and where fertile, fruit very uneven and ill-shaped. Plums a very short crop indeed. Figs a fair crop. Walnuts very slight crop; wood damaged by autumn frosts. Cob Nuts and Filberts few grown, and these with no particular pruning nor cultivation. Strawberries were most abundant, large, clean, and well flavoured. Bush fruits, where the buds escaped the birds in winter and spring, are good. Black Currants—Fair crops of clean, well finished fruit. Red and White Currants good and very clean. Gooseberries very heavy crops. Raspberries very good.—G. PALMER.

NORTHERN.

Cholmondeley Castle, Malpas.—The fruit crop here is fairly satisfactory. Strawberries have been abundant, and as many as 40 tons have been sent to Liverpool and Manchester in one day from Holt and Farndon, which are only comparatively small gardens. Raspberries rather late, but a fair crop. Plums under average. Apricots fair. Morellos medium; Apples and Pears considerably below the average.—C. FLACK.

Lathom House, Ormskirk, Lancashire.—The fruit crops on the whole are much below the average this season. Apples are only a moderate crop, but the quality promises to be good. Pears also are much below the average, and of only fair quality. Plums a poor crop, and Peaches on the outside wall are a failure this year, which is not at all surprising, considering the cold, wet, sunless season we experienced last year. Strawberries were a good crop and the fruit fine, but they were soon over owing to the dry weather. The crops of small fruits, such as Currants, Gooseberries, and Morello Cherries, have been fine and of good quality.—J. HATHAWAY.

Allerton Priory Gardens, Woolton, Liverpool.—Apples here are under the average. The trees promised well during the early stages, but the fruit set badly and fell in great numbers during the dry weather. The trees, too, became badly infested with caterpillars and spider, which have destroyed a deal of foliage. Some of the best

are King of the Pippins, Hawthornden, Blenheim Orange, Cellini, and Cox's Orange. Pears are very thin, the best being Beurré d'Amanlis, Louise Bonne of Jersey and Durondeau. Plums and Damsons almost a failure. Bush fruits are plentiful, while Raspberries and Strawberries have done exceedingly well.—J. J. CRAVEN.

Brantingham Thorpe, Brough, East Yorkshire.—This spring we had an abundant show of bloom, but our prospects were soon blighted. In this district we had a heavy thunder storm accompanied with large hailstones, which destroyed the bloom of Apples and Pears, and cut the fruit off Gooseberries and Currants. Peaches, Nectarines, and Apricots suffered considerably, but Plums and Cherries were not much injured. Plums are the best crop of the season, Raspberries and Strawberries being a fair average.—ROBERT C. KINGSTON.

Netherby Gardens, Longtown, Carlisle.—All bush fruits are a light crop, the buds having been thinned by birds in early spring. The crops of Strawberries and Raspberries good. Apples a failure, as also standard Plums. Victoria Plums on walls good. Gage Plums very thin. Peaches not much grown, Royal George being much the best and a sure cropper. Victoria is the best amongst the Nectarines. Fruit in this district under the average, on the whole, some having fair crops, while others again have little or none, last season being most unfavourable to the ripening of any wood.—JOHN DAVIDSON.

Aldin Grange, Durham.—With us this season small fruits are very good crops all round. Gooseberries and Raspberries with us are an abundant crop, and Strawberries particularly so, the best varieties being President and Garibaldi as main croppers and Loxford Hall Seedling for late. This variety with us makes but little foliage; consequently, unless well protected, the fine fruits are a great attraction to birds. It is somewhat remarkable that, as far as I know, in this district Sir J. Paxton is always barren. We have tried it over and over again and always with the same results. Keen's Seedling is little or no better. After trying a good many kinds here we are at present relying mainly upon Black Prince for earliest, President and Loxford Hall for dessert fruit, and Garibaldi for preserving. The last named is becoming very popular with some market growers in this district, as there is no other to be relied upon to the extent this one can be. In various soils and situations Oxonian and Frogmore Late Pine are liked by some growers in this part, but both with us were much too uncertain. Cherries in these gardens are every season a complete failure. Can any reader suggest the cause? We have applied old mortar rubbish, but with no good results. I do not think it can be want of lime in the soil; potash, too, I believe, is pretty abundant. We have always an abundant bloom, but very few indeed pass the stoning period; all the varieties are alike. Apples and Pears are with us only a poor crop, the wood having been badly ripened last year. Apricots, none.—W. JENKINS.

Knowsley Gardens, Prescott.—Apricots suffered from the bad weather of last year, but not to the same extent as Peaches and Nectarines. This year the trees bloomed sparsely, and are carrying only a light crop. Plums are better, Victoria, Rivers' Early, and Coe's Golden Drop being the best. Cherries set well, but the drought of June somewhat checked the swelling of the fruit; on the other hand, there has been no cracking, and Cherries have seldom been more satisfactory. The sorts that do best here are Early Rivers, May Duke, Governor Wood, Black Tartarian, and Morello. Other sorts are grown, but we should be as well or better off without them, provided the space they occupy was filled with the sorts just named. Early Rivers is a grand Cherry; I have not seen a fault in it yet. Pear trees blossomed freely, but much of the blossom was weakly and imperfect; consequently the crop is partial; nevertheless we are fairly well off for fruit on the whole. The best crops are seen on Comte de Lamy, Marie Louise, Souvenir du Congrès, Louise Bonne of Jersey, Beurré d'Aremberg, Colmar d'Aremberg,

Ne Plus Meuris, Zephirin Gregoire, and Nouvelle Fulvie. The last named is a hardy sort and does fairly well as a standard. Many Pears are quite useless here away from a good wall. These include Winter Nelis, Brockworth Park, Duchesse d'Angoulême, Alexandre Lambre, Josephine de Malines, Baronne de Mello, Brown Beurré, Forelle, Styrian, Beurré Bosc, Beurré Clairgeau, Beurré de Capiaumont, Beurré de Jonghe, Van Mons Léon Leclerc, Bergamote d'Esperen, and others. We have enormous crops of Apples of some sorts, while others are bare of fruit, as in the case of Pears. The following are fine: Lord Suffield, Pott's Seedling, Scotch Bridget, Boston Russet, Betty Geeson, Ribston Pippin, New England Pippin, Margil, Old Hawthornden, Beauty of Kent, Sturmer Pippin, Cox's Orange Pippin, Gravenstein, and Lewis' Incomparable. One of the best new Apples—at least it is new to me—is New Northern Greening, but why it should be called Northern Greening at all I do not know. It certainly is not much like the old Apple of that name. It is a magnificent fruit, and quite deserving of a name all to itself. Strawberries have been plentiful and good here, as in most places, and Raspberries, Gooseberries, and Currants have seldom done better.—F. HARRISON.

Alnwick Castle, Northumberland.—Apples are generally scarce, but some inferior kinds are bearing a crop. Lists of names are of little use as a guide this season. Last autumn we planted a few small trees on the Paradise of the Apple Domino, and each of them has a crop swelling freely, but I cannot speak of the quality of the fruit, not having seen it before. Among Pears, a few varieties are bearing crops, but all indicate a want of ripeness of wood last autumn, the fruit being much deformed. Apricots are bearing a crop, but some old trees are losing branches more than usual. Bush fruit very plentiful. Plums—Victoria, Prince of Wales, and Golden Gage are good. Vicomtesse Héricart de Thury, President, Sir J. Paxton, and Helene Gloëde Strawberries were all good. May Duke Cherry, as usual, good.—GEORGE HARRIS.

Croxtheth, Liverpool.—In reply to your inquiry respecting the fruit crop of this district, Strawberries have been abundant and very good. Raspberries plentiful. Currants abundant. Gooseberries fairly good crop. Cherries (Morellos) average. Plums, Damsons, and Pears under average. Apples average crop, but many falling off. Of Peaches and Nectarines we have none outside, and inside I am now planting young and newer kinds, of which, as they have not yet fruited, I am unable to speak. I hear from my gardening friends that outdoor Peaches and Nectarines are generally very scarce, principally owing to the lateness and dulness of last autumn.—B. BARHAM.

Waterdale, St. Helens, Lancashire.—Very few Peaches or Nectarines are grown in this neighbourhood either inside or out. Cooking Apples are a good crop in some gardens, but there are none in others. Dessert Apples are a very thin crop all round. Pears are a light crop, but more regular. Cherries very few, and Morellos only medium. Plums both on the walls and standards are fairly loaded. Damsons in some gardens and farms are bearing immense crops, while in others there is not one. Gooseberries and Currants of all sorts are plentiful, but small. Raspberries are heavy crops, and the flavour good, but the fruits are deficient in juice. Strawberries were very plentiful; the fruits were not large, but good in flavour. The best early for quantity and quality is Black Prince, with Sir J. Paxton, Vicomtesse Héricart de Thury, President, and British Queen to follow.

The early Potato crops are very good, both in quantity and quality, and the late crops are looking uncommonly well. Sutton's Regent is the best early; for late use, Clarke's Maincrop, which we have been using up to the middle of July sound and good, and Champions for middle season.—JAMES SMITH.

Heaton Grange, Bolton.—In answer to your questions respecting fruit crops in the gardens here, the Apple crop is a fair average. Pears

very light crops. Plums, not any grown here and very few in this district. Cherries none grown here, and very few grown for miles round. Gooseberries average crop. Currants fair average crop. Raspberries very good crop. Strawberries were a fair average, but very soon over.—GEORGE CORBETT.

Newton Hall, near Chester.—In reply to your inquiry as to the fruit crop here, I may say that all the trees are carrying an average crop, except Peaches, Apricots, and Nectarines, of which I have none on any of my trees. Gooseberries and Currants have been good. Keswick and Lord Suffield Apples have good crops. Marie Louise Pear, of which we have a very large standard, is bearing better this year than last. Damsons are heavily cropped.—R. WAKEFIELD.

Newburgh Priory, Easingwold, Yorks.—Apples fair average crop. Apricots good average crop, fine fruit. Pears rather scarce. Plums average crop. Strawberries were plentiful and good, especially James Veitch and Vicomtesse Héricart de Thury. Gooseberries, Currants, and Raspberries plentiful and very fine fruit. Cherries rather thin crop, but good.

Among vegetables Peas are very fine. We have had extra good crops of Criterion and Ne Plus Ultra. Anyone growing these two varieties for general crops would not be disappointed. The latter always gives a supply of good Peas till late in the autumn. Potatoes excellent and very good in quality both in gardens and fields. Altogether the finest season we have had for many years for crops in general.—GEORGE MORRISON.

Hanbury Hall, Droitwich.—Owing to the indifferent season of 1888 and the unfavourable circumstances for the ripening of buds, wood, &c., the fruit crop for this year is somewhat meagre. There was a good show of bloom, but buds being very weak, only a very small proportion set, and, generally speaking, the crop in this district is under average. The Apple crop is very much under average, with the exception of Lord Grosvenor and Stirling Castle, which are remarkably good. Orchards have suffered considerably from maggots. Pears on walls very good, standards under average. Apricots, Peaches, Nectarines are a failure. Figs (outside on walls) very good. Medlars an excellent crop. Strawberries, Raspberries, Currants, Gooseberries excellent crop, the fruit being very fine and clean.—WILLIAM HERNE.

Lowther Castle, Westmoreland.—Apricots are a failure. Plums on walls average crop. Standards and bush trees in open quite a failure. Cherries below average. Strawberries were an average crop, the fruit fine and of good flavour. Apples are a very thin crop indeed. Our best are Dumelow's Seedling, Tower of Glamis, Stirling Castle, Warner's King, and Keswick Codlin. The embryo fruit and young growth suffered very much from the caterpillars, these completely ridding the leaves, although the trees when in bloom promised well for a fair crop. Raspberries good average crop. Black and Red Currants are an average crop.

EARLY POTATOES are a good crop and sound, and later sorts are looking well at present. All other vegetables are doing well, and crops quite a fortnight earlier than they have been for several years past.—F. CLARKE.

Chillingham Castle, Belford, Northumberland.—Apples are not so good as expected. Some trees were covered with blossoms, but have very few fruits, and others are carrying a splendid crop. Pears, on the whole, are very poor and have not half a crop, excepting Beurré Diel, which always does well. Plums are a splendid crop. The best are Early Prolific, Green Gage, Kirke's, Nectarine, Orleans, Prince Englebert, Prince of Wales, Jefferson's and Victoria. Peaches a failure out of doors here. Apricots are carrying a fairly good crop on most trees. Cherries a light crop. Strawberries were very good, and those that have done best are Keen's Seedling, President, James Veitch, Sir Joseph Paxton, Vicomtesse Héricart de Thury, and Elton Pine. Gooseberries splendid crop of all kinds, also Red and White Currants; Black are a

light crop. Raspberries are splendid, especially Northumberland Fillbasket.

THE Pea crop is the best I have ever seen, and to Telephone I give the preference. Cauliflowers, Cabbages, Lettuces, Onions, Carrots, Beet, Spinach are all first rate. Among the Potatoes I have never got one to equal Prizetaker, a red Kidney. It is very floury.—RICHARD HENDERSON.

SCOTLAND.

Urie House, Stonehaven.—The fruit crops in this locality are on the whole good. Apples about an average. Pears and Cherries, notwithstanding the fine show of blossom in spring, are under the average. Plums, such as Victoria, are a heavy crop. Strawberries a good crop and of fine flavour. Raspberries, Gooseberries, and Red Currants are over an average crop. Black and White Currants are a fair crop. Our climate does not suit Peaches outside. The best flavoured Peaches inside with us are Royal George, Doctor Hogg, and Noblesse.—ALEXANDER REID.

Fyvie Castle, Fyvie.—Apples, some trees fair, but on the whole under average. Pears are better for being on walls, as the crops are more general. Plums are very heavy. Cherries scarcely average. Apricots are also thin. Gooseberries a good heavy crop, fully over average. Currants are also in general good fair crops. Raspberries are very heavy, as also of fine quality. Strawberries are also good, particularly the later sorts that have got the advantage of the rain. Nuts are not much grown, neither are Peaches on the open wall.

POTATOES are in general a good crop in the fields, the early sorts now in use being not so large as in general, the late dry weather being against their growing large. The tubers seem in general to be of good quality, and as yet I have not heard of a single instance of disease.—R. FARQUHAR.

Moy Hall, Inverness-shire.—Fruit prospects now, compared with those of spring, are somewhat disappointing. The continued drought of May and June told on the setting of the tender blossoms. For the two months the rainfall only registered 1.25 inches. Fruit has matured fully a month earlier than usual. Apples, Pears, and Plums are a poor crop. Among Apples, Lord Suffield, Keswick Codlin, Stirling Castle, Dutch Codlin, Hawthornden, and Irish Peach do best here. Cherries, both sweet and Morello kinds, are abundant. Strawberries are extra fine as to size, quality, and quantity. President and Vicomtesse Héricart de Thury are two sure bearers with us. Gooseberries, Black, Red, and White Currants are under the average.

THE Potato crop never looked better, not the least disease being apparent, and the plants are yielding well. For late keeping and resisting the disease we have none to equal the Champion.—D. RHIND.

Balcarras, Colinsburgh, Fife.—The Apple crop is by far the worst we have had for many years. We had a profusion of blossom, which suffered from the depredations of caterpillars and maggots. The Keswick Codlin is the worst. Our best varieties are Irish Peach, Early Julien, Lord Suffield, Devonshire Quarrenden, Cox's Pomona, Nelson's Glory, and Duchess of Oldenburg. Pears are a fair crop on walls, but very few on standards. Plums half a crop. Early Cherries very poor, but plenty of Morellos. Peaches and Apricots very thin, but not many grown outside. Bush fruits in great abundance and very fine in quality. Strawberries were above the average. On heavy soil they were the best. Early varieties were very soon over; late varieties, such as Elton Pine, being heavy and splendid fruits. The crops are about a fortnight earlier than last year.

VEGETABLES of all kinds and Potatoes an average crop, and the latter free from disease.—EDWARD TATE.

Dunkeld Gardens, N.B.—Fruit here this year is not so plentiful as usual. Peaches and Nectarines scarce. Apricots not abundant, but the fruit fine. Cherries are turning out of fine quality; in fact some of the best varieties are extra. Plums are especially plentiful. All our wall trees and

every kind are magnificent. So are most of the trees in the open. Apples are generally an inferior crop, except Pippins. Pears are not a good crop, but some sorts are good, such as Jargonelle.—P. W. FAIRGRIEVE.

Brechin Castle, Brechin.—Fruit crop a fair average. Peaches a very fair crop; little outdoor culture in this district. Plums fair generally; Victorias extra good. Apples and Pears rather thin, although trees looked well in bloom and there were no frosts. Strawberries fine crop, but early varieties had a short season. Raspberries, Gooseberries, Red, White, and Black Currants very plentiful.—WILLIAM McDOWALL.

Scone Palace, Perth.—With the exception of Peaches and Apricots on the open wall, the fruit crops in this district are upon the whole satisfactory. Strawberries, Raspberries, and other small fruits are abundant and of excellent quality. Apples on heavy, cold soils in low, damp situations are rather under an average, but in places with a good exposure and a warm loamy soil the crop is good, and if the autumn be warm and dry the quality of the fruit will be above the average. In many gardens and orchards the foliage was very much destroyed in spring and early summer with grub. Pears are rather scarce. Plums and Cherries are a good, fair crop. With the exception of a few favoured localities, Peaches do not succeed on the open wall in our climate, our autumns being, as a rule, too cold and damp, in consequence of which the wood does not become perfectly ripened.—A. MCKINNON.

Dunrobin Castle, Sutherland.—Peaches and Nectarines have been tried out of doors in Sutherland and found wanting. For several years I tried to cover a piece of south wall with such kinds as Royal George, Noblesse, Red Magdalen, and other kinds I had seen do well in the midlands of Scotland; also some of the newer kinds, such as Beatrice, Victoria, Early Rivers, and Early York. We no sooner had the trees up to fair bearing dimensions than they commenced to break up, branch by branch, from the effects of unripened wood, blister, and canker. The conclusion I came to after several years' experimenting with outdoor Peach culture in Sutherland was, that "the game was not worth the candle." As to other fruit crops, Strawberries are a fair average crop. Cherries are good. Plums under average. Apples good where exposed fully to the influence of sea breezes, but thin on standards inside the garden. Pears are under average. Gooseberries a good average crop. Currants, Black and Red, under average, the buds having been thinned a good deal by bullfinches in spring. Fruit crops of all kinds are earlier by about a fortnight than the average time of ripening, owing to the unusually hot weather we have had the last six weeks.—D. MELVILLE.

Altyre Gardens, Forres.—The fruit crops in the gardens here are on the whole above the average. Apples only are a poor crop. The trees showed plenty of flowers, but these did not set, probably owing to the bad ripening of wood last season. The following sorts, however, are a heavy crop, viz., Lord Suffield, Stirling Castle, Hawthornden, and Cellini. Apricots a heavy crop, and fruit has every appearance of being large. Plums both on walls and standards a heavy crop. Pears only an average crop, smaller sorts heaviest. Peaches rather under average; they are not grown much outside here. The following kinds do best: Royal George, Rivers' Early York, Louise, and Stirling Castle. Royal George is the best flavoured. Cherries a heavy crop. Strawberries were an exceptionally heavy crop of large and well-flavoured fruit; late sorts, owing to severe drought this summer, are under average. All bush fruits heavy.—A. CRYSTAL.

Carron House, Stirlingshire.—There is abundance of Apples on trees which invariably do well in the district, viz., Stirling Castle, Lord Suffield, all the Codlin class, Northern Greening, Irish Peach, Worcestershire Pearmain, King of Pippins, and Seaton House. The last-named is never known to fail, and we began using it last September

and were able to keep it sound till May. Cherries are plentiful; May Duke, Black Tartarian, and Morello are most plentiful. Pears are very scarce, and mostly confined to kinds of little value which are common in the district. Plums are mostly confined to Victoria, Kirke's, Jefferson's, Pond's Seedling, and Diamond. The crops suffered severely from the drenching rain of May 7. All bush fruits and Raspberries are very abundant and good. The growth on them (caused by the warm rains and mild weather in May) is very luxuriant. Strawberries are extra good in crop and quality; President, Sir Joseph Paxton, Duke of Edinburgh, and Loxford Hall Seedling are bearing most abundantly. Peaches and Nectarines are not grown outside, but under glass the crops are abundant, colour and general quality being all that we could desire.

POTATOES have been earlier than usual; crops are most promising. The earliest kidney was Belvoir Castle, and the round variety first in use was Drummond's Early, a really good sort.—M. TEMPLE.

Carstairs House, Lanark, N.B.—Apples promised well here and in this locality. There was a very satisfactory set, but the young fruit afterwards fell off in great numbers, owing no doubt to imperfect blossoms. Our most reliable bearing kinds—Lord Suffield, Stirling Castle, and Duchess of Oldenburg—are heavily cropped. Pears and Plums require to be trained against a wall; in this district both are under average. Cherries both sweet and Morello enormous crop. Gooseberries and Raspberries both good. Strawberries were under the average. The varieties that succeed best here are President, Garibaldi, Countess, James Veitch, and Elton Pine. Red, White, and Black Currants much under average. Bush fruits of all kinds under average size, owing to the hot dry weather in June.

POTATOES, an excellent crop, the tubers clean skinned and of first eating quality, and as yet there is no appearance of disease.—D. MACKENZIE.

Milne Graden, Coldstream, N.B.—The fruit crops here and in the immediate neighbourhood are as a whole rather unsatisfactory this season. Peaches out of doors almost *nil*, and Apricots a very thin crop. Some kinds of Apples are bearing well, amongst which may be noted Irish Peach, Blenheim Orange, Lord Grosvenor, Yorkshire Greening, Cockpit, Alfriston, Warner's King, Aitken's No. 2, Small's Admirable, King of the Pippins, Ravelstone Pippin, Duchess of Oldenburg, Waltham Abbey Seedling, Court of Wick, and Devonshire Quarrenden, these being all young trees from six to eight years planted; old specimens of Manks Codlin, Hawthornden, &c., are almost entirely without fruit. Louise Bonne of Jersey planted on west wall is the only variety amongst Pears with anything like a crop. Plums are fairly well represented by such kinds as Green Gage, Golden Drop, Kirke's Seedling, Magnum Bonum, and the never failing Victoria (on walls), all bearing a fine lot of fruit. Sweet Cherries were plentiful; Morellos scarce. Strawberries abundant in most gardens, and about ten days earlier ripe than usual. The variety Wizard is still supplying us with dessert, and is likely to continue doing so for some time. I consider this a splendid late variety. Raspberries are very fine. Currants and Gooseberries are thinner than usual.

The season hitherto has been a very favourable one for the growth of vegetables, but has on several occasions been marked by great extremes in temperature, and in one or two instances accompanied by heavy showers of very large hail, such as has never been experienced in this district before. Potatoes are lifting very well.—JAS. GRAHAM.

Ardmillan, Girvan, Ayrshire.—In this garden the Strawberry crop was about the average and the flavour very good. Raspberries and Gooseberries very good. Currants much below the average. Cherries, Pears, and Plums almost a failure. Apples below the average; Lord Suffield, Carse o' Gowrie, and Golden Pippins very good. Peaches are not very successfully grown outside in this district. Under glass they do well here, Noblesse and Royal George being the best sorts I have grown for flavour; the last-mentioned is a splendid exhibition

Peach when well grown. Bad flavour is often caused by overcropping, and old unhealthy trees often bear a number of bad-flavoured Peaches. Fruit with split stones is always bad in flavour, and may be caused by a too sudden rise of temperature after cloudy days, or watering when the fruit is near the ripening stage. Care ought then to be taken to keep a steady temperature and to water with clear water.—JAMES BARRON.

Cullen House, Cullen, N.B.—I am sorry to say the fruit crop of 1889 is not to be what I at one time expected. Trees in the early part of the season showed fair prospects of a crop, with the exception of the finer classes of fruit, such as Peach and Apricots outside, which did not show blossom. The trees in many cases are severely crippled by insects destroying the foliage. Plums are a fair crop. Pears and Apples are nearly a failure, no doubt greatly owing to the excessive heat and drought of last month. Small fruits, as a rule, are abundant.—JAMES F. SMITH.

Ardarroch, Gareloch Head, Dumbarton-shire.—Owing to the pasty soil in this district, Apples and Pears are not grown in any quantity; unless in very dry seasons, no crop can be got; this year there are very few. Bush fruits are an abundant crop. Black Currants far above the average; Raspberries also above the average, but small in size, owing to the continued drought during their swelling period. The same remarks apply to Strawberries, especially the earlier varieties. Plums, Apricots, Cherries, &c., like Apples, Pears, and Peaches, owing to the nature of the soil, are not grown in sufficient numbers to give returns.—R. C. FRASER.

Terregles Gardens, Dumfries.—The fruit crops in the gardens here and in this neighbourhood are generally good. Gooseberries and Currants are abundant. Raspberries are under the average. Strawberries two and three years planted have borne heavy crops of good large fruit; from older plants the fruit was small and soon over, and the whole crop suffered very much from drought. The Countess and Elton Pine have done best. Apples are a splendid crop, all the standard sorts bearing heavy crops of clean fruit. Of Pears, the Hesse, Crawford's Jargonelle, Williams' Bon Chrétien, Louise Bonne of Jersey, Marie Louise, Thompson's, and Beurré Diel are bearing good crops, the fruit being clean and of good size. Plums are also an average crop, Victoria, as usual, being the best.—A. CHALMERS.

Dalkeith, Midlothian.—The season has been, on the whole, favourable to the fruit crops, and most kinds are bearing well. We had no frost in spring to injure the blossoms, and, except where the last season's growth was unripe, the fruit set freely. Apples, Pears, and Cherries are fully an average crop. Apricots, Plums, and small fruits are over the average, and Peaches and Nectarines are much under it. The quality of all is excellent. The crop of small fruit has been very fine, especially Strawberries, which have lasted much longer than the usual period on our light dry soil. The wood of Peaches and Nectarines did not ripen thoroughly last season, and in consequence, although in many instances they flowered freely, few or none of them set fruit. They are always an uncertain crop on open walls in this district, and on an average of seasons they do not give a profitable crop. Here, at an altitude of 200 feet, and in a light, dry, warm soil, with a sheltered southern aspect, we generally secure a fair crop in moderate seasons by protecting the blossom with two or three ply of old herring nets. Still the fruit, although very useful, is not first rate, nor equal to that produced in properly constructed glasshouses with just as little trouble and far more certainty. In favourable seasons, such as 1887 and this, the flavour of some varieties grown on the open walls equals that of the very best grown under glass, but the size and appearance of open-air fruit are generally deficient. The early varieties are most successful on open walls; late varieties often fail to ripen and always lack flavour. Alexander and Hale's Early are varieties that are usually satisfactory, and any that ripen before or along with Royal George are likely

to succeed. Nectarines are even less profitable than Peaches on open walls, although the best varieties, Lord Napier, Pine-apple, and the like, give good crops in favourable seasons.—M. DUNN.

Drummond Castle.—The fruit crops in this neighbourhood with a few exceptions are this season under the average. Stirling Castle and Lord Suffield Apples have a fair average crop, and in my opinion are the only varieties worth growing in this part of the country. Plums very poor; even the free-bearing Victoria has only a sprinkling, although on a wall with southern exposure. Cherries are plentiful, but small, owing no doubt to the very dry weather we had in May and June. Gooseberries, Red, White, and Black Currants, &c., a thin crop. Strawberries also a light crop.—JOHN ROBB.

Falkland Palace, Fife.—The present season has been one of the most favourable for many years; indeed, but for the damaging hail showers during the time the Apple trees were in blossom, it has been altogether favourable. The Apple trees suffered considerably from the frequent hailstorms; in many cases the foliage was torn to shreds. The trees thus weakened got badly infested with aphids and spider during the subsequent hot dry weather, and now large quantities of the fruit have fallen off prematurely. Bush fruits have finished off excellent crops except Black Currants and they were much under the average. Early varieties of Strawberries were a full crop, late kinds very light. Cherries under the average. Plums a fair crop. Pears light. Apples fairly plentiful, but very irregular.—A. DEWAR.

Glamis Castle, Glamis.—The fruit prospects, which in spring were promising, have not been fully realised, but on consideration the result is not to be wondered at. Following on the cold unless character of last year we had a comparatively mild open winter and a dry spring, remarkably free from late frosts, while during the blooming period the weather was dry and scorching. Though the Apples, Cherries, and Plums flowered abundantly the bloom was quickly past. This was succeeded by a plague of insect pests that so greatly exhausted the trees that there was a poor crop of the larger fruits in consequence. Apple crop very light generally; on a few sorts, notably Stirling Castle, Keswick Codlin, Stone Pippin, Dalgairn's Pippin, Tower of Glamis, Lord Suffield, Northern Dumpling, Lane's Prince Albert, &c., there is a fair sprinkling of fruit. Apples particularly bloomed well, but suffered greatly from the ravages of caterpillars. Pears a complete failure; very few blooms either on wall or standard trees. Plums light crop generally; such sorts as Victoria, Pond's Seedling, Jefferson's, and Kirke's have a moderate crop. Cherries generally a failure. Morellos good. The trees bloomed abundantly, but fruits dropped at stoning. Apricots very thin, trees cankered badly this year. Peaches and Nectarines very few grown and crop a failure, trees mildewing badly in most places. Gooseberries good crop generally. Some sorts suffered much from caterpillar and red spider on light soils. Strawberries excellent crop—the best crop for some years, but have gone quickly past. Raspberries fine crop generally. Currants moderate crop. The Currants, especially Black, dropped a good deal of the fruit during the dry weather.—JAS. WHITTON.

Galloway House, Garliestown.—The fruit crops in this county are below the average. Some sorts of Apples are very good, while others are fruitless. Those carrying full crops are Warner's King, Lord Suffield, Ecklinville Seedling, Pott's Seedling, Emperor Alexander, and Galloway Pippin. Of dessert sorts, Thorle Pippin, Quarrenden, King of the Pippins, Irish Peach, and Ribston Pippin are very good and the fruit promises to be very fine. Pears are the worst crop known for many years. Marie Louise has a fair crop; Louise Bonne of Jersey, Beurré Rance, Knight's Monarch and Ne Plus Meuris have a sprinkling of fruit, other sorts have but very few. Plums are good in most places, Jefferson's, Victoria, Lawson's Golden Gage, Green Gage, and Coe's Golden Drop are very good on walls; Victoria on bush and standard trees is a good crop.

Peaches and Nectarines are almost a failure. Royal George and Elruge have a few fruits. Apricots very thin, not much grown in this district. Cherries, both dessert and Morellos, are good crops and the fruit large. Figs very good; Brown Turkey and Castle Kennedy are the sorts grown. Strawberries were remarkably good, and the fruit very large. Noble has proved a good early kind, being ripe on the 17th of June. We gathered fruit of Black Prince and King of the Earlies on the same date, but the samples of Noble were much larger than those of these kinds. Gooseberries, Currants and Raspberries are abundant and of excellent quality. Fruit trees of all kinds have made excellent growth, and at present look very healthy.

THE POTATO crops are good, and very little disease has appeared as yet.—JAMES DAY.

TREES AND SHRUBS.

MYRICA RUBRA (SIEB. AND ZUCCARINI)
—MYRICACEÆ.

THIS is a comparatively newly discovered Japanese Evergreen. It is a fruit tree, producing a highly flavoured edible fruit, an inch in length by three-quarters of an inch in diameter, and in shape resembling a Blackberry. It is firm and contains a single seed of light weight. The fruit is dark red, almost black, but there is also a light rose-coloured variety the fruit of which is said to be sweeter than that of the one first-mentioned, although it is not quite so large. The fruit ripens in Japan in the early part of July, and can be used for many purposes. It is now used as a dessert, and is sometimes preserved. The extracted juice can be used as a beverage in its fresh state, and by slight fermentation produces a delicious wine. The foliage resembles that of a small-leaved evergreen Magnolia, and is firm and leathery. The tree is ornamental, and its bark can be used to make a dye of a beautiful fawn colour. It is not a very hardy tree, but will succeed well in a climate where the Fahrenheit thermometer does not indicate below 20°, and where the summer is sufficiently hot.

I think it would succeed well in the southern part of California, all the southern States of the United States, Central America, Mexico, Italy, Spain, and the southern part of France. It is questionable whether it would succeed in England, Germany, and the northern States of America; certainly not without very adequate protection during the winter.

The propagation of *Myrica rubra* will be best accomplished through its seed, as the wood is too hard for cuttings. It is true that scions of fruit-bearing trees could be grafted upon seedlings, and perhaps thrive and bear fruit more rapidly, but I do not think that this would be advantageous, as the seedlings themselves will almost always grow into handsomer trees and produce good fruit. Therefore I should prefer propagation by seed only.

The growth of the tree is rather slow, but if planted extensively it will pay well in time, as the trees not only will produce a delicious fruit in abundance, but will also yield a fine bark, which can be used for dyeing purposes, and a splendid timber showing a mottled grain better than the best Maple. The wood is light, tough, and lasting, and is now used in Japan for fine cabinet-work.

The seed should be sown in a light loamy soil, and placed on bottom-heat if obtainable. The seed should be shaded with boards if possible, otherwise with a thick mulching of straw or other vegetable matter about a foot deep. Seeds must not be exposed to the sun's rays or

to too much light. The accompanying photograph shows a fruiting branch of this tree (cut in the woods near Kyoto). A great deal of the fruit had been lost between the cutting of the branch and the taking of the photograph, as it (the branch) had been carried through a heavy rain-storm for the distance of five miles before it was photographed.

Plants are at present very scarce, as the Japanese have not sufficiently appreciated the beauties of this tree to properly propagate it, but seeds can be collected.

LOUIS BOEHMER.

28, Bluff, Yokohama, Japan.

* * With this communication we received the photograph alluded to, and which showed a large fruiting branch of this plant. The photograph was, however, too indistinct to be able to obtain a good engraving.—Ed.

The Lead Plant (*Amorpha canescens*).—This is a very pretty little shrub, less vigorous than any of the forms of the better known *A. fruticosa*, and also somewhat later in flowering than they are. Its usual habit is that of a freely-branched specimen about 3 feet or 4 feet high, clothed with pinnate foliage of a peculiar hoary character, while the bright purple blossoms are borne in dense terminal spikes. The individual blooms are small, and add an additional feature to the specimen, which even when devoid of flower is attractive by reason of the silvery character of the foliage. This *Amorpha* is the Lead Plant of the United States, owing to its being generally believed that its presence in one particular spot indicates the existence of lead ore in the ground. It usually dies down nearly to the surface of the soil during the winter, but pushes up with additional vigour on the return of spring, and soon reaches a yard or more in height and as much through. This *Amorpha* is but rarely met with. It will grow in dry sandy spots better than many other shrubs will do.—T.

Cut-leaved Alder (*Alnus glutinosa laciniata*).—This tree when planted on wet swampy ground that cannot be properly drained, and where few other trees will thrive, forms a beautiful specimen some 30 feet or 40 feet high, with a trunk fully 2 feet in diameter, well furnished with branches, and clothed with its finely-cut ferny-looking spray of a dark green colour. Although it flourishes in bogs and swamps, yet it is by no means confined to such places. It is equally as hardy as the species, yet I have never found it to reproduce itself, although I have often looked for seedling plants in the vicinity of old trees. It can, however, be readily increased by grafting it upon young plants of the common Alder. It is a capital tree for planting in villa gardens in the vicinity of large towns, where many other species of trees and shrubs are liable to be killed or suffer serious damage from the smoke. It will bear almost any amount of pruning with impunity, and can thus be kept within bounds.—J. B. W.

Fraxinus lentiscifolia.—This very distinct species of the Ash is a native of Asia Minor, where it is said to attain a medium size. In this country it has proved to be perfectly hardy, and is one of the best trees with which I am acquainted for planting in smoky districts about large towns. It is generally propagated in this country by grafting it upon the common Ash (*F. excelsior*), and when properly trained it forms a beautiful round-headed tree, some 10 feet to 20 feet high. Its appearance when thoroughly established and in the distance is not unlike that of the Robinia, or Locust Tree. The bark of the stem is rough, corky, and furrowed; leaves alternate, light green in colour, each about three-fourths of an inch long, and slightly serrated around the margins. It is a grand tree for villa planting in the vicinity of towns and other places where the grounds are of small extent, and as it grows in any ordinary class of soil, provided it is thoroughly drained where requisite and well trenched it is well worthy of attention. Although

the tree is perfectly hardy, yet I have found it do best in places where the site is open, but protected from the full force of cold cutting winds when the tender foliage is beginning to expand in early summer.—J. B. W.

THE TREE SPURGE.

(*EUPHORBIA DENDROIDES*.)

ANYONE who, from spring to autumn, takes a walk along the calcareous rocks which fringe the coast of the French district of the Orange tree must be struck with the handsome habit and lively foliage of a shrub which is entirely unknown in more northern maritime or inland districts. This is the Tree Spurge (*Euphorbia dendroides* of Linnæus). It has often been described since the time of Linnæus. Aiton named it *Euphorbia læta* on account of the cheerful green tint of its foliage, and Jacquin wrote of it under the title of *E. divaricata*, in allusion to the divergent habit of its branches. The plant is common in the island of Candia, and is also found in many parts of Greece and



The Tree Spurge (*Euphorbia dendroides*).

Italy, and on the Mediterranean coast of France from Nice to Mentone and elsewhere, but always on the calcareous formation only. It is also found in Catalonia and on the north coast of Africa, and, in fact, on nearly the entire coast of the Mediterranean, where it enjoys warm positions on arid rocks of Jurassic limestone.

Its elegant habit, tufty branches, autumnal bloom, and the fine green colour of the young shoots in early spring render it a most desirable subject for cultivation. The stem is upwards of 3 feet in height, and bears numerous ascending, brown, very leafy branches, forming a compact round-headed shrub. The leaves are of a delicate lively green on the upper surface and pale underneath.

A written description, however, or the sketch of a single branch, fails to give any idea of the elegantly regular habit of this plant, which is well illustrated by a fine figure in Sibthorp's "Flora Græca." In attempting to extract the roots from the narrow fissures into which they descend deeply, they are almost always broken,

and the plant seldom survives the injury. This is less likely to occur if very young plants are taken up in preference. The surest way, however, is to raise plants from seed, which is easily obtained at the proper season in localities where the plant grows wild. We have planted groups of this *Euphorbia* to great advantage in landscape gardens in the south of France, where it requires no special attention to enable it to produce a truly ornamental effect with its regular habit and the airy grace of its handsome foliage.—*Revue Horticole*.

VARIEGATED TREES IN GARDEN SCENERY.

THOSE who are sensitive to the crude and harsh colour contrasts which unfortunately abound in many gardens, both large and small, will welcome W. Goldring's much needed protest (*GARDEN*, Aug. 17, p. 154) against the indiscriminate use of variegated trees and shrubs without due regard to position or ultimate effect. It is impossible to stay a popular fancy or stem the tide of fashion, and many of these variegated trees having become popular or fashionable, it followed that they must be obtained and planted with a result which is now deplorable.

The planting of the Silver Maple, Golden Elder, and Purple Beech has been so abused that some owners of gardens have come to regard them as things to be shunned; whereas, judiciously used in a suitable place they vary the interest, increase the charm, and enhance the beauties of garden or park landscape.

"The effect of a laundry ground" would be no exaggerated description of a prettily situated garden I once saw at Tunbridge Wells. Taste is a curious quantity, and as here displayed its vagaries were both ludicrous and disastrous. There were hardy flowers in rich and beautiful variety, but the Silver Maple was everywhere, and the aspect of the whole garden was sickly. The garden was not extensive, and where one tree of this Maple would have been ample a dozen were standing. This is but one example of the many which are to be seen at the present day.

Different places require different modes of treatment, sometimes in a bold way, sometimes quietly, and thus it is that although the finer variegated trees and shrubs play an important part in the best created park and garden landscapes, they are also responsible for the creation of many poor, spotty, and ineffective arrangements. Better things will probably be done when more intelligent ideas upon planting prevail, when, instead of the old complex mixture of many things, good, bad, and indifferent, fewer things will be used, and these in some simple way.

In tree and shrub planting, intelligent discrimination and the selecting of suitable things are always essential, but especially so when we come to deal with trees and shrubs having variegated or highly coloured foliage. It requires much care and thought to produce the soft harmonies and subtle contrasts which are occasionally seen in gardens, but frequently in Nature. A. H.

SHORT NOTES.—TREES AND SHRUBS.

Prunus Simoni.—In California the fruit of this develops into a handsome oblate, deep purple Plum much larger than it appears in the engravings of the fruit grown elsewhere. It ripens very early, and is very durable when shipped, so that it promises to take a high rank among early market Plums. The *Pacific Rural Press* observes that nurserymen are propagating it extensively.

Fruits of Rosa spinosissima.—The ordinary form of the Scotch Rose (*Rosa spinosissima*) is when in fruit very different from most of the members of that extensive genus, for both the berries and the stalks by which they are supported are nearly black, and being borne in considerable numbers the difference between them and the other kinds with their glowing red fruits is very marked.—T.

Phillyrea Vilmoriniana in fruit.—This handsome *Phillyrea* which bids fair to be one of

the most valuable evergreen shrubs we possess in our gardens, and which during the spring was in many places profusely laden with its white blossoms, is just now studded with berries, which should afford a ready means of increasing it, and thus allow our nurserymen to offer this fine shrub in quantity and at a moderate price. The berries are oblong, about half an inch in length, and when ripe much the colour of a Sloe. Each contains a single seed, but as a considerable number of berries are borne on one plant a large quantity can, if the seed is perfect, be raised in this way.—T.

TRANSPLANTING CONIFERS IN AUGUST.

IN the year 1870 I proposed to overflow a tract of land for the purpose of ice-cutting. In order to do this it became necessary to remove about 40,000 trees of my nursery stock, consisting of Spruce, Pine, Hemlock, Arbor-vitæ, &c., of various sizes, ranging from 2 feet to 7 feet in height. The transplanting was done during an unusually dry August, and the distance of removal was about half a mile. The autumn months continued to be so exceptionally dry that many trees in the forests perished in consequence, yet the new plantation proved to be remarkably successful. This was due to the fine, yet compact, condition of the soil enabling the young roots to form rapidly, and the trees were well established before winter set in. Perhaps this was the first extensive experiment in the August planting of conifers in this country. But it was so conspicuously successful, that confidence in the practice was soon established. The common name Evergreen indicates the persistence of the foliage, and these trees must be in full leaf at whatever season they are planted. The essential point to secure is quick root action, to sustain the tree as speedily as possible. It is well known that the roots of Evergreens are in active growth long after the upper growth is formed and while it is hardening. Hence it seems reasonable to conclude that when the soil is warm in the last half of August and early September and the air is growing cooler the equilibrium of a transplanted tree will speedily be restored. In the month of May, when by far the largest number of trees are planted, active growth soon follows, evaporation is excessive during the hot June days, and it is the common experience that the strain upon trees of any size is severe.

Let me cite two cases during the past year by way of comparison. On the 25th of August, 1888, I transplanted from the nursery into groups on an avenue eleven White Spruce trees, averaging 5½ feet high. They had ordinary care and have made healthy growth, none of the terminal shoots being less than 12 inches in length. Indeed, they compare favourably with their companions which remain in the nursery. On the 14th of May last, Mr. Bowditch, the well-known landscape gardener, ordered 200 Spruce trees of the same size, and, as is his custom, sent his men to dig and replant; but, finding that he had dug forty trees more than were wanted, he requested permission to replant these in my grounds. Now, since his men are as careful planters as mine, a good opportunity offers to compare the results of planting in August or in May. Mr. Bowditch's trees lived, of course, but they look as May-planted trees usually do—that is, as if they had passed through a fit of sickness from which they were slowly recovering. In no case is the annual growth more than 7 inches, and the average is less than 6 inches. In my judgment the different times of planting will account for all the difference in growth, and this is so obvious that I am sure Mr. Bowditch will excuse me for citing the case.—*Garden and Forest.*

Bignonia radicans.—I saw this plant flowering grandly the other day, its growth being entwined amongst the shoots of a Banksian Rose. The Bignonia is an unruly growing subject, requiring constant attention to keep it within bounds, but, associated with the Rose I have mentioned, and having a large space to ramble over, the plant was more under command and flowering more freely than I remember ever to have seen it. The

long trumpet-shaped flowers hung in large clusters. It is of very little use to attempt to grow this plant on a limited wall space. It is naturally a rampant grower, frequently making shoots 8 feet long in one season, and as it is the current season's growth that produces the flowers, it is necessary to secure it to the wall. By associating the Bignonia with the Banksian Rose, the cultivator in a great measure gets rid of the necessity of training it.—J. C. C.

STOVE AND GREENHOUSE.

WORK IN PLANT HOUSES.

GREENHOUSE.—**PELARGONIUMS.**—Plants of the large-flowered varieties of Pelargoniums that, after having their wood well ripened in the open air, were cut down some weeks ago will now have made enough growth to require potting. They should have most of the old soil shaken away, and the long straggling roots that have formed a mass at the bottom amongst the drainage cut off. Old plants that have attained full specimen size should be put into pots an inch or so smaller than those which they have occupied. The soil in which they are potted should consist of good turfy loam of medium character, neither light nor very close and heavy, as when light soil is used, it has not sufficient lasting power to sustain the plants through the year, and when too close and adhesive, the roots do not run freely in it. About a sixth part of rotten manure and some sand should be added to the loam. If the whole has lain together for some months before being used, it will be all the better. The loam should be broken up by hand, and care should be taken that all worms are got out before it is used, as if present in the pots they are often difficult to get rid of. In potting, ram the soil so as to make it quite solid, without which it is not possible to grow these Pelargoniums well. When the material is not sufficiently firm it holds more water than the roots will bear during the winter, and causes the production of long-jointed, spongy wood, with coarse, over-luxuriant leaves, in which condition, when the spring comes round, the plants are more inclined to run to growth than to set their bloom. Young examples that have this season flowered for the first time may be put into pots similar in size to those which they have been in, and in their case fewer of the old roots need be cut away. Young stock struck in spring will now have filled the pots with roots, and should be moved into others a size larger. In shifting the plants, do not disturb the roots more than is necessary. The shoots of these young plants should be tied well out, so as to bring them down almost to the rims of the pots. If this is not done the first summer, the branches get too stiff to bend afterwards. When the plants are properly trained whilst young they require much fewer sticks to support them.

FANCY PELARGONIUMS.—In heading down this section of Pelargoniums it is not usual to cut the branches in nearly so close as the large-flowered varieties; consequently at the time of repotting, the plants have more foliage on them. If the whole of the old soil was shaken away, as in the case of the large-flowered sorts, it would cause many of the leaves to perish; on this account it is better to retain a little of the old material. In potting make the soil solid as recommended for the large-flowered sorts. After the potting the plants should be stood in a frame or pit, where they will get plenty of light; do not admit much air for a week or two, so as to get the growth to move quickly. Syringe overhead every evening, but do not give water to the soil until the roots have begun to move, and even then it must be applied carefully. See that the stock is quite free from aphides, on the appearance of which fumigate twice, at an interval of about a week.

STOVE.—**GESNERAS.**—Winter-blooming Gesneras of the zebra section, if not already in the pots they are intended to flower in, should at once have the final shift. Six-inch pots are large enough for single plants; where two or three are grown together give them proportionately more room.

Nothing must be left undone to keep the foliage clear from insects; if any of the worst of these pests, such as mealy bug, are allowed to get numerous, the leaves, which when in good condition are so effective, lose all their brilliancy. Even careful sponging injures them. As soon as the pots are well filled with roots give manure water once a week. Soft-wooded subjects of this nature are better not grown in a very high temperature, especially during the summer and autumn months, as if kept too warm the leaves come soft in texture, and are not able to retain their bright colour until the flowering is over. The summer blooming kinds of Gesnera, such as G. Cooperi, G. glorioxia-flora, G. Donckelaari, and others of the solid tuberous-rooted section, will in most cases have done flowering, and show signs of going to rest. Give water in reduced quantity as long as the leaves retain vitality. When the tops have died down allow the soil to become dry, after which the tubers may remain in the soil, or they may be shaken out and put in sand in paper bags. Whichever way they are wintered they must not be kept too cold; an intermediate temperature suits them best during the period of rest.

ACHIMENES.—Except in the case of tubers that were started later than usual in spring the plants will now have done blooming. Treat them as advised for the Gesneras, giving them moderate warmth, with enough water to keep the soil a little moist so long as there is any life in the tops. Achimenes and other things of a like nature are frequently subjected to neglect directly they have done flowering, the plants being allowed to remain where they are too cold and the soil to get quite dry, so that the leaves whilst yet living wither and die off before their time. When this occurs if the tubers are examined they will be found to be thin and shrivelled in place of being plump and strong. When submitted to this kind of ill-usage the tubers generally perish in the winter, and those that survive are worth little.

GLOXINIAS.—Strong tubers that began to flower early will have nearly completed their growth. Give no more water than will suffice to keep the leaves from shrivelling, withholding it altogether as soon as they turn brown and die off, after which treat the roots as advised for the Gesneras. Plants that were raised from seed sown in spring, and that are meant to flower during the latter part of autumn, will now require attention. If the pots they are in are not large enough, move them at once into others a size larger; keep them in a growing temperature close to the glass; this latter is of even more importance with plants that are to bloom late in the season than in the case of the earlier flowering set, as short days tend to growth that is proportionately weaker than that which is made in the height of summer, and without stout foliage it is not possible to have flowers with the requisite substance to enable them to be of any use for cutting. Young stock raised from leaf cuttings during the past summer must be supplied with water as long as the foliage keeps fresh, for whilst the leaves have any vitality in them the tubers will increase in size, and the larger they get the better they may be expected to bloom next year.

ALLAMANDAS.—The treatment that these plants require at this time depends upon what they are intended for. Where the object is to have them in flower early, say by the end of next April, growth should now be discouraged by keeping the soil much drier than during the summer. No more water should be given than will prevent the leaves flagging much; by this means the wood will soon get matured, and the plants be in a state that will admit of their tops being cut close in in time enough to enable the young growth to make some progress before the end of the year. Allamandas do not require nearly so long a rest as often supposed, and where flowers are wanted late the plants may be kept on blooming till about the close of the year. All that is requisite for this is that they should be located in a house where a warm stove temperature is maintained, and that the roots be sustained by regular applications of manure water, for so long as the branches continue to extend they will produce

flowers. It is well to have two or three plants so that by varying the treatment in the way indicated flowers may be had continuously for seven or eight months. Kinds that bear flowers of medium size, such as *A. Chelsoni* and the old *A. cathartica*, are better for providing cut bloom than the large sorts like *A. Hendersoni* or *A. nobilis*.

DIPLADENIAS.—These plants when in good condition, with enough heat, will continue to flower up to the latter end of November. When flowers are wanted for as long a season as possible—say, from the end of April up to the close of autumn—several specimens should be grown. Such as are required to bloom in spring should have very little water for the next five or six weeks, giving no more than will just prevent the leaves flagging. This will give the plants all the rest that is necessary. By the middle of October the branches may be cut back to within 7 feet or 8 feet of the bottom; the specimens may then be turned out of the pots and have most of the old soil removed, repotting them in new. No matter how fresh or little decomposed the material appears to be, it is necessary to renew it once a year, as it is not safe to trust the roots in it a second season, for should it get in the least close and soddened they are certain to perish, which simply means the destruction of the plants. By treating a plant or two in the way described, and allowing others to keep on blooming later, there is no difficulty in having a regular supply of flowers throughout the greater portion of the year; but to do this it is necessary that a warm stove temperature should be kept up continuously. *D. amabilis* and *D. crassinoda* are the best of the ordinary kinds. The white-flowered *D. boliviensis* is a distinct species. It will thrive and flower with less heat than any of the other sorts, it attains a larger size than any of the others, and does well when planted out in a bed. All the others are best in pots, as when their roots have liberty to ramble about in a bed there is much more difficulty in keeping the soil in right condition for them. Young plants that were struck from cuttings last autumn or in the spring do not require any rest, and in reality are much better in every way if kept growing through the winter. In their case all that is required is to give more pot-room as needed. The best peat, with plenty of vegetable fibre in it is the most suitable compost for *Dipladenias*. It should be light in texture, and half of the earthy matter should be shaken out. This may appear an extravagant proceeding where good peat is scarce and expensive. Either as plants to decorate warm houses, or for the production of cut flowers of the choicest description, it would be difficult to name any that are equal to these *Dipladenias* when the quantity of flowers is taken into account. For bouquets and other arrangements the flowers are best when only partially expanded. Young examples of the description named are best with their branches allowed to extend under the roof of the house, where they will get all the light that it is possible to give them. Grown in this manner, the strength which the shoots and leaves attain is participated in by the roots.

SHADING PLANT STOVES.—The time is now at hand when it will be necessary to discontinue shading most of the occupants of the stove, especially such as are grown for their flowers. Shading, whether fixed or movable, should never be allowed to remain on the glass after it can be dispensed with, that is, after the sun's power has so far waned that it will not injure the leaves. When the time arrives that the solar rays may be allowed to reach the plants directly, depends upon the nature of the individual kinds, and also on the position of the house. Span-roofed houses that stand with their ends north and south do not require shading either so early or so late in the season as when they stand in the opposite direction, or as do lean-to houses that face the south. These are matters that obviously have to be taken into account in determining when shading can be dispensed with.

T. B.

Rhododendrons in bloom.—At first sight *Rhododendrons* in August appear to be somewhat out of season, but the various members of the tube-

flowered section are just now unfolding a splendid crop of blossoms, and at this season form when in bloom very attractive objects among the less common greenhouse plants. These *Rhododendrons* flower more or less throughout the year, but there are two periods when the crop of blossoms is very general. The first is during the spring months, and the second now at its best is supplied by the flower buds which are borne on the young shoots of the current year. Directly after flowering the plants will again push out new shoots, which will in turn flower next spring. These *Rhododendrons* do not require any special care and attention, the principal consideration being to see that the compost employed for potting them is of a good open nature, such as fibrous peat with a liberal amount of sand, and if a few nodules of charcoal are mixed with the soil so much the better. The syringe should be liberally used amongst them during the summer months, otherwise the foliage is liable to be attacked by thrips. There is now quite a long list of varieties, for nearly all of which we are indebted to Messrs. Veitch, some of their earlier raised sorts being still among the best.—H. P.

Ixora Colei.—While most of the garden varieties of *Ixora* produce blossoms more or less suffused with an orange-salmon shade, in this they are pure white, and on this account a place must be found for it wherever these beautiful plants are grown. Besides its distinct tint the plant is of good, robust, yet much-branching habit, the foliage ample and well coloured, while the flowers are freely borne in large round clusters. A distinct feature is furnished by the brownish anthers, which contrast with the purity of the rest of the flower. The *Ixoras* are beautiful autumn-flowering stove shrubs, and a selection of them should be made wherever there is a structure suitable for their culture. One species that must not be left out is the South Sea Island *I. macrothyrsa* or *Duffi*, a strong, upright growing kind, with immense heads of rich glowing crimson-coloured blossoms.—H. P.

SHORT NOTES.—STOVE AND GREENHOUSE.

Anemone japonica in pots.—I lately saw this plant used with good effect in the decoration of a conservatory. The plants in question had been lifted and potted in the spring before growth was far advanced, and had been grown in the open during the whole of the summer until the flower-spikes appeared, when the plants were removed to the greenhouse. At the time I saw them the plants were just expanding their flowers and presented a very charming appearance grouped with other flowering and foliaged plants, the pure white blooms being very effective. This *Anemone* well deserves extensive cultivation for this purpose.—C.

Bignonia purpurea.—This fine stove climber, of which a coloured plate was given in *THE GARDEN*, Oct. 23, 1886, is a good subject for large glass structures where the necessary heat is maintained, and under favourable conditions it will be now loaded with its beautiful purple blossoms. To succeed in its culture, it should be planted out in a prepared bed and trained near the glass. It requires little or no shading, as if this is overdone very few flowers may be expected. Like several others of its class this strikes readily from cuttings, and makes rapid progress if potted on afterwards.—H. P.

Chirita Mooni.—This handsome flowering plant is nearly related to the *Gesneras* and *Gloxinias*, as may be readily seen when it is in a flowering state. It forms a stout, erect growing plant, with light green leaves of thick texture, and large blossoms somewhat like those of the semi-drooping section of *Gloxinia*, and as much as a couple of inches in diameter at the mouth. The colour is a kind of purplish mauve, marked with yellow in the interior of the throat. Though it bears but few flowers at a time, these are so showy as to make a good display, while the same plant will continue to bloom for a considerable period. It is of easy culture, succeeding in any ordinary light potting compost.—H. P.

Cereus triangularis, now in bloom in the Cactus house at Kew, was introduced from Mexico as far back as 1690. The Kew specimen has been

there for many years, as shown by its dimensions and appearance, the straggling, weird and characteristic stem having encircled the rafter for a distance of many feet. It blooms at night, but the flowers, which are very broad, greenish on the outside, but white within, keep open until nearly mid-day. Such a specimen reminds us of the beauty of the *Cereus* genus, which contains some of the handsomest Cactuses of the family, and at Kew those who care for this class of plants will find ample material, as the collection is representative. Some of the flowers are as gorgeous as colour can make them, *C. J. Peacock*, for instance, in which a peculiar pellucid satiny shade, that shimmers in the sun, is laid on a ground of scarlet. Then we have the glorious *C. grandiflorus*, which shows its flowers, unfortunately, only at night, *C. nycticalus*, the sweet-scented *C. quadrangularis*, the scarlet *C. speciosissimus*, and *C. serpentinus*.

FERNS.

W. H. GOWER.

NEOTOPTERIS.

This is a genus of Ferns nearly allied to *Asplenium*, and indeed from which they differ only in having their veins joined together by a marginal cross vein. They have simple entire fronds, which do not afford much variety in the species, yet they form bold, handsome plants, and are very ornamental when well attended to, but if neglected, they produce deformed fronds, which are very ugly. This is easily brought about by dryness, or when potting the plants by breaking their roots in the operation. This injury is more distinctly shown by these simple fronded Ferns than any others. *Scolopendrium* is another genus which suffers from careless handling more than most Ferns; indeed, it cannot be too forcibly impressed upon the minds of all Fern growers how essential it is in the repotting of Ferns to be careful not to injure their roots, for these plants suffer in a marked manner from root injury. These plants have obtained the name of Bird's-nest Ferns from the peculiar nature of their growth; the fronds rise up from the erect caudex, leaving quite a hollow centre, and as the crown of the plant is clothed with a number of chaffy scales, the illusion becomes quite perfect. They are somewhat quick-growing and long-lived plants, and should be potted in a mixture of peat and loam made fairly sandy. The pots, which should be large, should be well drained.

N. AUSTRALASICA is a fine evergreen species, which is frequently confounded with the true Bird's-nest Fern. It has fronds each some 5 feet or 6 feet long. They grow erect, are elliptic-lanceolate in shape, becoming narrow at the base, whilst the midrib is sharply carinate behind, a feature which renders this variety even in a young state easily distinguished from the next species; the fronds also are broad and rich deep green in colour. This species succeeds well in quite a low temperature, a feature which also renders it distinct from *N. Nidus*. It comes from New South Wales.

N. NIDUS.—This is thoroughly distinct from the plant referred to above. The fronds of this are distinguished from those of the previously mentioned sort by their horizontal base before they ascend and grow erect; the fronds, moreover, are nearly of the same size throughout and obtuse. Its habit of growth leaves a much broader centre to the plant. It is a bold, handsome species from the East Indian Islands.

The above are the principal kinds which are in cultivation. Another kind, which is said to grow in the neighbourhood of Penang (*N. musæfolia*), attains large proportions, forms fronds each 6 feet long and a foot across, and carries an immense number of fronds. We have not

yet received this plant in a living state. There are several other species of much smaller stature, which although pretty have little to recommend them to the general reader.

TREE FERNS.

THESE noble Ferns are great favourites with all lovers of beautiful plants, and the increasing demand for them is clearly proved by the vast quantities of them which are annually imported by our leading nurserymen, and which as soon as established find a ready sale. New Zealand, Australia, and Tasmania are their principal

a house is to be constructed for the growth of Tree Ferns, I would have the bottom several feet at least below the surface. By this means, height is obtained at little expense, and thus the more vigorous and quick-growing kinds will not rapidly outgrow the accommodation. By this means, too, a splendid opportunity is afforded for forming elevated view points, from which a sight may be obtained of the tops of the plants, without which half their beauty is lost. In addition to these advantages, moreover, houses constructed in this way may be heated at a trifling cost compared with structures wholly above ground, because they do not pre-

an unfavourable aspect. To amateurs in particular, I would say, avoid overpotting Tree Ferns. The secret of their being kept in good health in small pots lies in a little extra supply of water, and also some weak liquid manure occasionally. Treated thus they have a much better appearance than in the monstrous tubs and pots in which they are so frequently seen in our plant houses. Tree Ferns vary much both in the height and diameter of their stems, such variation being caused by the greater or less number of fronds which go to form a spiral whorl, the kind of development by which their stems are built up. As a rule, those from temperate regions produce the greatest number of fronds in a single whorl, and consequently have the stoutest stems and are slowest in growth. The tropical kinds have usually slender stems, which are more or less armed with sharp spines and grow up somewhat quickly. In potting, use good peat and loam in about equal proportions, adding a quantity of sharp sand, and making the drainage perfect. Tree Ferns like an abundant supply of moisture in the air, and the stems should be frequently syringed to encourage the development of stem roots, which add so much to the health and vigour of the plants. One of the best known and one of the noblest of the greenhouse kinds of Tree Ferns is the one forming the subject of the annexed illustration—the Tasmanian Tree Fern (*Dicksonia antarctica*). Four other excellent kinds suitable for amateurs who can only give cool treatment, are *D. squarrosa* (sometimes called the "Table-top Fern"—a very fine kind), the Silvery Tree Fern (*Cyathea dealbata*—a noble Fern), *C. medullaris*, and *C. Smithi*. W.



The Tasmanian Tree Fern (*Dicksonia antarctica*).

resorts; and the fact that these plants thrive to perfection in ordinary greenhouses or conservatories enables amateurs whose means do not allow them to indulge in the luxury of a plant-stove to enjoy these gems among Ferns. Besides those from temperate climes, however, we have a goodly number of species from tropical countries. In constructing a house to grow Tree Ferns in, I strongly advise its being built below the ordinary ground level. If no natural ravine or dell exists in the garden in which to construct a house, then make one, for there is no real necessity for a Fern house to have high glass sides, and under all circumstances, where

sent much surface to the external atmosphere, and during the hot dry summer months a more equable and genial atmosphere can be maintained. Of course, such structures as these are intended for Ferns only, and not flowering plants.

In ordinary greenhouses Tree Ferns in pots form splendid ornaments, and they will accommodate themselves to such houses, where, from want of sunlight and other causes, any other class of plants would not only do badly, but perhaps refuse to drag out even a miserable existence, so that they specially recommend themselves to anyone having a glasshouse with

Adiantum farleyense.—Mr. W. H. Gower in his able contribution to your number of the 10th inst. does not mention one method of growing this beautiful Fern which I have found most successful. For four or five years I had three plants of *Adiantum farleyense* in pots, one large, one medium, and one small; sometimes they did better, and sometimes worse, but never well. One day a gardener asked me if I had ever tried one in a hanging basket. I put the small specimen into a home made receptacle of iron wire. In three months it grew more than it had grown in three years in a pot. My gardener followed the same system with the other two; the largest plant was basketed in October last, and it now measures 3 feet in diameter as it hangs naturally. Staked out, the measurement was 5 feet 6 inches, but I prefer to see the fronds droop, and only had the plant staked in order to get it photographed. I may mention that the two others are bidding fair to catch up, if not to surpass, the large one, and that there is only one plant in each basket. Hardening off is a bad business with these Ferns. Whether they come from Barbadoes or Bermuda, they hail from a climate where they always grow in a damp moist heat. Provided one has space, I see no limit to size in the growing of this plant, so far as length and breadth are concerned, but I cannot quite understand how it could ever reach a height of 8 feet or 10 feet, like those referred to in your issue of August 7 (p. 161).—J. WHITWORTH SHAW, *New Place, Lingfield, Surrey*.

Stenochlæna scandens.—I lately saw a splendid example of this beautiful Fern; it was luxuriating in a rock fernery, the long scandent rhizomes growing in a natural way. The rocks were kept moist by water dripping from above, and, judging from the manner in which the rhizomes had extended from the base of the rockery to the top, producing broad pinnate fronds at intervals, this is exactly the position suited to this Fern, the fronds hanging gracefully and contrasting well with other subjects of denser growth. The young fronds have a peculiar bronzy brown tint, and as they mature they gradually change to a bright fresh green. I have also seen this Fern grown to great

perfection as a pot plant. For this latter purpose seedlings are the most suitable, as the rhizomes branch out more freely; with care, however, plants propagated by division may be kept within bounds and good specimens formed. As spores germinate freely, there would be no need to propagate by any other method, but, unfortunately, fertile fronds of this species are rather rare. I have grown plants for several years without seeing any signs of fertility. Although this Fern delights in a warm humid atmosphere, it may be grown in a more exposed position, and plants so treated are more compact, and make useful subjects for ordinary decoration.—F. H.

ORCHIDS.

W. H. GOWER.

IONOPSIS.

I HAVE lately received from several readers flowers of this genus, asking for name and the treatment required, so that I here take the opportunity of saying a few words upon their cultivation. Ionopsis comprise a few species of free-flowering plants of small growth. We have for some years had some of these in our gardens, but they have gained the reputation of not living long under cultivation. This, however, I believe to be more the fault of the grower than anything else, as in the first place the plants are usually grown in too high a temperature, and in the next place are allowed to flower too much before they have become properly established. As the flowers remain in perfection a long time, they weaken the plants and ultimately kill them. The plants being but small growers even when thoroughly established, their branching panicles of flowers are a severe strain upon them. These plants flower during the winter, and this is an additional recommendation to their culture, as the small side branches of bloom are very beautiful when cut and arranged with Ferns in a small glass on the table. It will be found highly desirable not to allow the plants to flower at all until they have become well established. I prefer to grow Ionopsis upon almost bare blocks of wood. This appears to be the natural conditions under which they grow, and they do not appear to thrive when their roots are subjected to an over-abundance of moisture. Again, although these plants are natives of tropical America, I imagine they come from a considerable elevation, as I have found them to thrive much better and to live longer in the Odontoglossum house. I, years ago, used to grow them in the Cattleya house, and so, I think, did most Orchid growers, but I have since proved that cooler treatment is more beneficial. There appears to be some doubt as to the limits of the species of this genus. Professor Reichenbach appeared to think that *I. paniculata*, which is the form mostly introduced, is a variety of *I. utricularioides*, a plant widely spread in South America, and which bears white and purple flowers. If the colour of the flowers, however, is the only point of distinction, any amount of varieties can be obtained from a single importation. I have observed that *utricularioides* is a form with broad, much ribbed leaves, producing large panicles of flower, and it enjoys rather more heat than other kinds.

I. paniculata is a plant forming very small pseudo-bulbs on a creeping wiry rhizome, and its leaves, narrow, thick and fleshy, are each some 5 inches or 6 inches long. The scape produced from the last made growth attains a length of about a foot and bears several branches, the whole panicle having from 70 to 100 flowers, which last a long time in full beauty. The flowers are small, scarcely

ever reaching upwards of an inch across the lip, the largest part; the sepals and petals are small and pure white. The lip is also pure white, with the exception of a purple blotch at the base. The above is a description of the typical plant, but there are varieties destitute of the purple blotch, and in others the base of the lip is stained with yellow.

I. zonalis is a plant with broader leaves than the preceding, and it is stronger in its growth. The flowers are also white, with a zone of purplish-violet extending round the disc of the lip.

I. pulchella has violet-coloured flowers, which appear towards the end of summer.

These flowers, although they derive their name from resembling a Violet, are scentless. Although I strongly commend the Ionopsis to the attention of my readers, I at the same time condemn the plan of allowing the flowers to remain on the plants to the detriment of the health and strength of the specimens.

Oncidium obryzatum.—"W." asks for some instructions respecting the management of this species. It is a very showy kind which now, however, does not find much favour, but as its pretty yellow flowers, which are transversely barred with brown, are borne in branching spikes, the little side sprigs are very handy for cutting, more especially as the blooms are gratefully perfumed. The plant is a native of Peru, and I think it will thrive best with the Odontoglossums. The Cattleya house will be too warm for it. Remove it into cooler quarters, and have patience; it will bloom by-and-by. The same may, perhaps, be the matter with *O. incurvum*. If it is in the Cattleya house, remove it to cooler quarters.—W. H. G.

Cattleya Bowringiana.—"W." also asks for information respecting this plant. It is of recent introduction from Honduras, where it is said to grow in moist and hot situations. The flowers have the appearance and habit of those of *C. Skinneri*, and when seen in a large raceme are extremely beautiful; the sepals and petals are deep rose purple in colour, the lip being of a deeper shade of the same colour, with a dark maroon zone at the base; the throat white; the flowers individually are somewhat small and ineffective, but collectively they are superb. As it blooms during the months of October and November it fills the house with gay flowers at a time when very little is to be obtained in the open air.—W. H. G.

Epipogium Gmelini (*F. G. Winchester*).—In a bundle of specimens which I had to name from the above, from Switzerland, comes a spike of this plant. I have never seen the plant before, and it is worth recording because of its rarity. It is said to be a native of Britain, but it has only been found once, as is recorded in Hooker's "Flora of the British Islands." The plant has no leaves, the stem is swollen at the base, and the flowers are clustered towards the top and are pale yellow, the lip being marked with raised protuberances, arranged in lines of a rosy-red. It is a very singular plant, and is a lucky find for anyone. I should like to become the possessor of a specimen.—W. H. G.

SHORT NOTES.—ORCHIDS.

Lycaste costata is a species with yellowish-white flowers, the lip tinged with yellow on the disc and deeply fringed at the sides. It is a pretty kind which blooms in midwinter, and therefore is all the more valuable.—W.

Phajus maculatus.—This is an old and showy species which requires to be planted in peat and loam, potted as a terrestrial plant, kept in a warm stove, and liberally supplied with water in the growing season. It should not be allowed to become dry at any time.—G.

Odontoglossum Schroederianum.—This supposed natural hybrid between *O. tripudians* and *O. Pescatorei* first flowered in the collection of Mr. Measures at Streatham. The flowers yield a fragrance resembling that of vanilla; sepals and petals

white or yellowish, with numerous blotches of chocolate or purplish-mauve; lip white in front, the basal portion purplish-mauve. It thrives with *O. Pescatorei*.—W.

Eria obesa.—This is a pretty species which I have seen flowering in several collections this season. It is a free-flowering variety, which produces its small white blooms in great abundance. It is singular in bearing a quantity of green bracts on its stems beneath its pure white flowers.—W. H. G.

Lælia superbiens Quesneliana.—A very dark flowered variety of the Wand of St. Joseph, which flowered originally in the gardens of M. Quesnel, of Havre. It has also bloomed in the collection of Mr. Gaskell, of Liverpool. This variety is very much deeper in colour than the typical plant, and thrives under the same conditions.—H.

Cotonia peduncularis (*G. Graham*).—I am glad to see this plant in cultivation. It is a rarity, and should be carefully preserved. I saw the plant some years ago in the collection at Altona. It is a small growing species, with narrow, distichous, bilobed leaves. Its flowers, which are not showy, are quite destitute of a spur. The sepals and petals are greenish yellow, with a broad emarginate lip, which is deep blackish purple, with a green border and slightly hairy. It is said to be fragrant, but I could not find any trace of it in the flower sent me. It appears to be a rare plant in its native habitat, which is Ceylon, and it is also found in Malabar.—W. H. G.

Megaclinium purpuratum (*G. Bennett*).—This appears to be your flower. It comes from the Nun River, in W. Africa. It was from this district that the species was first described. Megacliniums are curious plants, with much the growth of a *Bolbophyllum*. There are some few species known, all, as far as I know, being natives of Africa. They have a curious sword-shaped flower-spike, furnished with leafy bracts, which bear the flowers along the midrib.—W. H. G.

Sarcantes crinaceus.—This is a plant which I have not seen for many years. It existed in the Messrs. Jackson's collection at Kingston some thirty years ago under the name of *Aerides rubrum*, and I suppose someone in Burmah has again sent it from its original home. It is a small-growing plant, and produces long spikes which are profusely clothed with numerous short bristles, and bear from twelve to twenty beautiful small flowers, which are white, suffused with rose in the sepals and petals, with a rose-coloured lip. The East India house and plenty of moisture in the atmosphere suit it admirably.—W. H. G.

THE EVILS OF GRAFTING.

THE following is from the English catalogue published in the autumn of 1888 by MM. Transon, the well-known French nurserymen:—

"**CRATÆGUS PYRACANTHA.**—Plants are grown on Quince; they give more fruit, and are not so cankered as when grown on own roots."—PHILOMELOS.

"* Just so; but instead of fruiting with us grafted in this way, the Quince is not going to be idle below, and is now shooting vigorously. That the Pyracantha fruits better on the Quince is a very doubtful statement, as the fruit could not come thicker than it does on plants on their own roots."—ED.

— A *Magnolia glauca*, for which I paid 3s. 6d. at a London nursery this spring—a small plant—fell to pieces as we planted it, i.e., the grafted part fell off.—R. O.

— Mr. F. W. Burbidge, Dublin, p. 91, says, "Fancy root-grafting hardy Clematises on a bottom heat of 70° to 90°, for example! So treated, plants are quickly produced in the nursery, but in private gardens die off by the thousand." Permit me to confirm this statement so far as my experience goes. In my garden there were several patches of dead wall that I was anxious to cover, and procured a selection of Clematises, first from one noted nurseryman and then from another. Both had the plants from a nurseryman who makes a speciality of them, and in every case they were root-grafted, as described by Mr. Burbidge, and in every instance

after a month's flickering existence in the open air they died, vexatiously disappointing me.—W. J. MURPHY, *Clonmel*.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 27.

A LARGE number of subjects of much interest were staged on this occasion, though but few persons attended to see them. Fruit made but a small display compared with the wealth of cut flowers sent by various exhibitors.

Orchids were fewer in number than usual, but they were of much interest, and the following first-class certificates were awarded by the Orchid committee:—

ANGRÆCUM CHAILLUNUM.—A very scarce species, having a pendent spike of small pure white flowers. From Mr. F. G. Tautz, Studley House, Hammersmith.

LÆLIA ELEGANS VAR. DUCHESS.—The sepals and petals lilac-purple, a rich purple spot upon the labellum, with a broad margin of whitish mauve with slight stripes of purple. Two other varieties were shown with it, *Blenheimensis* and *Marlboroughensis*, the last named the darkest of the two, but neither so deep in colour as the variety which was shown with them. From the collection of the Duke of Marlborough, Blenheim, Woodstock.

LÆLIA ELEGANS (Cook's variety).—The sepals and petals broad and of a bright mauve-purple colour, and having the rich-coloured lip of the species. From Mr. Cullinmore, gardener to Mr. Malcolm Cook, Kingston Hill.

CATASETUM TUBULARE LÈVE, a curious-looking, pale-coloured species from Mr. B. S. Williams, was awarded a botanical certificate of merit.

A goodly number of subjects of interest came before the floral committee, and the following first-class certificates of merit were awarded:—

TAXUS ADPRESSA VARIEGATA.—The youngshoots entirely suffused with silvery yellow. From Messrs Fisher, Son, and Sibray, Handsworth Nurseries, Sheffield.

PTERIS SERRULATA DENSE.—A very striking and distinct mossy Pteris of dense habit, with fine and most elegantly cut pinnæ. From Mr. H. B. May, Dyson's Lane Nursery, Edmonton.

CARLDOVICA PALMÆFOLIA.—A free-growing and handsome type, likely to prove very useful as a decorative plant. From Mr. B. S. Williams.

SARRACENIA DECORA.—A dwarf growing species, quite distinct from *psittacina*, having much more colour on the pitchers. From Mr. B. S. Williams.

SATYRIUM CARNEUM VAR. ROSEUM.—A hardy Orchid, with the flowers tinted with rose. From Mr. T. S. Ware, Hale Farm Nurseries, Tottenham.

WATSONIA ROSEA.—An old, but very handsome Cape bulb, with elegant spikes of rose-coloured flowers. Shown by Mr. T. S. Ware.

The following awards of merit were also made:—

DAHLIA (CACTUS) MARCHIONESS OF BUTE.—A seedling from the scarlet Juarez, pale ground, edged with pink and purple. From Mr. J. T. West, of Brentwood.

BOUVARDIA HOGARTH FL.-PL.—The flowers fully double and of the same colour as those of the type. From Mr. H. B. May.

RHODODENDRON OPHELIA.—One of the greenhouse type, having large and finely formed, creamy-buff flowers, with margins of soft pinkish-mauve. From Messrs. James Veitch & Sons, Royal Exotic Nurseries, Chelsea.

CHRYSANTHEMUM (POMPON) MAUD PITCHER.—A charming bronze sport from the yellow-flowered *Précocité*, remarkably free. From Mr. Geo. Stevens, St. John's Nursery, Putney.

HOLLYHOCK DELICATA.—Pale ground, suffused with soft fleshy pink. A full and symmetrical flower. From Messrs. Webb & Brand, nurserymen, Saffron Walden.

DAHLIA (SINGLE) F. L. TEMPLE.—An enlarged

and somewhat coarse form of the well-known *Paragon*. From Mr. T. S. Ware.

PAPAYER NUDICAULE SULPHUREUM.—A full, sulphur-coloured variety from Mr. T. S. Ware.

GLADIOLUS DUCHESS OF FIFE.—Light ground, beautifully feathered on the stout segments with bright purplish-crimson; and *Velso*, bright, pale carmine-rose, with white throat. Both very fine. From Messrs. Kelway & Son, nurserymen, Langport.

DAHLIA (CACTUS) PANTHEA.—Bright orange-salmon; very distinct and novel. *Crimson Globe* (show), a highly refined bright crimson self, an improved John Standish. *John Hickling* (show), a superb yellow self of the finest quality. *Reliance* (show), yellow ground, flushed with purple and distinctly edged with pale buff; and *Alice Emily* (show), orange-yellow, slightly tinged with cinnamon. From Messrs. Keynes, Williams & Co, nurserymen, Salisbury.

MISCELLANEOUS COLLECTIONS of plants and flowers consisted of a superb collection of some 200 spikes of *Gladioli*, together with show and *Pompon Dahlias*. *Gaillardias*, &c., from Messrs. Kelway & Son (awarded a silver-gilt Banksian medal). From Mr. T. S. Ware, *Pompon* and single *Dahlias*, the former including such fine varieties as *Gazelle*, *Admiration*, *Mignon*, *Juliette*, *Favourite*, *Lelia*, *Little Duchess*, *Isabel*, and *E. F. Jungker*. The single varieties included *Miss Jeffreys* (soft mauve, with a purple ring round the eye), *Duchess of Fife* (orange suffused with cinnamon, with a dark ring round the eye), and such *Cactus* varieties as *Panthea*, *Beauty of Brentwood*, *Empress of India*, *Henry Patrick*, and *Mrs. G. Reid*; and a collection of cut flowers, including *Lilium auratum rubro-vittatum*, *speciosum rubrum*, *pseudo-tigrinum*, *Tigridia conchiflora* and *speciosa*, *Iceland Poppies* in variety, *Gaillardias*, &c. (awarded a silver Banksian medal). Messrs. Paul and Sons, Old Nurseries, Cheshunt, exhibited cut specimens of trees and shrubs; *Paul's Cheshunt Scarlet Rose*, a Hybrid China of a remarkably free character, and cut specimens of hardy herbaceous plants, &c. (awarded a silver Banksian medal). Mr. H. B. May, Edmonton, showed a group of *Crotons*, *Ferns*, and *Bouvardias*, including *President Cleveland*, *elegans*, *Mrs. R. Green*, *jasminoides*, and double varieties (awarded a silver Banksian medal). Mr. Malcolm Cook sent a collection of *Lælia elegans* (awarded a bronze Banksian medal). A fine strain of dwarf German *Scabious*, of various colours, from Mr. R. Dean, Ranelagh Road, Ealing, was commended. Mr. Dean also showed *Victoria Ruby Aster*. From Messrs. James Carter and Co., seed merchants, Holborn, came an interesting collection of new *Queen Asters*, including white, copper-red, crimson, light blue, dark blue, and rose. From Mr. T. F. Dranfield, The Gardens, Valentines, Ilford, came a large collection of cut blooms of bedding *Violas*. Of white varieties there were *Mrs. Kinneer*, *The Bride*, *Mrs. John Clarke*, and *Countess of Hopetoun*; yellow, *Royalty*, *Crown Jewel*, *Wemyss Gold and Bullion*; dark, *Sir Joseph Terry*, *Acme*, and *Randolph the Laird*; dark blue, *Marvel*, *Archie Grant*, *Mrs. C. Turner*, and *True Blue*; blotched, *Countess of Kintore*, *Mrs. Wildsmith*, *Mrs. Mac-Master*, *The Mearns*, and *Mrs. Baxter*; lilac, *Bessie Clark*, *Dawn of Day*, and *Elegans*; edged, *Blue Beard*, white edged with blue; and *Goldfinder*, yellow edged with lilac.

From Mr. G. S. P. Harris, Orpington, Kent, came the following *Dahlias*: *Streamlet* (fancy), yellow, slightly suffused with buff in the centre and flaked with scarlet; *Canary Bird*, a pleasing bright yellow self; *Serenity*, creamy buff, tipped with bright reddish purple; and *Beauty of the Grove*, pale ground suffused with pinkish purple and tipped with purple.

From Messrs. James Veitch and Sons came a stand of cut blooms of greenhouse *Rhododendrons*, prominent among them being *Ophelia*, *Ne Plus Ultra*, bright orange-red; *Monarch*, *Prince Leopold*, *Thetis*, yellow; *Luteo-roseum*, *Hippolyte*, pale orange-red; *Maiden's Blush*, &c. Messrs. Veitch also sent flowering plants of *Lilium nepalense* and *Phaius philippinensis*.

Mr. B. S. Williams had two pale-flowered

Anthuriums, *Dracæna gracilis variegata*, and *Nephrodium pallidum cristatum*. From Mr. Jas. O'Brien, Harrow-on-the-Hill, came *Montbretia maculata*, the flowers somewhat larger than those of the ordinary type. Messrs. George Jackman and Son, Woking, sent *Clematis* *Mrs. Baron Veillard*, a pale pinkish variety of the *Viticella* type, wonderfully free blooming and highly effective, that failed to get the recognition at the hands of the floral committee its merits so richly deserved.

A fine collection of new show and *Cactus Dahlias* was shown by Messrs. Keynes, Williams and Co., and included of the former, in addition to those which received awards of merit, *Duke of Fife*, bright deep scarlet; *Admiral*, ruby-scarlet; *Baronet*, maroon shaded with purple; *Miss Fox*, pale ground heavily tipped with purple; *Majestic*, pale ground, tipped with lilac; *Tip-topper* (fancy), lilac, striped and heavily flaked with maroon and crimson; *Dandy*, buff, striped with primrose; *Sunset* (fancy), yellow, striped with purple; and *Comte de la Sausse*, dark lilac, striped with maroon. From Mr. A. J. Hollington, Forty Hill, Enfield, came a good flowering specimen of *Lælia crispa*.

The contributions submitted to the fruit committee consisted of a collection of early Apples from Mr. Cumming, gardener to Mr. A. H. Smee, Wallington, who had Williams' *Favourite*, *Gooseberry*, an early *Codlin* type; *Duchess of Oldenburg*, *White Juneating*, *Nonsuch*, *Stibburt*, *Early Julien*, *Mother Manks Codlin*, *Benoni*, &c. A cultural commendation was awarded. A bronze medal was awarded to Messrs. James Veitch & Sons for a collection of Plums. Of dark varieties, there were *Kirke's*, *Belgian Purple*, *Frogmore*, *Orleans*, *Large Black Imperial*, *Goliath*, *Prince Englebert*, *Mitchelson's*, *Diamond*, *Sultan*, *Angelina Burdett*, *Victoria*, and *Duke of Edinburgh*; light varieties, *Golden Drop*, *Washington*, *Lawson's Golden Gage*, *Green Gage*, *Deniston's Superb*, and *Early Transparent Gage*. Dishes of the following Apples, viz., *Early Russian*, *Beacon*, *Summer Thorle*, and *Lady Sudeley* were sent by Messrs. Veitch. Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, had two dishes of Apples and one of Autumn *Compôte* Plums. Several Melons were sent, but not one worthy of mention. From Mr. J. Church, The Gardens, Milford Hall, Suffolk, came a brace of large fruit of the giant *Capsicum*.

THE CHISWICK VEGETABLE CONFERENCE.

WHETHER this coming conference shall prove a great success or whether it shall prove a failure rests more probably with the gardeners of the kingdom, than with any other body of vegetable growers. Experience has shown that in all matters of this kind it is of very little use trusting to the help of the market growers, for they rarely make any efforts outside of their purely market labours. That in a representative conference of vegetables there should be a large representation of high-class market products seems natural, but here in England we somehow do things of this kind in such disjointed fashion, that it is hard indeed to obtain that unanimity of action which alone can lead to a representation of all sections of vegetable cultivators being secured. For the very special reason, therefore, that experience has shown the market trade to be unreliable, but also for the excellent reason that private gardeners after all are the best vegetable growers, it is obvious that to them must the promoters of the conference look for that help, without which the gathering must be a failure. Many gardeners may feel that, inasmuch as no prizes are offered for vegetables at the conference, the needful stimulus is lacking. That would be an unfortunate view to take of the affair, if for no other reason than that the Royal Horticultural Society does not only not expect as it is to reap profit from the conference, but rather is certain to lose money over it. What the society so generously undertakes in the interests of horticulture, therefore, thoroughly merits support on the same basis, and the gardeners of the United Kingdom have been appealed to to act generously in a matter which should have for them considerable professional interest. Vegetables are not the most attractive of garden products. At

shows they are too often relegated to the back benches or the small tents, and invariably come in at the tail of the schedule; and yet gardeners know that no garden department is with them of greater importance, whilst the production of such crops necessitates greater concern than do any others in the garden. Ostensibly only of secondary importance, really vegetables are to all gardeners of the very first importance, and, therefore, they should feel some sympathy with an effort which is devoted solely to the interests of vegetables. The revised schedules of the conference have at length been issued. That the schedules have been sent out thus late is no fault of the committee, which did its work of revision long since. However, there has been the earlier mention of the conference in the society's annual schedule of proceedings, and the press has from time to time drawn attention to it, so that some information as to its objects has been afforded. The revised schedule will perhaps help to make those objects now all the more clear, but the thing which is desired is to secure as wide a representation as possible of all vegetables in season. At the same time, it is desired that the samples sent should be in all cases the very best of their kind. It will be seen that for purposes of classification and selection the various vegetables have been grouped under proper heads, as, for instance, all Brassicæ, Spinach, &c., under the designation of green vegetables; all Gourds, Cucumbers, Tomatoes, Peas, Beans, &c., under the designations of fruits and pulse. Potatoes, Onions, Turnips, &c., come under the heading of tubers and bulbs; Carrots, Parsnips, &c., are termed tap-roots; and whilst all salads have a separate section, various things not exactly analogous, such as herbs, fungi, new vegetables, &c., are classed as miscellaneous. It is proposed to constitute small committees of experts, the majority being gardeners, to go through these sections, to select from them the best types for ordinary cultivation, which the schedule to some extent indicates, and also to award certificates of merit to the best samples of any vegetables staged. It will be seen that whilst no specific honour can be paid to any particular cultivator, the samples shown will receive some honour, just as they may be particularly meritorious. That fact will, it is hoped, encourage gardeners, or indeed any persons having good vegetables, to send of their best samples, beyond the desire which, it is hoped, may be widely dominant, to take part in a gathering which will be unique so far as vegetables are concerned. We may well also desire to show to the world something of the advance made with vegetables during the past twenty years. That there has been such advance no one can doubt, and the conference will offer an admirable opportunity for stock to be taken of that progression. Beyond the mere exhibition of vegetables and the educational value which must attach to the selection of the finest types and samples the literary portion of the proceedings should excite some interest. Various papers are promised to be read, and it is hoped that these will be practical, concise, and brief, as any lengthy essays will hardly receive the attention they may merit when time presses. Whilst the first day of the conference is to be devoted exclusively to the setting up of the vegetables, the selection of varieties or types, and certificating of samples, the two following days will be devoted to the papers and discussion, which should excite considerable interest. A novel feature, so far as these Chiswick gatherings are concerned, is the holding on the evening of the first day a gardeners' gathering and dinner, at which all who may care to attend will find a hearty welcome and a very friendly reception. This gathering has been organised specially in the interests of the country gardeners, who will, doubtless, be only too anxious to take part in the conference first and the gardeners' dinner later. No more popular or worthy chairman for the dinner could be found than Mr. H. J. Veitch, and he will be supported on the occasion by many of the leaders of horticulture in the metropolis. It may be objected that conferences are not promoted for festive purposes, and there is no denying that assertion; yet when

many men known to each other, perhaps well, perhaps only by reputation, are thus brought together for the same object, it is but natural that they should desire to have for once full and free intercourse with each other, and that the gardeners' dinner will afford.

A. D.

THE CO-OPERATIVE FLOWER SHOW AT THE CRYSTAL PALACE.

WHAT may be termed co-operative horticulture has evidently taken a deep hold on the toiling masses. This, the fourth meeting of the series and the second great National Co-operative Festival, was a decided advance on all its predecessors. There were more exhibits of higher quality, including a wider variety of subjects. The latter feature was especially noteworthy in relation to vegetables. Potatoes, Carrots, Turnips, Onions, Parsnips, Cabbages, one expects to find in quantity and of the highest quality at such shows, but seldom or never before were there staged by the industrial or working classes in one place such splendid collections of Peas, Broad, French, and Runner Beans, Cauliflowers, Cucumbers, Celery, Shallots, Tomatoes, Beet, Marrows. Leaving others to describe and descant on the merits and number of these and other exhibits, their number and excellence marked a decided advance among the masses of the appreciation of fruit and vegetables as food. Only ten years ago it would have seemed idle to prophesy that the labouring men and women of today would grow and eat in quantity such unknown and uncared-for vegetables as Beetroot, Vegetable Marrows, Shallots, Spinach, or Tomatoes. And yet there they were in quantities at the Crystal Palace on the 17th. Singularly enough, too, Spinach was the weakest of all the vegetables represented, about four dishes being staged, while there were twenty-five lots of Tomatoes, over fifty of Beet, and eighty pairs of Vegetable Marrows, all fit for use and of good edible quality. Those figures mark a veritable if not violent revolution in the food habits of the people within a very few years, and such changes are all in the right direction.

We have it on the highest authority that as a man thinketh in his heart so is he. It is almost equally true that man is very largely the product of the food he eats. Few expect great intellectual culture from a dietary of pork, Cabbages, Broad Beans, varied with hard dumplings and raw Onions in lieu of pork for, say, four days a week, but raise and vary the dietary with the choicer products grown by the co-operators and shown at the Crystal Palace, and each variation and advance in the grade of refinement will not only render our daily bread more pleasant, but more wholesome, strengthening, stimulating, and refining alike to body and mind.

Change of food is as necessary to health of body and soundness of mind as change of air, and, fortunately, through the extension of cottage gardening and allotments and the fostering of the practice of horticulture through the press, and by means of such national festivals of labour, such changes are now brought within reach of large numbers of the working classes.

Much, however, yet remains to be done, and, fortunately, in regard to the acquisition of plots of ground for *petite* or garden culture, it is becoming more true every day that where there's a will there's a way. The amelioration of our land laws, though slow, is surely coming, and the tendency of the cultured and political power of the age is in favour of including a garden as the outer court, workshop, or temple of every home. And the time may be nearer than many suppose when no cottage will be considered in habitable condition nor fit to live in unless provided with a garden of from an eighth to a quarter of an acre. Then will every working man and woman possess the means of growing a very large percentage of their own food. One of the first results of this new sense of power and pleasure would be the indefinite multiplication of garden products of all descriptions. For each family drawing its supplies from its own garden

instead of from public markets no limit would be imposed on individual tastes and idiosyncrasies. Hence one of the most beneficent sanitary results of the indefinite extension of home gardens would arise from the additional variety and freshness of the food supplies.

D. T. F.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

PLUM CONGRESS, 1889.

AT a meeting of the council of the Royal Caledonian Horticultural Society, held on the 7th Aug., 1889, it was resolved to hold a special exhibition and conference on Plums, in connection with the Society's autumn show, in the Waverley Market, Edinburgh, on the 11th and 12th September, 1889. While collections of Plums are solicited from all parts for comparison and instruction, the chief object of the conference is to utilise the favourable opportunity presented this season by the fine crop of Plums in Scotland for gaining useful information about them, comparing their merits, and correcting their nomenclature. All who are interested in the growing of Plums are therefore invited to send as complete a collection as possible of the varieties (ripe or unripe) grown in their district; and as the object is solely educational, there will be no competition and no prizes. It is not necessary that the fruit should be grown by the sender, but those sending collections from a district should specify the place where each sample has been grown. No limit will be put on the number of varieties which any contributor desires to send, but the number of fruits of each variety should be from three to six, according to circumstances. The council are anxious to procure a complete representation and record of the varieties of Plums grown in Scotland; therefore each variety should be distinctly labelled with the name, or names, under which it is known in the locality, and each collection should be accompanied by all the information possible about the climate, altitude, exposure, soil, methods of cultivation, and other particulars, which will be of much value to the committee in drawing up their report. For this purpose forms will be supplied to all growers on application to the secretary. The specimens being strictly for examination and instruction, they must necessarily be at the disposal of the council. In the case of a new or unknown variety, specimens of the fruit should be accompanied by a bearing branch, with fruit and foliage, to show its character and bearing qualities. Intending exhibitors must give notice to the secretary or assistant secretary in writing not later than Wednesday, 4th September, stating the number of varieties they intend to exhibit. Space will be allotted and plates provided by the society. The council will pay the carriage of any Plums sent to the exhibition and conference, and will also see that they are carefully staged for the inspection of the committee; but they will not be held responsible for any error, damage, or loss of fruit consigned to them, although all possible care will be taken of it. Collections of Plums sent by rail, or otherwise, must be addressed to Mr. William Young, assistant secretary, 18, Waverley Market, Edinburgh, and forwarded so as to be delivered not later than Monday, 9th September. Exhibitors staging their own fruit will do so on the morning of Wednesday, 11th September, and all must be staged and the hall cleared for the committee by 10 o'clock that morning.

Each exhibitor will receive a ticket of admission to the exhibition.—MALCOLM DUNN, *Convener of the committee.*

Book on bulbs.—There is no book on the subject except one by D. T. Fish, and that, we believe, is out of print.

Names of plants.—*R. Butler.*—*Browallia viscosa.*—*E. H. Marple.*—*Disa grandiflora.*—*G. Stemwell.*—*Gladiolus dracecephalus.*—*Vulcan.*—A very fine form of *Cattleya Mossie.*—*S. E. D.*—*Calendula officinalis.*—*M. S.-1.* *Hypericum calycinum*; 2, *Hypericum patulum.*—*G. R.*—*Catantemum globiflorum.*—*J. Fielding.*—Your flowers appear to be those of *Vanda Bensoni*, with tessellations in the sepals and petals.

WOODS & FORESTS.

FORESTRY.

It is a well-known fact that draining and planting barren ground are the means of improving the climate and promoting the health of the lower animals. As a proof of this, it will always be found that cattle, sheep, deer, hares, rabbits, and winged game are in the healthiest and best condition where shelter has been provided and stagnant water removed by drainage. Wet ground has a tendency to promote late spring frosts, which destroy surface herbage, and not only render it less nutritious, but actually dangerous in many cases as food. Inland districts of the country at high elevations are apt to suffer more in this respect than marine situations, and for this reason that the sea air has a beneficial effect in counteracting the evil influence of spring frosts for a distance of many miles from the shore, so that vegetation of all kinds is less liable to be checked in its growth in early summer, and is therefore safer and of much more value for feeding purposes. Sportsmen are busy at present shooting grouse and other game on moor and mountain, and in some inland districts of the country the birds have suffered considerably from what is called the grouse disease, which is occasioned by the birds eating frost-bitten Heather. At any rate, the crops of birds after death generally contain the remains of such that had not been digested. It is a curious fact that the grouse in Fifeshire have never, to the best of my knowledge, been affected by this disease, and this I attribute entirely to the influence of sea air. Fifeshire represents an oblong piece of land, bounded on the east by the North Sea, on the south by the Frith of Forth, and on the north by the Frith of Tay; hence the whole county is more or less under the influence of the sea breeze, which renders the climate more genial than that of inland districts. But that draining, planting well-defined groups of trees, and judicious Heather-burning promote the increase of healthy game, I have abundant proof. When draining and planting belts and groups of trees on bog land in Ireland that contained no game of any kind but snipe and wild ducks, I found that after shelter was established and the ground rendered dry and firm, pheasants, partridges, and woodcock gradually made their appearance, and by a little care their numbers increased rapidly. As Heather is the principal food of grouse and black game, it should occasionally be burned with the view of promoting young growth, as the birds seem to prefer young stuff to old woody scrub. Sportsmen would do well to give all contemplated improvements of this kind due consideration before commencing to put them into practice, and there is no period during the year that this can be done so advantageously as when they are upon the ground themselves shooting. Although foresters and gamekeepers have generally a pretty good idea of what ought to be done in the way of planting and Heather-burning, yet they can always go to work with better confidence when they know that they have the sanction and approval of the proprietor.

It has sometimes been suggested that the planting of trees in such localities has a tendency to increase the rainfall and prove rather destructive to game than otherwise; but such assertions are ill-founded and not borne out by actual experience and observation. That trees do increase the rainfall when planted on mountain-tops by attracting and breaking up the floating vapoury cloud in the air no one will deny, but then it should always be kept in view

that although such is the case, yet the roots and fallen foliage of the trees soon form a thick bed of organic matter on the surface which sucks up and husbands the sudden excess of moisture and parts with it gradually as the trees themselves and other plants in their vicinity require it for support. The planting of shelter belts and groups of trees here and there on barren heather ground has also a great tendency to mitigate or lessen the risk of sudden floods by preventing the water during a deluge of rain from rushing suddenly down the sides of hills and overflowing the haughs and best pasture grounds at a lower level. The best way to neutralise such a state of things is by judicious tree planting. Thin rocky ground, however, can be improved by merely sowing the seeds of some of the hardy species of trees on the spots where they are to remain. The ground in this case requires very little preparation, further than having it properly fenced until the young trees are properly established. Scotch Fir, Birch, and Aspen Poplar are among the best trees for such situations, and as the seeds can generally be collected upon the estate, the cost of forming such groups is very trifling.

J. B. WEBSTER.

THE WHITE PINE WEEVIL.

(PISSODES STROBI.)

THIS insect causes considerable damage in gardens and on grounds where Evergreens are grown for ornamental purposes; not only White Pines are attacked, but other species of Pine and Spruce suffer equally. A letter recently received from Warren County, New Jersey, describes the injury so well that I reproduce parts of it. "Many of my Evergreens—Spruces especially—are much infested by a borer which seems to deposit its eggs at the base of the new shoots and leaders, and spreads downward, killing all of the tree that is above it. . . . In this section every White Pine has lost its leader. I do not think I have seen a single exception. Is this done by the same insect that attacks the Spruces, or is it a different one? It is most provoking to see one's best and most promising trees cut down in this way." . . .

The letter was accompanied by specimens of infested Spruce twigs, which showed the characteristic work of the White Pine weevil (*Pissodes Strobi*). The insect is a well-known one, and its history was first made out many years ago by Dr. Harris, who thought it required more than a year to come to maturity. Dr. Fitch afterwards gave a very full account of the species, giving it a period of one year to undergo its transformations. Other writers have mentioned the insect at intervals, until most recently Dr. Packard has written on the subject and has recorded the species from April to September, his dates leaving little margin for intervals. Dr. Packard gives one brood for the species, the generalised account being that the imago appears in spring or early summer and oviposits soon after. From my collecting and observations, I believe there are in the latitude of New York two broods annually. The first of these issues as imago early in spring, say the latter part of April or early in May, ovipositing in May, the larvæ of the second brood coming to maturity the latter part of July, the imago issuing during early August and ovipositing during that month.

The larva is a white grub, about one-third of an inch long, with a horny yellow head, slightly curled as it lies in its cell. When full grown it forms an oval cell either just under the bark or in the pith, and changes to a white pupa, and very soon after to an imago. The imago is an oblong-oval and rather narrow weevil, about a quarter of an inch long, of a dull, dark chestnut colour, with two dots on the thorax, the scutellum and a short irregular band back of the middle of the wing covers white, the wing covers also variegated with a few patches of tawny yellow. The eggs have not as yet been described. They are deposited on the leaders and other small twigs and branches—sometimes also on the trunks

of old trees—at very short intervals. The larvæ eat very little more than twice their own length into the wood or under the bark, and a single comparatively small shoot will harbour thirty to forty of them. Of course the smaller twigs thus interrupted in growth are damaged, die, and the shape of the young trees is spoiled, unless the owner believes—as some do—in small, bushy trees, in which case they are no serious drawback, since they never seem to kill larger branches or trees.

No satisfactory remedies for borers have yet been discovered. Their mode of life is such that they are at no time in position to be attacked by insecticides. This weevil has its parasites that keep it in check somewhat, and some of our smaller birds seek out the larvæ and pupæ under the bark and feed upon them. The only way of checking their ravages when they appear in parks is to trim out and burn all infested branches and twigs very early in spring, and again about the middle of July. In this way the larvæ will be prevented from coming to maturity, and there will be no imagos. So long as there are other unpruned trees about, this remedy is palliative merely; but still so many will be destroyed that a much larger proportion of leaders will escape, and the injury will be considerably reduced. — *Garden and Forest*.

NATURE'S REVENGE.

OF the evil consequences which have resulted from the reckless destruction of forests in America, the Hon. George P. Marsh writes as follows:—

"With the extirpation of the forest all is changed. At one season the earth parts with its warmth by radiation to an open sky; at another it receives an immoderate heat from the unobstructed rays of the sun. Hence the climate becomes excessive, and the soil is alternately parched by the fervours of summer and seared by the rigours of winter. Bleak winds sweep unresisted over its surface, drift away the snow that sheltered it from the frost, and dry up its scanty moisture. The precipitation becomes as irregular as the temperature; the melting snows and the vernal rains, no longer absorbed by a loose and bibulous mould, rush over its frozen surface and pour down the valleys seaward, instead of filling a retentive bed of absorbent earth, and storing up a supply of moisture to feed perennial springs. The soil is bared of its covering of leaves, broken and loosened by the plough, deprived of the fibrous rootlets which held it together, dried and pulverised by sun and wind, and at last exhausted by new combinations.

"The face of the earth is no longer a sponge, but a dust heap, and the floods which the waters of the sky pour over it hurry swiftly along its slopes, carrying in suspension vast quantities of earthy particles which increase the abrading power and the mechanical force of the current, and, augmented by the sand and gravel of falling banks, fill the beds of streams, divert them into new channels, and obstruct their outlets. . . . The earth, stripped of its vegetable glebe, grows less and less productive; gradually it becomes altogether barren. The washing of the soil from the mountains leaves bare ridges of rock, and the low lands breed fevers and other diseases, so that the earth is rendered no longer fit for human habitation.

"The vengeance of Nature for the violation of her harmonies, though slow, is sure; and the gradual deterioration of soil and climate is as certain to result from the destruction of the woods as is any natural effect to follow a cause; and the immediate cause of river inundations is such a flow of water into the river beds as is faster than these channels can discharge it, owing to obstructions caused by human agency in removing the natural checks to a rapid drainage, that is, the destruction of the hill and mountain forests in which these streams have their sources."

BOOK RECEIVED.

"Timber, and some of its Diseases." With illustrations. By H. Marshall Ward, M.A., F.R.S., F.L.S., Professor of Botany at the Royal Indian Engineering College, Cooper's Hill. London: Macmillan and Co.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

FRUIT GARDEN.

W. COLEMAN.

THE FRUIT CROPS—WHY THE FAILURE.

ALTHOUGH the reports in reply to the circular issued by the editor of THE GARDEN slightly differ and the opinions as to the cause of failure amongst Apples and Pears vary, the majority of practical fruit growers seem to think the immature wood and buds of 1888 the prime cause of imperfect fertilisation. Some few whose opinions are worth attention blame the grub, and grub, no doubt, like all parasites, made sad havoc amongst trees greatly debilitated, first, by defoliation, then by a low, cold, sunless temperature last year; but then thousands of trees long before this pest put in an appearance had cast their petals within a few hours after they were open, whilst others which looked promising in March never opened at all. Had this imperfect flowering been confined to fruit trees to which grub I may say is indigenous, why then I might have divided the blame between rollers and loopers and the spell of hot weather late in May and early in June; but this is by no means the fact, as we find choice Rhododendrons, Clethras, and a host of flowering shrubs and trees were equally shy. But why were they shy and in many instances quite flowerless? Simply because the cold, sunless season of 1888 terminated before the buds were perfectly formed. The winter, again, was mild and open, and yet young Peach, Nectarine, and Apricot trees in nurseries suffered to such an extent that tens of thousands which should have been sent out were so severely crippled, that nurserymen who value their reputation cut them back or cast them upon the rubbish heap. The too much heat theory started by some humorous market gardeners in Kent had nothing to do with these failures, neither did it affect the Apricots in the chimney corner to which "D. T. F." clings in his remarks (p. 177). Facts, nevertheless, are stubborn things, and this I maintain is one, but I can adduce more. In one of the hottest gardens in Bucks, lying on a bed of dry soil and hemmed in by chalk hills, the Apple crop is profuse, the fruit large, clean, and perfect. In the gardens at Appley Towers, in the Isle of Wight, a warm spot in May and June, the Apple trees are loaded to breaking down with magnificent fruit. At Gosport, on the opposite side of the water, Mr. Groom's trees, Apples and Pears, are marvels of fertility. Near Truro, in Cornwall, Apples, Pears, and Plums are good, and I might give other instances, but these gardens being situated in the hottest parts of the kingdom, I will leave this part of my subject "packed into a handy and plausible nutshell," and proceed to inquire how it happens that Peaches are a success where in the same garden, possibly on the same wall and in similar compost, the Apricot has failed. Well, professional gardeners, as a rule, manage their Peach trees much better than they do their Apricots. Indeed, I question if wall Peaches ever were so well managed, as we find those who have won their spurs and intend keeping them root-pruning annually, limiting the root-run to the wall path; eschewing all animal manure, unless it be for mulching; detaching their trees and washing the wood and walls

every winter; pruning immediately after the last fruit is gathered; training thinly on the extension principle, and securing the earliest spring growths by the timely use of insecticides. These are a few of the cardinal points which have raised Peach culture to a fine art; but how many Apricots on the same wall receive identical treatment? Not one in a hundred. I know a few good gardens in this locality in which large, fine trees are well managed, and the crops this year have been good; but the majority of trees are crowded with spurs, their roots get into the rich vegetable borders, root-pruning is a perfunctory sort of business, they are but seldom detached from the walls, and grub, which destroys the best of the foliage, is a permanent institution. When Apricots are as well managed as Peaches, the crops, barring spring frosts when they are in flower, will be equally satisfactory. Many cottagers in this locality, whose trees have not had the especial benefit of the chimney corner, have gathered heavy crops of fruit; small, it is true, as few of them think of thinning, the secret of their success in securing a good set hinging upon a poor root run.

Returning to Apples, there is one point which "D. T. F." seems to have overlooked, and that is the enormous crops of immature fruit which the trees produced last year. These heavy crops so completely exhausted the trees, that had the autumn been hot enough to mature the flower-buds, this with many varieties would have been the biennial resting summer. The trees, however, in many instances formed the flower-buds, but Nature shut off the supplies, and they could not finish the internal arrangement. In others they got a step further, actually forming pistil, stamen, and placenta, but they were so completely exhausted by the effort, that, still further enervated by a mild winter, they had nothing left to work upon. Caterpillar last year, I venture to repeat, struck the first blow, heavy crops, which as yet we have not learned the wisdom of thinning, forced it home, and a cold, sunless summer, followed by a mild, undecided winter propitious to insects, settled our fruit prospects where the buds were not well ripened. The present summer certainly is an improvement upon that of 1888, and light cropping, where it has not fostered grossness, is favourable to recuperation, and yet the same misfortune may occur again unless we have a dry, warm autumn, followed by a sharp winter.

— I see that "D. T. F." (p. 177) is not quite prepared to take for granted the "immaturity of wood theory" as the sole cause for the failure of the fruit crops generally. According to the numerous reports furnished by your correspondents, there certainly appears to be a great deal of difference in the productiveness of different kinds of fruit trees, and even in the same varieties, which the immaturity of the wood theory does not properly account for, nor indeed does any theory as yet put forth.

Mr. Goodacre seems inclined to attribute the failure of the crops to a scarcity of insects, amongst which, I presume, he includes bees principally. His theory may be right, but unfortunately for him it does not hold good in all places alike. As an old bee-keeper and close observer of all their actions, I am inclined to think that their usefulness as aids in the fertilisation of fruits has been greatly exaggerated. Supposing Mr. Goodacre's insect theory to hold good, then assuredly I ought to have had very full crops of fruit here, as there was no scarcity of bees with me. I had seven fairly strong stocks very busily working among the trees all the time they were in bloom, and yet, with one or two exceptions, the failure of crops with me is complete. Three of the largest Apple trees in the orchard are

the variety Wellington, and stand within a few yards of the seven stocks of bees. The trees were gorgeous with blossom amongst which the bees incessantly worked, yet there is not a single Apple on the trees.

To return to "D. T. F.'s" heat theory, I think there is more in it than at first sight appears, and ever since he first propounded it I have been trying to trace as having some connection with it a theory of mine which I have held for many years, namely, a sufficiency or insufficiency of the nectar to be found in most flowers.

One of the stock arguments of the leading expert bee-keepers, and one used as an inducement to take up bee-keeping, is, that there exists a great wealth of this nectar in most flowers ready to be collected and converted into honey by the bees, which commercially would be worth ever so much to the keeper of bees. They further say that no assignable cause can be traced for the existence of so much nectar in the flowers, unless it be to specially attract insects and by their abstracting of the nectar to assist in the fertilising of the flowers—a prettily enough built-up theory.

My contention, and one that I have combated pretty freely with my bee-keeping friends, is, that Nature never erred so absurdly as to design and create her products in such a haphazard fashion and that all she has created in plant life was designed solely for the use of and in the economy of the plant itself, regardless of secondary or external aids. In this light I look upon the nectar of flowers as designed solely for the use of, and the necessary support and nourishment of the embryo fruit up to the stage of its sure and perfect fructification.

Should the nectar through any accident be suddenly withdrawn from the flower, or dried up through excessive heat and drought, or, what is more probable, its flow stopped or partly stopped, the base of the embryo fruit becomes also dried up, the pistil droops and withers, and the flowers drop off through barrenness. May not the excessive heat referred to by "D. T. F." have dried up the nectar of the flowers, or more probably have arrested its flow in sufficient quantity, and thus, assisted by the already enfeebled flower-buds through immaturity, both combined have been the cause of the wholesale dropping of the flowers? I am not a sufficient vegetable physiologist or chemist to trace out more clearly this theory of mine regarding the sufficiency or insufficiency of the nectar, but I believe that this want of nectar has something to do with the scarcity of the fruit crop this year.

That there was but a poor flow of nectar in the fruit blossoms was proved by the bees bringing in such little store from them, not sufficient to keep them going, as I had to feed mine with syrup all through May. As a further bearing on the flow of nectar in flowers, I may mention a case that came under my observation in the hot dry summer of 1877, and which I duly noted. During the blossoming of the Lime trees, of which we have a large avenue or two here, in July of that year, my bees were as busy as could be on them for six or seven days, and I was happy in the belief that I should be able to take full crates of Lime-tree honey from the hives; but strange to say, when I went to take the honey after the Lime trees had done blooming there was barely a single section to take from ten stocks, and my neighbouring bee-keeper—our late rector—had scarcely any to take from his twelve stocks. We put the cause down to the Lime flowers secreting little or no nectar consequent on the excessive heat and drought. I was curious to see what sort of seed clusters there would be on the trees after such an experience of no nectar in the flowers, and surely enough there never was such a dearth nor absence of seeds on the Lime trees as I witnessed that year; here and there a single pod, whereas in most favourable seasons there are usually found from four to six to a bunch. I called the attention of our rector, who by the by was a very expert bee-keeper, to the absence of seeds on the trees, and argued over with him again my theory of the especial purpose of the nectar of

flowers, and he thought there might be something in it and duly chronicled the fact.

This spring we were very much troubled with ants in our early Peach house, and to get at the nectar of the flowers they would clip away both anthers and pistil to get into the flower. In many instances, too, I observed them cut a hole in the base of the flower and sip the nectar through the hole made, and this they would do without damaging any of the organs of the flower and before they had reached the stage of being fertilised. In every instance where I marked the flower that they thus made a hole in and extracted the nectar from, the bloom was abortive and dropped off, clearly showing that the nectar was necessary to the perfect fertilisation of the flower.—J. KIPLING, *Knebworth*.

* * In conversation with a market gardener lately as to the failure of the crops, he advanced the theory of the intense heat just at the time the flowers were at their best being the reason of the scarcity of Apples this year. He found on close examination at the time that the flowers in many cases were quite shrivelled up.—ED.

Peaches on open walls.—It may interest some readers of THE GARDEN as well as Mr. Coleman to know that we have a Peach wall in these gardens 100 yards in length containing twenty trees, all of which are carrying a heavy crop. I never saw Peach trees set their fruits so thickly. We have pulled off thousands, the last time quite a bushel. Whilst the trees were in bloom we went over them with a camel's-hair brush every day for about a week. We took this precaution, as the blooms appeared weak. The trees are healthy and have made more growth than usual. The soil is a limestone marl, and the wall on an incline, well up to the sun. While in bloom we protect them with netting, which is let down on all cold nights, but pulled up about 8 a.m., unless the day is cold, when we allow the curtains to remain down. The trees are also protected with glass coping. We remove the glass after the fruit is gathered, and replace just as the trees come into bloom. Like Mr. Coleman, we cleanse the trees before they come into bloom and also directly after blooming, consequently insects are unknown, but as a precaution we syringe once a week with a solution of Gishurst and soft soap. When the young shoots commence to grow freely insects are rarely troublesome. The border, always well mulched, is kept sacred to the roots. We also give a good watering about every three weeks and wash the trees on fine evenings with the engine. Two years ago we gathered fruits of Barrington each 11 ozs. in weight. All the fruits grow to a large size and are highly coloured. We grow most of the popular varieties, but Royal George is rather subject to mildew.—A. YOUNG, *Abberley Gardens, Stourport*.

Apple Bramley's Seedling.—The fruit prospects published annually in THE GARDEN are interesting and instructive, but too often discouraging, especially so this season, from the accounts respecting the Apple crop given by your many correspondents from various parts of the country. The above-named Apple is not so well known as its merits deserve. Since trees of this Apple came into bearing hereabouts many years ago, they have never been known to fail to produce a crop of fruit. This year over a somewhat extended area I have not been able to find a single instance of failure, as all the trees, whether as isolated specimens in cottage gardens or planted in rows or groups in orchards, are alike laden with large, handsome fruits, the forwardest of which are already marketable. As the fruits, however, attain a large size (some specimens weighing upwards of 20 ozs.), it is not usual to commence gathering before October. I mention the time of gathering the fruit, so that anyone living in or passing through Notts and interested in Apple culture may call at the Southwell Nurseries (H. Merryweather's) and see for himself. The locality is not a favoured one, as all other varieties of Apples in comparison are more or less a failure. In the Southwell Nurseries are two other exceptions: Russian (Duchess of

Oldenburg) and Domino, of both of which Mr. Merryweather speaks highly. Russian is well known, but Domino, like Bramley's Seedling, is worthy of more extended cultivation. It is as early as the Keswick, is vastly superior in size and appearance, and an excellent cooking variety. Domino bears well both as a standard and a bush tree, while Bramley's Seedling is essentially an orchard Apple, being a robust grower. It does not matter how large the crop of this and other Apples may be, Bramley's Seedling always commands a ready sale, for as soon as it is put on the market, the public will buy it in preference to all other Apples. Its season extends from October to the following May and June, keeping firm and maintaining a good flavour to the end.—H. P.

SELECTION OF FRUIT TREES.

Will you kindly oblige me by giving the names of the most suitable varieties to plant and the best stocks for them? I intend planting over 1000 cordon and bush Pear trees. The soil is light loam on gravel.—T. C.

What are the best six cordon Cherry trees for wall facing north?—May Duke, Bigarreau Napoleon, Belle d'Orleans, Elton, Governor Wood, and Late Duke or Morello. Mahaleb stock for low wall, free stock for very high wall.

What are the best six sorts of cordon Plums?—Angelina Burdett, Belgian Purple, Coe's Golden Drop, Jefferson's, July Green Gage, and Kirke's or Czar.

What are the best six sorts of cordon Pears?—Williams' Bon Chrétien, Louise Bonne of Jersey, Thompson's, Beurré d'Amanlis, Marie Louise d'Uccle, and Beurré Clairgeau.

What are the best twelve sorts of cordon Pears not to ripen before October for wall facing west?—Marie Louise, Glou Moreceau, Winter Nelis, Josephine de Malines, Beurré Superfin, Doyenné du Comice, Pitmaston Duchess, Knight's Monarch, Thompson's, Brown Beurré, Easter Beurré, Emile d'Heyst, Bergamote d'Esperen, and Olivier de Serres. Pears budded or grafted very low on Quince stock will do well on Reading loam. Mulch well with good manure.

What are the best twenty-four sorts of cordon Pears for exhibition for wall facing south?—August—Jargonelle, Williams' Bon Chrétien, and Souvenir du Congrès. September—Beurré Superfin and Louise Bonne of Jersey. October—Marie Louise, Pitmaston Duchess, Brown Beurré, Beurré d'Amanlis, Thompson's and Emile d'Heyst. November—Beurré Diel, Marie Louise d'Uccle, Doyenné du Comice, Glou Moreceau, Winter Nelis, Durondeau and Nouveau Poiteau. December—Knight's Monarch, Passe Colmar, Beurré Rance, Hacon's Incomparable, Josephine de Malines, and Nouvelle Fulvie. Christmas to March—Easter Beurré, Bergamote d'Esperen, Marie Benoist, and Zephirin Gregoire.

What are the best six sorts of cordon Pears not to ripen before October for trellis facing south?—Beurré Superfin, Marie Louise, Pitmaston Duchess, Winter Nelis, Josephine de Malines, Doyenné du Comice, and Thompson's.

What are the best six sorts of cordon Pears for trellis facing north?—*Williams' Bon Chrétien, *Louise Bonne, *Hessle, *Beurré de Capiaumont, Beurré Hardy, and Beurré d'Amanlis. Those marked (*) are the varieties most likely to succeed.

What are the best six sorts of cordon Pears not to ripen before October for trellis facing east?—Marie Louise, Marie Louise d'Uccle, Williams' Bon Chrétien, Thompson's, Hessle, and Louise Bonne.

What are the best six sorts of cordon Pears to ripen after October for trellis facing west?—Souvenir du Congrès, Beurré Superfin, Louise Bonne, Marie Louise, Thompson's, Doyenné du Comice, and Winter Nelis.

What are the best six sorts of cordon Peaches for under glass?—A Bec or Alexander, Bellegarde, Alexandra Noblesse, Grosse Mignonne, Stirling Castle, Violette Hâtive, and Walburton Late Admirable.

What is the best Nectarine under glass (espalier)?—Lord Napier.

What is the best Apricot under glass (espalier)?—Peach or Moorpark.

What are the best twelve sorts of bush Pears in open not to ripen before October, planted 4 feet apart?—Louise Bonne of Jersey, Williams' Bon Chrétien, Marie Louise, Josephine de Malines, Thompson's, Pitmaston Duchess, Beurré Superfin, Beurré Hardy, Van Mons Léon Leclerc, Winter Nelis, Beurré Clairgeau, and Doyenné du Comice. Four feet each way is too close for bush Pears on the Quince. The Quince stock is the best.

What are the best twelve sorts of bush Pears in open not to ripen before October, planted 6 feet apart?—Repeat the above, and also use Quince stock.—W. C.

Gooseberries as espaliers.—To see Gooseberries grown as espaliers is rather a novelty, but the system is adopted in a garden of my acquaintance with undoubted success. The trees are trained on wires in the usual espalier fashion, and annually produce an excellent crop of exceptionally fine flavoured fruit. Being grown especially for dessert, the small varieties are given first place, as these are decidedly preferable for that purpose. Ironmonger and Warrington are two of the best red-skinned varieties that can be grown for dessert. In green kinds there are few to beat Hedgehog and Green Walnut; while among the yellows, Rockwood and Golden can be recommended. The fruit of neither of these kinds is very large, though if the trees are grown on the above system, or as cordons on walls, I find the size of the fruit is slightly increased without deteriorating in flavour.—C. COLLINS.

Judging Pears.—At the Taunton Show held recently the first prize for the best dish of dessert Pears was given to a dish of Windsor, although there was in competition with it a more handsome dish of the Jargonelle. I have frequently recommended the Windsor as a market Pear, but I never before saw it take such a prominent position on the exhibition table when the Jargonelle has been shown against it. I am well aware that the Windsor develops a much finer flavour in the west of England than it does in the midland or northern counties, but in no instance before have I known it to be superior to the Jargonelle in flavour. Those who only know the Windsor with its gritty flesh and hard core, which are characteristic of the sort when grown as a standard on a cold soil and in a less favourable climate than the west of England, will probably be more surprised at the decision of the judges in this case than I was. I know that sometimes the Windsor as grown in the west of England runs the Jargonelle very hard in point of quality.—J. C. C.

High flavour in Pears (p. 166).—Jargonelle Pears gathered from a tree 45 feet to 50 feet in height and 6 feet in girth can hardly fail to be good, as the soil evidently suits it, and having mounted many years ago beyond the reach of the busy pruner, it manages the arrangement of its wood and flower-buds in Nature's own primitive way. The fruit being small is by no means surprising, neither need the owner regret it, as normal size, especially in Pears, is one of the best tests of quality. The fruit, as a matter of course, must be well grown and exceed mediocre dimensions; but beyond these points of importance no one who wishes his fruit to be enjoyed need go, as fat Pears fed up with manure and rich liquid, like obese Melons, are sure to be flavourless. When extra fine fruit is obtained from trees growing in sound healthy loam there is no deterioration; in fact, under such conditions, the flavour is supposed to be perfect, especially when early varieties are cultivated as pyramids, bushes, or standards. All the August and September Pears are grown more or less against walls, not because they require protection, but for the sake of earliness, and in all cases the quality is inferior, the brighter, smoother skin, and larger size being more than counterbalanced by a flatness in point of flavour. The Jargonelle is no exception, as we often see enormous golden fruits fermenting and rotting at the core before they are taken from trees against hot

dry walls; whilst others, half the size, russet, and rich will keep for some time after being gathered. Where the Jargonelle must be grown against a wall, I would choose the south or west side of a house, barn, or building for the stem; but the main branches from which I should expect the best fruit should turn sharp corners, traverse window frames and mount gables on the true extension principle so admirably carried out by country house occupiers within the past century. Not more than a year ago a question was raised as to the adaptability of the Jargonelle for culture as a standard when my lamented friend, Mr. Barker, sent up some fine examples of fruit for engraving, and threw much light upon the subject. It is not a little remarkable that, as in York, large standard trees of the Jargonelle are found growing in almost every old town in the kingdom, especially if it boasts of a priory or cathedral, and even as far north as Perth, in Scotland, it may be seen wherever there is a space of ground sufficient to plant it.—W. COLEMAN.

WORK IN FRUIT HOUSES.

PINES.

As summer fruiters by this time have been disposed of, the suckers of ordinary varieties only remaining to be dealt with presently, the house should be cleared, cleansed, and made ready for the next batch of plants. September years ago was the accepted month for the great biennial or autumnal campaign, when all other operations were set aside for the Pines; but, independently of the fact that very few English Pine-apples are now grown, the one-shift system, combined with the modern method of potting on small batches at frequent intervals, has lightened the work considerably. If the early starters, now approaching their season of rest, are to occupy this compartment, it is questionable if the plunging-bed should be disturbed beyond levelling, as the slightest movement of the plunging material will revive the heat; whereas, in order to secure rest it should steadily decline until by the middle or end of August it barely touches 75°. I take it for granted that these plants have filled their pots with healthy roots, and by their short, sharp-pointed centre leaves show signs of having nearly finished their growth; indeed, so important is this condition, that it will be better to give up the early batch and let all the spring fruiters run together than make an attempt which fails and spoils the plants into the bargain. The bottom-heat being so mild, these plants may be plunged to the rims of the pots, and, provided the tan or leaves contain a fair amount of moisture, future waterings must be light and by-and-by discontinued. Growing from the sucker to the fruit is now the favourite mode of culture with those who cannot have good Pines at the wrong time; but others who must have ripe fruit very early in the season cannot get away from a season of rest extending from the end of October to the beginning of January. The night temperature throughout this period should decline in like ratio, taking 60° as the mean and 70° on very bright days, when a little air should be given. A moist plunging-bed being preferable to direct watering, a little tepid water through November and December may be poured round the outsides of the pots to prevent the mat of roots from suffering by becoming too dry.

The general stock of fruiters may be kept progressing for some time to come, but a certain amount of rest being essential to a good start into the growth which they will make before they throw up, they must be freely aired on fine forenoons through the present month, watered when absolutely requiring this element, and gradually settled down to a state of rest. As some of the first batch, no matter how carefully selected, will persist in making a growth before they start, and a few of the general stock may not do so, a thought as to their position later on may be necessary, but to the experienced eye nearly all the matured plants will now be perceptible.

Successions.—If any plants in 8-inch pots are thoroughly rooted and likely to suffer by being kept over until February, of two evils it is better to risk

a small shift at once than resort to frequent watering during the winter. In this case a sweet bottom heat of 80° from materials that will not readily fluctuate should have been secured some time back, as they must not stand about for a single day after potting is finished. The compost for these plants should be thoroughly warm and dry enough to stand firm ramming with a blunt potting stick, otherwise they will not only require frequent watering, but the soil being loose it will hold too much moisture in suspension. The pit being light, well heated, and the plunging bed near the glass, these plants may be kept steadily progressing until we are quite overtaken by wintry weather, when a steady bottom heat of 75° and a mean day temperature of 70° will prevent them from losing the little they have gained.

Suckers.—If any of these now fairly rooted still occupy manurepits and frames, they should be moved to their winter quarters where fire heat is at command. The temperature of the air and bed need not be in excess of their present allowance, but nights being cold and the weather uncertain early removal to a pit which will not fluctuate is desirable. Late suckers recently detached from summer fruiters must be taken in hand at once, and assuming that a sweet moist bottom heat of 80° is at command, they may be trimmed, divided into two sizes and potted, the largest into 7-inch and the smallest into 5-inch pots. Any residue of the compost used for the successions, warm and dry, will suit them provided it is well rammed, room being left for giving water without overflowing on to the bed. Let the pots be soaked if new, washed inside and out if old, extra well crocked when dry, and a little soot dusted into each to keep back worms. If the soil is very dry give one watering, plunge quite up to the rims, keep the pit close, and dew them over with the syringe occasionally.

EARLY VINES.

Root-lifting, root-pruning, additions, and top-dressing should now be pushed on with all possible speed when the weather is favourable. Although each of these operations is performed in a way peculiarly its own, not one can be completed without the aid of good compost. This, then, must be prepared in quantity equal to the probable demand, and provided fresh turf with the Grass upon it is used the addition of a fair percentage of bone-dust should set the whole mass in a state of fermentation. Ordinary soil at this season is by no means cold, but considering that the roots have to recuperate and take a firm grip before the Vines are started in November or December, something stronger than the normal heat will be found advantageous. This part of the business settled and the mode of procedure decided upon, steel forks skilfully handled must be brought to bear upon the faulty border. Root-lifting is practised when the compost, exhausted by time and frequent watering, requires removal to make room for soil of better quality, and the Vines, already too weak, are in need of every bit of old root worth saving. In this case it is proper to commence at the extreme front of the border, working out the old compost bit by bit, saving all the roots as the work is proceeded with, and keeping them tied up in moist bundles until the drainage is put right and ready for the new compost. New turf, Grass-side downwards, forms the base for the compost, which is wheeled in, made firm by even treading and high enough for the first layer of roots emanating from the lowest part of the undisturbed border. These are spread out, examined and relieved of all faulty or injured parts by the use of a sharp knife; a little soil is cast over them, made firm by beating with the back of the fork, another layer follows, and so on until all is finished, when a good covering of fresh stable litter if it does not aid fermentation prevents the internal heat from escaping. The Vines during this process are kept close, moist, and, it may be, shaded, but having an abundance of roots in the undisturbed part, inside or outside, as the case may be, it frequently happens that they do not show signs of having been interfered with.

Root-pruning means a check when the compost

in the comparatively new border is too good and the Vines are making much stronger wood than they can ripen. In this case a portion of the border along the front is forked down when the strongest roots are shortened back and those making a descent into the drainage are liberated. All the compost turned back being good, possibly well charged with bones, is returned, but new loam being so acceptable, a moiety of fresh compost is placed where the new roots can lay hold at the outset. As Vines always do best before the roots reach the extremity of the space allotted to them, especially when the boundary is formed of cold brickwork, a turf wall should be built up parallel with the front, allowing about 2 feet run for the new roots before they enter into it. In this case, the drainage should not extend beyond the front of the border, as fresh air by this means, also warmth from front linings, can then work more or less beneath the compost. If a portion of the inside or outside space eventually to be filled up with compost looks unsightly, this space may be filled up with fresh fermenting leaves from the Oak or Beech, if not before, certainly when the Vines are started. The gentle warmth which works into the front of the border and through the drainage soon draws out a profusion of active roots, but on no account must this decaying vegetable matter remain more than one season, otherwise the Vines will receive a check when it is taken out to make room for the next moiety of compost.

Additions.—As all good Grape growers now make their outside and inside borders piecemeal, adding a little from year to year as the roots require it, the best time to perform this work is immediately after the crop is off, or the premier leaves show signs of ripening. Two feet at a time is ample, and the retaining walls of turf being perhaps heavy or poor, they should be forked down, and when the roots have been tipped with the knife the new compost supported by a new wall should be added. The first or oldest part of the border being solid and firm, some care in building up the new part and dovetailing the two well together is absolutely necessary. Otherwise, if loose enough to settle the following season, the young roots will be strained and snapped, whilst water will pass through the cavity instead of penetrating evenly through the border.

Top-dressing.—The best time to top-dress early Vine borders is the latter part of August or early in September, and, being an annual operation, all old mulching and inert soil must be removed to avoid getting the surface of the border above the wall sill. When the surface rootlets have been laid bare by pricking over with steel forks, the loose material may be drawn off with an old broom, a rake, or the hands, when fresh compost, extra well charged with bone-dust to the depth of 2 inches, must follow. This covering cannot be made too firm by beating, and early autumn rains being so acceptable, the mulch of fresh stable litter should not exceed 3 inches or 4 inches.

EARLY PEACH HOUSE.

If the removal and replacement of any of the trees is contemplated, all preliminaries, including the preparation of the stations and compost, may now be proceeded with. Good drainage beneath trees which require so much water is imperative, and strong calcareous loam cannot well be dispensed with. Where this is at command, gritty matter of some kind that will keep it open and pervious to the passage of water will make the best of compost, but, lacking the approved staple, a good Peach soil may be manufactured out of lighter loams by the addition of dry pounded marl, lime rubble, and bone dust, well mixed and thoroughly rammed or beaten when the border is in course of formation. The stiffest loams, indeed, should be made very fine, as all stone fruit trees like a resisting as well as a sustaining compost, and produce the heaviest crops of fine fruit when every bit of turf is filled with active rootlets. Trees intended not only for removal, but also for fruiting next season, should have been lifted or root-pruned last autumn, and, provided they are under glass, they may be moved at any time in Septem-

ber with the greatest degree of certainty. It is not a good plan to depend upon any distant nursery for trees, as much time is lost in growing them to a fruiting state, but having a reserve wall to draw from, the forcing gardener must go to the trade every year for young stock with which to fill up all vacancies. A tree of home growth and training may be kept in lifting condition by annual root-shortening to induce fibres and replanting in poor rather than rich compost until it is seven years old, but trees of three years' training answer best, as the bending to the trellis of the strongest branches not unfrequently bursts or deranges the cells, when gumming follows.

Root-pruning, or root-lifting and relaying in fresh compost may now be pushed to a close, and notwithstanding that the balls only may be left intact, careful attention to the shading and syringing of the foliage will ensure trees fit for starting at the usual time. This severe handling is not, or should not, be necessary, as the experienced fruit forcer avoids all severe checks by running round each tree every year. By taking out annually a semi-circular trench a foot in width quite down to the drainage, shortening all the roots to within 6 inches of their origin, and relaying the points in fresh loam, forcing trees may be kept in good condition for a number of years, but occasionally, perhaps once in seven years, it is necessary to work off all the surface soil which has become inert or poisoned with manure and liquid, and to replace it with fresh sweet compost, in which bone-dust at the rate of twelve per cent. should form an ingredient. Lacking the latter, fine old lime rubble or hair plaster and a little old soot may be used as a substitute, but on no account should animal manure be introduced beneath the surface of the borders. As the balls of old trees in course of time become almost impervious to the passage of water when supplied in large quantities, even the removal of the surface soil offers facilities for saturating these parts as well as the drainage beneath them, and when it is borne in mind that nine out of ten cases of bud-dropping may be traced to dryness somewhere, these old root-ramified balls should receive the most careful attention. It will not, of course, do to neglect this important part of the border at any time, but when the old soil is removed the lower part of the ball can be pierced and made satisfactory before the new compost is closely rammed over it. At other times the difficulty, or the rock upon which so many go wrong, may be met by forming a basin and pouring in copious supplies of diluted liquid, repeating the operation until the filtered water runs freely from the drainage. I have dwelt upon this important item in Peach tree management, especially under glass, as I know from long experience that hundreds of shy trees would be more fertile were the balls more frequently saturated.

EARLY FIGS,

intended for starting in November, must receive the annual check without delay, for if once allowed to become too strong, the first crop certainly will be unsatisfactory next April. The sides and bottoms of the pits in which trained trees are grown should be well cemented or concreted, the fall being ample for the quick escape of water from the drainage. These, again, may be divided and sub-divided by brick walls to prevent the roots of the several trees from interlacing. Ordinary brickwork will not, however, keep the roots at home, neither will it render annual root-pruning unnecessary; therefore, being much in the way, I prefer having the whole pit clear, giving the roots of each tree a cube of compost supported by turf walls, which are forked or pared down and rebuilt annually. A cube of compost 3 feet square and 2 feet deep resting upon a foot of drainage will support an immense tree for a great number of years, and being pervious to warmth and air when the old decaying fermenting material is removed it soon becomes dry, when the roots ripen quickly. Rather light calcareous loam made porous by the addition of old lime rubble, broken brick, burnt clay, or charcoal suits the Fig to a nicety, and being elastic, it takes unlimited supplies of water. The whole of the ball of a Fig

tree need not be disturbed, but, as I have previously observed, the retaining wall of turf should be removed and replaced with new annually in September. Unlike the Peach, unless the fresh compost is very dry, the closely shortened roots need not be watered home, but care must be taken that every particle is properly moistened before fermenting material is applied in November.

WORK AMONGST HARDY FRUITS.

The gathering of all fruit as it becomes fit for use or storing forming the climax of one year's exertions, no other operation must have precedence. Scarcity is now an oft-told tale; but until quite recently, few, I believe, were aware of the fact that very light crops indeed are being thinned rapidly, whilst Apples and Pears, apparently well set, are ugly, deformed, and out of character. Half a loaf, however, being better than no bread, deformed and faulty fruits which drop will be acceptable certainly for present use, especially as colonial produce is likely to fall below the average. These remarks, of course, apply to early fruits which barely reach the store-room, and not to late varieties which started late and will be unusually late in becoming fit for gathering. Some varieties of Pears and Peaches most certainly will hang well into October, and then, unless the too much heat period, which some think ruined our prospects, can be repeated, it is to be feared the quality will be far from satisfactory.

Blossom buds generally, as might be expected, are likely to be abundant, and ripeness being the mainspring of future success, I must again urge all cultivators to let sunlight and air into all sorts and conditions of trees by pinching, shortening back, or the entire removal of all shoots which will not be wanted next year. Those left, if anything thinner than usual, for the majority retain too much wood, must be kept closely and neatly trained and quite free from insects, as no amount of care can compensate for the premature loss of foliage.

APRICOTS in highly cultivated gardens having failed whilst trees fighting or struggling for existence, with roots under hard-trodden pavements and branches against thatched cottage walls in many districts have been laden with fruit, the question arises, what step must be taken to place the professional on a level with the yeoman. The too much theorist may say, pray for cold weather when the trees are in flower; but the practitioner will advise cutting off the supply of rich food, first by the removal of strong mulching, second by root-lifting and shortening, and last by relaying in poorer compost divided from the rich vegetable borders by rough planks placed on edge a few feet from the wall. This operation will induce the formation of more hungry feeders, and abundant moisture in summer being imperative, a thoroughly moist condition through the autumn and winter advisable, the drainage must be plentiful, the compost sound loam and brick rubble not less than 2½ feet in depth. The trees being quite clear of fruit, now is the time to set about this work, and notwithstanding the fact that foliage may flag and unripe tips die back, the new roots formed before the leaves fall will favour the setting and swelling of a crop of fruit next season. When Apricots, which stand first for flowering, have been operated upon, early Peaches, early Pears and Plums may be taken in hand; and last, but not least important, Apples which have had a lazy time must receive attention.

FIGS, again, having cast nearly all their fruit and rushed into gross growth, at once may be worked round, rather sharply root-pruned, well drained, and given a fresh start in light calcareous loam, lime rubble, or brick rubbish. Of the latter, quite one-eighth may be used, and the harder it is rammed into the trench the better will be the result. All animal manure must be removed and rejected, but, the better to keep frost out of the ground, the borders may be covered with tree leaves, finished off by a layer of long litter to prevent disturbance by the wind.

STRAWBERRIES may still be planted, but unless

the soil is dry and in perfect condition, the plants strong and suffering in small pots, permanent planting may be put off until February or March. All young plants in small pots certainly should be turned out and planted out in nursery beds, where they can have full exposure to air and light. Runners, too, which have been hand-laid in the open ground may be detached and treated in the same way, allowing 6 inches from plant to plant and 9 inches from row to row. Some growers never peg a runner down upon a small pot, but prick out plenty of good ones when the beds are trimmed, and from these make their permanent beds the following July. This plan saves a great deal of trouble, and the nursery beds taking up very little room, it is worth adopting by those who have no time to waste at a very busy season.

RASPBERRIES.—Some time ago I drew attention to the importance of putting out a few canes of approved sorts annually and destroying similar breadths which have been longest upon the ground. Raspberry canes, like Strawberry runners, unless new varieties be wanted, may be obtained from one's own beds, and deep, rich, friable soils being essential to success, old plantations which have been mulched annually produce enormous crops of Peas, Beans, and other succulent vegetables. The end of September or early in October is the best time to plant, but, like the Strawberry, the canes may be grown for a year in light, rich nursery beds in preference to putting them out before their permanent quarters are properly prepared. Varieties, fortunately, are not numerous, but some are finer and of better flavour than others. Carter's Prolific Nos. 1 and 2, Baumforth's Seedling, Prince of Wales, Fastolf, and Bunyard's Superlative are good. The last, an enormous cropper, produces fruit of large size, much resembling Héricart de Thury Strawberry in appearance, and of excellent flavour both for the dessert and the score of uses for which this wholesome fruit is applicable. Carter's hardy Yorkshire sorts are equally prolific and good, and can be strongly recommended to all who wish for the cream of the cream in the way of Raspberries.

THE ORCHARD.—Here, as in the fruit garden, all gathering must have first attention. Another important operation is immediate attention to grafts, especially where they are elevated on old stocks, have made rank growth, and are much exposed. If ligatures have been used, they should be examined and if necessary cut, but the most important work is tying to light rods lashed to the trunk to prevent their being blown out by autumn gales. Grafts upon young stocks may have the ligatures cut, and, being close to the ground, they can be secured to light stakes. If American blight has been introduced, the operator should carry with him a composition of cow manure, clay, and paraffin, with which infested stocks and scions may be painted as he proceeds.

W. C.

Cherry, Castle Hill Seedling.—In a collection of ten dishes of fruit exhibited by Mr. R. Nicholas, of Castle Hill Gardens, South Molton, N. Devon, at the flower show at Taunton, August 13, appeared a dish of remarkably fine Black Cherries, under the name of Castle Hill Seedling. This Cherry has the character of the Black Tartarian, is very large, and with tender flesh and excellent flavour—a valuable late variety. The tree from which the fruit was gathered is growing against an east wall where it does remarkably well. It is an accidental seedling; the tree was taken care of, and the fruit is very highly esteemed by Earl Fortescue. Whether this fine Cherry will ever be distributed remains to be seen, but it appears to be so valuable that fruit growers generally should have the benefit of so excellent a late variety. It may be added that the fruit attains to a large size.—R. D.

Gold medal fruit essay.—We are asked to state that the prize of twenty-five guineas offered by the Fruiterers' Company for an essay on profitable fruit-growing for cottagers and others with small holdings, and the gold medal offered by Dr. Hogg to the winner in the competition, have been awarded to Mr. J. Wright, of 36, Alma Road, Wandsworth.

TREES AND SHRUBS.

THE NEPAUL JUNIPER.

(JUNIPERUS RECURVA.)

If anyone doubt the salubrity of the climate or the quality of the soil of Ireland, let him visit the Earl of Annesley's domain, Castlewella, Co. Down, and there he will find Conifers from Japan, from Nepaul, and other parts of the world beating the dimensions recorded by travellers who have seen and admired them in their native countries.

The Junipers form a large, interesting, and most beautiful family, composed of resinous trees of medium height, cylindrical columns

Cupressoidæ, which include the beautiful *J. chinensis*, *J. occidentalis*, a Californian tree 50 feet in height, the lovely *J. phœnicea* from Asia Minor, and *J. recurva* foemina, of which the accompanying engraving conveys a faithful representation. The section to which *J. recurva* belongs contains several more of the giants of the race, including *J. excelsa*, from the Crimea, *J. thurifera*, the Incense Juniper from Spain, and *J. virginiana*, the red or pencil Cedar, introduced by Evelyn in 1664. The latter, towering up to a great height and forming most graceful columns in nearly all the old gardens in the kingdom, is of great economic value in America; the close-grained heart-wood, slightly fragrant, taking a high polish and resisting attacks of

sound. It is used in smoking hams and other meats, and is said to be instrumental in giving the peculiarly fine flavour to the Westphalia hams which are generally smoked with the branches. The berries of the common Juniper are used in flavouring gin and hollands, and the shrub itself is the badge of the Highland clan Murray. *Juniperus recurva*, introduced in 1830, and of which the Earl of Annesley may feel justly proud, is described by Messrs. Veitch in their "Manual" as a shrub or bush 5 feet to 8 feet high, growing amongst the crags and rocks of the Himalayas from Cashmere to Bhotan, but in valleys as a tree 30 feet high. It is further described as a distinct species with recurved, pendulous, feathery branchlets clothed with loosely imbricated pointed leaves of a greyish green colour. A statement is also found in the same "Manual" that the rusty brown, chaffy, or persistent withered leaves of the preceding year with the pendulous branchlets give the plant a drooping, sickly, but picturesque appearance. In these remarks I can bear them out, as trees of the female form, for nearly all the Junipers are dioecious, planted here in 1840 have this peculiar look, especially in dry seasons when red spider, a dear lover of several species, persistently attack them. Also I must congratulate the authors of the book upon the moderation of their notes as to the height of the tree in its native habitat, the immense specimen herewith figured having attained to within 18 inches of the given maximum height. Nearly all the Junipers do well in deep sandy loam, upon thin brashy limestone, and grow freely enough in almost any ordinary garden soil, neither too dry nor tainted with stagnant water. Some species do well in rock-work, in rocky clefts; in fact, where very few shrubs will grow and retain their health for any length of time, but the tree-like Junipers enjoy a good root run, not necessarily deep, and well repay the care usually devoted to the wants of our best specimen Conifers. The female form of this remarkable Juniper, I believe, is generally met with in British collections, but the male form, *J. recurva densa*, a low, slow-growing, compact, deep green bush, is so distinct and beautiful, as to render it fit, not only for the best company, but also for the smallest of lawns where larger trees would be out of place in well-planted gardens.

Unlike the true Pines, the Spruces, the Silver Firs, and some of the Cypresses, the Junipers, with the exception of the Red Cedar, are of very little value in this country for timber, but being so numerous, so varied, and as a rule so hardy, they are quite indispensable to the planter. He may form his main groups of the giants of the West, of the rich colours and forms of Japan, but he cannot finish his picture without the aid of the Junipers, which give tone and character in the pinetum, the shrubbery, and the rockwork; whilst the compact columns running through the various shades of green, grey, and gold give the classical charm in the geometrical garden and upon the terrace. A group of tall, grey, cylindrical columns of *J. suecica* at the end of a long vista, as at Elvaston, is a sight worth travelling many miles to admire, and the same may be said of the male form of the Chinese Juniper when casting its showers of golden pollen in the spring. All the prostrate or carpet Junipers are beautiful and invaluable, and our native *J. communis*, when seen growing as on the slopes and downs in Surrey either as a single specimen or in masses, gives colour and form which all lovers of the picturesque admire.

Running through the rather long list of Junipers, I note a few which planters who have



Juniperus recurva. Engraved for THE GARDEN from a photograph by the Earl of Annesley in his garden at Castlewella, County Down.

of grey or gold, grotesque bushes of irregular shape and prostrate forms, which do not rise more than a few inches from the ground. They are found growing in all parts of the Northern Hemisphere, from the Arctic regions to the Tropics, but are most abundant in North America and the temperate parts of Europe, where, if they do not purify the atmosphere, they produce shade and shelter and give one an idea of dryness of soil and balsamic odours. So numerous and varied indeed are the Junipers, that botanists have divided them into three sections: the *Oxycedri*, of which our common indigenous *J. communis* may be taken as the type; the *Sabinia*, of which the well-known Savin may be taken as the type; and the

insects, is admirably adapted for cabinet-work and inside fittings. In this country years ago the landscape planter could not get on without the Red Cedar. Nurserymen at the present time use it extensively as a stock for choice species and varieties, and manufacturers carry on a brisk trade in the conversion of the deliciously fragrant heart-wood to black-lead pencils. The Juniper is mentioned in the Bible as the tree under which Elijah took refuge in the wilderness of Beersheba to avoid the persecution of Ahab, and it was highly appreciated by the Greeks for its medicinal virtues. It was noticed by Virgil, and Pliny says that in his time it grew to a great size in Spain, adding, wherever it grows, the heart is always

not already got them should certainly secure. *J. communis* in all its forms is useful for planting in the shrubbery, upon rocks, and in the game cover, where rabbits and hares are not over abundant. *J. c. oblonga pendula* forms a very handsome lawn specimen. *J. drupacea*, from Asia Minor, is very distinct, and grows to a height of 20 feet or 25 feet. *J. rigida*, introduced in 1861 by the late Mr. J. G. Veitch, is very ornamental and has a great future before it. *J. excelsa* is one of the best. *J. thurifera*, the Incense Juniper, is good and distinct. *J. chinensis* is one of the very best. The Red Cedar is too well known to need description, but I must draw attention to the weeping form, *J. v. pendula*, also to *J. phoenicea*, two invaluable lawn trees. The Irish and Swedish Junipers are indispensable, and the female form of *J. recurva* readers of THE GARDEN now have placed before them. W. COLEMAN.

THE ALMOND TREE.

(AMYGDALUS COMMUNIS.)

IN early spring the margins of several of the smaller woods in the park at Holwood are rendered bright by the free use of the common Almond and several of its best varieties. Very interesting, too, at the present time is the large number of well-formed fruit with which the greater number of the trees are conspicuously adorned. Generally speaking the Almond is not a common tree either in our woods or parks, and this is to be regretted, for certainly few spring-flowering trees or shrubs can equal it for ornamental effect, as the bright and pretty flowers stand the cold cutting east winds and sleety showers to which they are usually subjected in the early part of the year. What strikes me forcibly, too, is how well the Almond thrives, and how perfect and fully developed the flowers appear when the tree is growing in a cold and hungry soil. In the south park here and where the soil is of a most unkindly nature and of the poorest quality imaginable, the Almond thrives in a satisfactory way, flowering freely and producing abundance of fruit from year to year. The growth, too, is fairly rapid, it having kept pace for a number of years back with Laburnums, Rowan trees, Thorns, and several quicker-growing subjects that occur in the same patches of woodland. There seems to be a great diversity of colouring in the flowers of different trees, those of some being deep red, while those of others are of a washed-out pink, or between pink and white.

THE LARGE-FRUITED ALMOND (*A. communis macrocarpa*) is superior both as regards size and showiness of flowers to the normal plant, and is likewise usually of a more rigid and upright habit of growth. The flowers of this variety, produced very early in the season, are each about 3 inches in diameter and pale pink in colour, deeper in shade towards the base of the petals. It is, perhaps, the best and most showy variety in cultivation, and as easily managed as the typical plant.

A. NANA, or the dwarf Almond, is a favourite with everyone who has seen it when in full flower during March and April. It continues for a long time in bloom. The colour of the flowers is, I fancy, much brighter and more intense than in any other kind. The colour varies from deep red to less showy hues, but the flowers are not so large individually as those of *macrocarpa*. This Almond can be propagated by division of the roots or suckers and from seed, which should be sown as soon as gathered. I find the quickest and surest way of increasing the dwarf Almond is by division of roots or by suckers.

A. BOISSIERI forms here a slender, though bushy shrub. It produces large flesh-coloured flowers in April and early May. It is a very distinct and desirable member of the family with leathery leaves, dull green above, and paler on the under side. Warm soil of fairly good texture would seem to suit this plant admirably, and it succeeds well where partially sheltered by taller growing plants.

Planters, speaking broadly, consider the Almonds of too tender a constitution for the climate of any but the warmer parts of Great Britain; indeed, but few specimens are to be met with after leaving the southern English counties. That the Almonds are well worthy of extensive culture and a fair trial everywhere, few who have seen Kentish specimens in full flower will deny. A. D. W.

Holwood Park, Kent.

NOTES ON SHRUBS.

LYCIUM CHINENSE is a Chinese species with semi-prostrate or vine-like branches, 8 feet or 10 feet long. From these spring, at nearly right angles, rigid, lateral branches, 1 foot or 2 feet long, and these are fairly loaded with bright scarlet fruits each about half-an-inch long, and contrasting finely with the leaves. The end of each main branch is, as it were, a broad and leafy raceme, 2 feet or 3 feet long, of brilliant fruit. The fruit and the leaves remain upon this plant until destroyed by really hard frost. Among fruits which are ornamental at this season of the year should be mentioned forms of one of the Asiatic Apples, *Pyrus prunifolia*, one of the parents, most authors affirm, of the so-called Siberian Crabs. The fruit of *Pyrus prunifolia* is golden yellow on some plants, and bright scarlet upon others. It is 1 inch or 2 inches in diameter, and hangs upon the branches long after the leaves have fallen, retaining its form and its brilliant colours well into the winter. This species, or its varieties—for the so-called ornamental Apples are so changed by long cultivation, and perhaps by the crossing of the different species and varieties, that it is rarely possible to find exactly the wild type of any of them—is far more ornamental in fruit than the more commonly cultivated varieties of *P. baccata*, the fruit of which, distinguished by the deciduous calyx, is smaller and less persistent upon the branches. The foliage of the Asiatic Apples falls early and without change of colour, so that it is for their flowers rather than for autumn effects that these plants are really valuable. But one of the Asiatic Pears, *Pyrus sinensis*, often known as the Sand Pear, is not surpassed by any other tree in the deep rich scarlet and purple tones of its autumn leaves. This is a plant of excellent habit and rapid growth; it is beautiful when in flower; the fruit is valuable for cooking, and the leaves become more beautiful in the autumn than those of any other fruit tree which I can now recall. It is a tree, therefore, which might well be seen in gardens more generally than it is at present. Another Eastern Asia Pear, *P. betulifolia*, loses its silvery white leaves early, and without any change of colour.

Few Spiræas are valuable on account of the colours of their autumn foliage. Many of the species, especially the European and Siberian, lose their leaves early; but *S. prunifolia*, of which only the double-flowered variety is known to botanists or in gardens, one of the least attractive of the entire genus both in habit and in its flowers, is very beautiful in the brilliant orange and scarlet of its autumn dress. The leaves of *Spiræa Thunbergi* will assume rich colours at the end of another week or two. This is almost the very latest to change of the shrubs which take on bright autumn colours, just as it is one of the very earliest of all shrubs to put forth its leaves in the spring and among the earliest to flower. Few shrubs, all things considered, are more beautiful than this Japanese *Spiræa*, and few can boast of more good qualities. Its only fault is found in the fact that the ends of the branches are sometimes killed back in severe winters.

Among European shrubs, none assume such attractive colours in autumn as do some forms of the common Spindle tree (*Euonymus europæus*), although in the richness, or rather in the depth of its autumn tints their American congener (*E. atropurpureus*) surpasses them. Much more beautiful, however, than either the European or the American species in this respect is the Japanese *E. elatus*. Forms of this plant vary, but there is one upon which the leaves assume in autumn a clear rose-

pink colour, which resembles that of no other plant I can recall, and which makes it one of the most interesting shrubs that can be grown wherever attention is paid in planting to autumnal effects. The fruit, however, is small, and not to be compared in brilliancy or in beauty with that of the European plants, which are conspicuous objects in the shrubbery through the autumn and early winter months.

We spoke, when the plants were in flower, of the beauty of a Japanese Cherry, *Prunus Pseudo-Cerasus*. Its value as an ornamental plant is heightened by the fact that its leaves turn in the autumn to orange and scarlet. Among small trees of comparatively recent introduction into our gardens, not one gives better promise of real ornamental value. A feeble growth and not particularly good habit are the only drawbacks to this plant, and these are compensated for by its abundant flowers and handsome foliage.

The Japanese Maples are certainly at their best in the autumn, when the colours which some species take on are almost unsurpassed. On the whole, Japanese Maples cannot be considered a great success in cultivation here. Occasionally a fairly good specimen of *Acer polymorphum* or *Acer japonicum* may be seen, but none of the race seem possessed of very robust constitution, and all of them, although hardy enough as regards cold, are apt to perish suddenly, or branch by branch, without any apparent cause, during the summer. The nearer the plants approach the types of the species, the more satisfactory they seem to be, and the green-leaved and the purple-leaved *A. polymorphum* are more reliable than any of the abnormal forms of this species, and of *A. japonicum*, which Japanese gardeners have been collecting and perpetuating for centuries. But Japanese Maples are such really beautiful objects at this season of the year, that one is tempted to recommend their more general use in gardens, in spite of all the disappointments which have followed their cultivation, and of the miserable sun-burned appearance many of the varieties present before the autumn kindles their colour into a blaze. A week of such beauty may well compensate for many disappointments.

Few Maples turn more beautifully than the shrub-like Manchurian form of *Acer tataricum*, which is sometimes known as *Acer Ginnala*, but it has the serious defect of losing its leaves early and before most other plants have made their finest autumn show.

There is great difference in the behaviour of the various species of Lilac in autumn. The leaves of the common Lilac never change colour at all, but remain green until very late and then turn black and fall. The Persian Lilac behaves in the same way, while the leaves of *Syringa chinensis* turn to a pale yellow, without beauty. The leaves of *S. japonica* and *S. amurensis* fall early in October and without changing colour, and this is certainly a defect in these plants as garden ornaments. *S. villosa* behaves in the same way, although the leaves persist a few days longer than upon the two species just referred to. The leaves of *S. pekinensis* remain much later upon the plant, and then turn a light, but not very clear yellow. The leathery leaves of *S. oblata*, the only Lilac worth consideration for the autumn colouring of its foliage, are still green. A little later they will turn to a deep rich claret colour of unsurpassed beauty.

ILEX VERTICILLATA.—The leaves of the Black Alder turn black before they fall, and without any previous change of colour, while on an allied and comparatively rare species, *Ilex lævigata*, which may be most readily distinguished by its stalked fruit, the autumn colouring of the leaves is bright yellow. These two Hollies are well worth general cultivation for the beauty of their fruits. They will thrive, although swamp plants, in any ordinary garden soil.

Some of our native Viburnums are worthy of mention at this time. The most conspicuous, perhaps, although its foliage, having first turned orange and scarlet, has now nearly all gone, is the cosmopolitan *V. Opulus*, the most showy of the genus in fruit, which is large and bright red, remaining for many weeks upon the branches until devoured by

birds, who seem to attack it only when other food becomes scarce. The broad and handsome leaves of *V. dentatum*, one of the most ornamental species of the genus in habit, foliage, flowers and fruit, are now dark bronzy red upon the lower parts of the branches, whilst those nearer the ends are still green and lustrous. *V. nudum* and *V. cassioides* are both beautiful in the autumn, their deep leaves first shading into purple, and then turning to the colour of claret wine. *V. Lentago* and *V. prunifolium* are handsome objects, too, at this season of the year, when their leaves have turned from bright green to orange and purple.

There is a great difference in the behaviour of the different Roses in regard to the change of foliage. Most Old World species lose their leaves without any change of colour at all. *Rosa rugosa* is an exception to this rule. *Rosa spinosissima*, the Scotch Rose, is another, although the colours which the leaves assume in the autumn are not very striking. The species which inhabit Western North America lose their leaves without any change of colour, while those peculiar to the eastern part of the continent change more or less brilliantly. *R. nitida* and *R. lucida* surpass them all, and there are few shrubs upon which the autumn foliage is more persistent or more beautiful than upon these two Roses. Masses of them, covered with ripe fruit, and fairly glowing with the deep tints of their leaves, are not surpassed just now in brilliancy by any plants in the Arboretum.

The foliage covering the long wand-like branches of *Andromeda Mariana* is intensely scarlet, while that of *Leucothoe racemosa* is not less attractive, although a large proportion of green is still seen among the shades of red, which in a few days will make this one of the most beautiful of our native shrubs.

It is worth noting, perhaps, that the leaves of *Quercus dentata*, a species of Eastern Asia, of much promise as an ornamental tree, turn bright orange and scarlet, not a very common combination of autumn colours among Oaks; that while our North American Yellow-wood (*Cladrastis tinctoria*) is a beautiful object in the autumn, from the bright, warm yellow of its leaves, the Eastern Asia representative of this genus loses its leaves fully two weeks earlier without any change of colour; and that among the Larches the most beautiful in autumn colouring is the Japanese *Larix leptolepis*, upon which the leaves are now a clear canary-yellow, and much brighter than those of either the American or the European species. The leaves of *Pseudo-Larix*, one of the hardiest and most beautiful of exotic Conifers, turn to a deep orange hue in the autumn.—*Garden and Forest*.

***Spiraea vacciniifolia*.**—This Himalayan *Spiraea* is one of the August flowering species, and it is on that account especially valuable to the planter, as most members of the genus have now done blooming. The species under notice, judging by the specimen at Kew, is much more vigorous than it is usually considered to be, for most writers speak of it as reaching a height of about 2 feet; whereas the plant in question forms a large spreading bush over 8 feet high, composed of a number of strong upright shoots, while the minor branchlets, especially towards the lower part of the plant, have a somewhat drooping tendency. The leaves are rather small and ovate in shape, while the flowers, which are borne in large loose panicles, are pure white and make a goodly show. Another pretty white-flowered *Spiraea* now at its best is *S. callosa alba*, a compact growing bush a yard or less in height.—H. P.

***Clethra alnifolia*.**—At the present time this deciduous shrub is finely in flower, and is a most valuable subject for the front of the mixed shrubbery. The flower-spikes, each from 4 inches to 6 inches long, are white, and have a most agreeable, Hawthorn-like scent. I found some difficulty in establishing this subject for a time. In a stiff soil with a western aspect and highly impregnated with chalk, it scarcely existed, but since its removal to a southern position and using nothing but peat,

leaf-mould, and some silver sand, no difficulty exists in procuring satisfactory results. Previously, what little growth was made during the season was killed during the winter, the flower-spikes never getting beyond the bud state, as at that time they used to die off without expanding even in the smallest degree. Suitable soil appears to be a most important factor in the success or otherwise of this late summer-flowering shrub.—E. M.

STOVE AND GREENHOUSE.

GLOXINIAS AND THEIR CULTURE.

WHILE the better kinds of Gloxinias were at one time propagated almost exclusively by the leaves, the principle of selection is now so generally carried out, and the seed saved only from the very best, that the better plan is to procure a packet of seed from some good collection and raise a batch of young plants in this way. The seed, which is very minute, should be sown during the month of February in a well-drained pot or pan, filled to within half-an-inch of the top with good open soil, such as a mixture of two parts well-decayed leaf-mould to one each of loam and silver sand. On this the seed may be sprinkled thinly, and if a pane of glass is laid over the top it will need no further covering. If the pan is then placed in a spot free from draughts and away from the hot-water pipes, it will need little if any more water till the young plants make their appearance, when the glass must be at once removed. The seed will require to be kept where the thermometer does not get lower than from 60° to 65° at any time. After the young plants appear above ground they make rapid progress, and will soon require to be pricked off into other pans, using much the same soil as before. From the time germination takes place the seedlings must be kept near the glass and in as light a position as possible; otherwise should the young plants become drawn and weak during their earlier stages, it is quite useless to expect satisfactory results from them afterwards. In pricking off, the young plants should be placed about an inch apart, and directly they show signs of crowding it will be necessary to pot them off into small pots. The same kind of soil as that previously used will do well for the first potting, which should be into pots about 2 inches in diameter. They can afterwards be shifted into 5-inch pots, which will be large enough for most of them the first season, and in which fine plants can be grown. Gloxinias do not require to be heavily shaded at any time; still, shading is very necessary during the summer. The soil for the final potting should be of a more lasting nature, say equal parts of loam, leaf-mould, well-decayed manure, and sand, with a sprinkling of crushed bones. Then, as the pots get full of roots, an occasional dose of liquid manure or some artificial stimulant will be of service. By midsummer the plants will be strong and sturdy, and will do well in a structure rather closer and warmer than an ordinary greenhouse. A light dewing with the syringe during very hot weather is of service till the plants come into flower, and at all times their surroundings should be kept moist, otherwise thrips may be troublesome. When these pests put in an appearance fumigation must be resorted to. When the flowering season is over the plants will gradually go to rest, the first indication of this being the leaves turning yellow, and from this time the supply of water should be gradually diminished. When the foliage dies down altogether the soil should be allowed to get almost dry (not parched up), as if too wet the plants do not get the

requisite amount of rest and start prematurely into growth, while if the soil is kept in a baked-up state the tubers are sometimes attacked by a kind of dry rot, which will cause numbers of them to perish. The tubers should be wintered in a structure where the temperature ranges from a minimum of 50° to a maximum of 65°, while at the same time if too warm they become greatly weakened thereby. They may be wintered in the pots in which they have been grown, or where it is necessary to economise space as far as possible, they may be turned out and laid in boxes of sand or very sandy soil of a light nature; fine sandy peat will do well. Although Cocoa-nut fibre is sometimes used, it absorbs too much moisture from the tuber, which, unless the fibre is frequently moistened, is liable to become shrivelled; while if the fibre is kept too moist, it is apt to cause the bulbs to decay. After the tubers have passed the winter in a state of rest, they will require repotting and starting into growth. To do this they must be shaken completely clear of the soil and potted into small pots, say from 2½ inches to 4 inches in diameter, according to the size of the tuber. As the pots get full of roots the plants must be shifted into their flowering pots, the same plan being followed as that recommended for seedlings, except that most of them will now require pots 6 inches in diameter for their full development. Where a succession is required a very good plan is to start the tubers in two or three batches, with an interval of a fortnight or so between each, as the flowering season will then be spread over a longer period. Again, the seedlings will, as a rule, flower later than the old bulbs, so that the season will be still further extended. For autumn and early winter-flowering the latest seedlings should be selected, and to ensure success, they will then require a very light position in a structure that does not fall below 60°. The potting of Gloxinias in all stages should be done with a light rather than a heavy hand, as if the soil is pressed down too firmly the plants do not make satisfactory progress. In wintering the tubers, should the soil become very dry, it is better to sprinkle the surface slightly than to allow it to become parched up. H. P.

BOUVARDIAS.

COLD, wet seasons, like that which is now coming to a close, are not favourable to the growth of tender plants like Bouvardias, which during the summer are generally kept in pits and frames, with nothing more than solar heat. If this is made the most of by a system of early closing, it is sufficient to ensure free growth when the summer is bright and warm; but when the opposite of this occurs, the plants are usually deficient in size and strength when autumn comes on. This is especially the case with plants that were struck from cuttings in winter. Where the plants are in pots, a little fire-heat should be turned on in the nights and also in the daytime when the weather is cold. By adopting this course and assisting them with manure water, much may be done during the next few weeks to bring them up to the necessary size. To further help this the flowers should be picked off as soon as they are formed.

BOUVARDIAS PLANTED OUT.—Young stock planted out in pits has made much more growth than in the case of those in pots. The time has now arrived when it is better to take up and pot all plants that are to be so treated. If the work is deferred much later, the growing season gets too far advanced to admit of the roots taking sufficient hold of the soil to enable the plants to flower as they should do. If the roots were cut back as recently advised, the plants will take up with a mass of young growing fibres. Care must be taken not to injure these more than is unavoidable, either in the lifting or potting. Use a

rich, moderately light compost, consisting of three parts fresh turfy loam to one of leaf-mould and rotten manure in equal quantities, with a little sand added. Pot moderately firm and stand the plants in a house or pit where they will be near enough to the glass to enable them to get plenty of light. Enough heat should be given to set both root and top-growth freely in motion; to further encourage this, do not admit much air for ten days or a fortnight. Should the weather become very bright, use a thin shade in the middle of the day to prevent the temperature rising too high. Syringe overhead in the afternoons, but give no water to the soil for a few days. The system of planting out *Bouvardias* in summer in the manner under notice beats pot culture a long way, particularly in the case of young plants, provided an ordinary amount of care and intelligence is brought to bear on the work. During the three or four months that the plants have a free root-run, they make double the progress that those do in pots. If the roots are properly prepared for lifting, and reasonable care is taken in potting the plants and in giving them the warmth requisite to get them established, they do not feel the effects of removal in the least. Where there is the means of giving them the heat they need during the winter, it is much the best to turn them out permanently in the pits and allow them to remain for about two years, at the expiration of which time they can be replaced by younger stock. The quantity of flowers that *Bouvardias* will yield all the year round when grown in this way, as compared with what are produced under pot culture, would surprise anyone who has not tried the planting-out system. T. B.

IMPORTED AZALEAS.

IMMENSE numbers of Azaleas are imported every year into this country principally from Belgium, and one often hears complaints made that many of them lose such a quantity of leaves soon after reaching here that they become greatly disfigured thereby. While some varieties are undoubtedly far more liable than others to lose their leaves, the extent to which this takes place depends a good deal upon the treatment accorded the plants, especially during the first month after importation. Most of the Azaleas sent to this country are in the shape of small round-headed bushes, with a clear stem of about 6 inches high. They are planted out in a light vegetable soil, and, consequently, make very free growth. Such being the case, it is absolutely necessary to check them as little as possible in the shifting about they have to undergo before they are established in this country; and in order to succeed with them a very good plan is to unpack the plants directly they are received, when the state of the soil can be readily ascertained. Those that are dry should be soaked in a pail or tub of water, as if potted when very dry it is almost impossible to moisten the centre of the ball, and, consequently, many of the leaves will drop. The unpacking directly the plants are received is most essential for the preservation of the foliage, as they are crowded very tightly together, in order to reduce the cost of carriage as much as possible, and the leaves are liable to turn yellow and drop if confined in this way too long. When unpacked, and the ties that bind the head of the plant together loosened, the damp floor of the shed is a very good place to stand them till potting commences, and for this purpose I prefer equal parts of peat and leaf-mould, with a liberal admixture of sand, to peat alone, as the soil in which they have been grown is nearly all well decayed leaf mould. The size of the pots will, of course, depend upon that of the plants, but on this subject a word or two may well be said, for many of the plants that have been dug up from the open ground have balls of earth so large that if they were not reduced the pot would be altogether out of proportion to the head of the plant, and its value would consequently be greatly lessened. Such being the case, sufficient soil may be taken off to allow the plant a pot proportionate to its size, but a good deal may sometimes be done towards this

end by pressing the ball of earth together with the hands before potting, as being of a light spongy nature this can be done. In potting especial care must be taken that every cavity is thoroughly filled with soil.

With regard to the firmness of the soil, I fail to see the advantage of ramming it down to the extent that is often done, for many seem to think that an Azalea requires the soil to be almost as hard as a rock, against which opinion I may point out the light compost in which they are grown in Belgium. Still for large plants it is necessary to make the soil much more solid than for the small freshly imported ones. When potted the plants should be stood on a level surface and a thorough watering given them, a rather fine rose being used for the purpose.

If the plants are received during the first half of September they may be stood in a cold frame, but after that a structure in which there is little heat, just sufficient, in fact, to start the roots into growth without delay, will be of service. Overcrowding should be guarded against, and the plants must therefore be stood at such a distance that the tips of the branches just touch each other. Whether in a frame or greenhouse, the structure should be kept as close as possible consistent with the requirements of the plants for a fortnight or so till they have fully recovered from the check of removal, and the delicate hair-like fibres are commencing to push their way in the new compost. In the case of bright dry weather setting in, a good syringing a couple of times a day will be of service. When the plants are established in their new quarters more air should be given in order that the growth may be thoroughly ripened, as upon this to a great extent will depend the future display of bloom. Of course, where required for forcing, the object is to ripen them as soon as possible in order that they may be again started in heat, and on that account the varieties that perfect their growth early and consequently have their buds in a prominent state should alone be chosen. For very early forcing, however, these imported plants are not the best, the most preferable being those that are forced year after year, as if they do not suffer any check after the removal of the flowers, but are encouraged to grow as freely as possible, the specimens treated in this way gradually acquire an early flowering habit.

Azalea mollis is also imported into this country in large quantities (usually after the leaves have dropped) in the shape of little bushes bristling with flower-buds, and where required for flowering under glass the plants should as soon as possible be potted, as those that are partially established will retain their flowers longer than those that are not potted till they are on the point of flowering. For this very reason some prefer to grow their plants of this Azalea required for the greenhouse altogether in pots, but still if plants are lifted from the open ground and potted early there is but little difference in their behaviour. H. P.

SHORT NOTES.—STOVE AND GREENHOUSE.

Schubertia grandiflora.—From what I have this season seen of this plant as an exhibition specimen, I think it is likely to be a most useful addition to our flowering stove plants for show purposes. Judging from the few specimens I have seen, it promises to grow and flower freely. It would seem that the leading shoots of a young plant should be pinched out in order to induce it to form a good base, so that when it is trained over a wire frame, as in the case of the *Stephanotis*, it may be well furnished with shoots.—R. D.

Begonia fuchsoides.—This charming Begonia is one of the most useful things for covering unsightly pillars in the conservatory where a summer or autumn-flowering plant is required. The pendulous flowers, which at first sight remind one of those of the Fuchsia, are bright scarlet and produced in great profusion. It succeeds well in almost any light structure it planted out in a peat border where it can be allowed plenty of root-room. Some of the old wood should be annually cut away to allow the strong young growths to develop.—G.

WORK IN PLANT HOUSES.

CARNATIONS, WINTER-FLOWERING.—Where the plants have been grown in the open ground through the summer they should now be lifted and potted. It is a mistake to leave the potting until later on, as is often done, for, unlike *Bouvardias* or other things that will bear a considerable amount of artificial warmth to get them established in the pots before winter, these Carnations will not stand much fire-heat, and when the lifting is deferred until the growing season is nearly over the roots are not able to make the progress necessary to enable the plants to flower well. The advantages that attend the planting-out method are that the plants attain a much larger size than they do in pots, and there is also a saving in labour through the less attention that is required in watering, as except in spells of very dry weather not much in this way is wanted. In taking up the plants all the roots should be secured with as little breakage as possible. Carnations are slow growers alike in their roots as in their tops; consequently the roots are not able to make good any injury that happens to them in the manner that plants which make quicker progress do. Hence it follows that unless more care is used in lifting and potting them than is necessary with most things, Carnations suffer so much as to prevent their blooming well. This is especially the case when the flower-stems are in a forward state at the time the plants are lifted. If they are advanced so far that the buds are discernible, the loss of a considerable portion of the roots generally ends in the buds going blind; when this happens the plants often fail to flower until spring after a fresh lot of blooming shoots have been made. This most frequently occurs with the Carnations that are grown on the Continent, and which are each autumn brought over to this country in considerable quantities. They are fine, strong, vigorous plants with the flower-stems visible; yet oftener than otherwise they cause disappointment through the flowers failing to develop, when as a result there is no bloom forthcoming until spring. The size of pots that it is necessary to use requires to be determined by the size of the plants, as it will not do to shake away too much of the soil that adheres to the roots, or to attempt to get the balls into pots so small that the roots have to be compressed in a way that injures them. As soon as the plants are potted stand them in pits or frames, where the roots will be encouraged to make growth by a closer atmosphere through less air being admitted for two or three weeks, after which ventilate freely in the daytime. After potting do not give water until the soil gets dry enough to require it. Carnations should not at any time have their roots kept so wet as some things will bear to be. Plants that have been grown in pots should not be left too long out of doors if the weather should happen to be very wet, as they do not like the soil in a soddened state. When this occurs the roots cease to move, the result being that the top growth makes little progress. When the pots are full of roots an occasional application of weak soot water will assist the plants and also help to get rid of worms. The American system of growing winter-flowering Carnations which is sometimes practised in this country has much to recommend it. The plants when lifted are planted in low narrow houses with stages on each side of the path running down the middle, the stages being raised sufficiently to elevate the tops well up to the roof. In this manner the plants can be taken up with large balls and all their roots intact, so that they do not feel the removal in a way that interferes with their blooming even when the leading buds are so forward that they look nearly ready to burst.

FUCHSIAS.—Plants that were kept stopped back late in spring so as to prevent their flowering until the summer was far advanced will continue to bloom through this and the ensuing month, provided the foliage has been kept clear from insects and the roots have been supplied with enough nutriment to stimulate growth. The soil will now be so far impoverished that manual assistance of some kind must be regularly given. Fuchsias will not bear liquid manure applied in nearly so strong

a state as many things, and if any of the concentrated fertilisers are used, less must be given at a time than would be safe with the generality of soft-wooded subjects. If care is not used in this matter both the buds and the leaves will drop. Cuttings that were put in to strike some time back with a view to having good-sized examples in a flowering state early in the spring will now be ready for potting; 4-inch or 5-inch pots will be large enough for them at present. Turfy loam with some rotten manure, a little leaf-mould, and sand is the best compost to give them. They should be kept through the autumn in an intermediate temperature in a house or pit, where they will be close to the glass. Syringe overhead every day for the next two months, after which there will not be danger of red spider molesting them. Fuchsias that are struck in the summer and kept moving slowly through the autumn and winter make fine blooming specimens much earlier in the season than cuttings that are put in about the commencement of the year. Young plants of this description are also preferable to old ones that have been cut back, as with due attention in stopping they are better furnished. A well-grown Fuchsia should be densely clothed from bottom to top with leaves and flowers, so as to completely hide the stem and the branches.

STOVE.—AMARYLLISES.—Where the plants are started into growth at different times, say one portion in February, with others later, and some allowed to come on of their own accord without any artificial warmth, a long succession of flowers can be depended upon. For general decoration where the collection is moderately extensive, it is best to have them in succession in this way, though, as a matter of course, the display of bloom is not equal at any given time to that which follows all the stock being started at once. Those that bloomed first will have completed their growth some weeks since, and the leaves will be showing signs of natural decay, but whilst the plants have life in them the soil must not be allowed to get so dry as to hasten their dying off, as anything which destroys the vitality of the foliage before its time directly tends to weaken the bulbs and has a like effect in reducing the next season's bloom. And what is of equal importance, it interferes with the production of offsets which, in the case of scarce and fine varieties, it is so desirable to obtain. It often happens that Amaryllises and other bulbs do not receive a like amount of attention after they have done flowering to that which is given before they bloom, especially in keeping the foliage free from insects, such as red spider. The weakening effect which this pest has upon any plant that is allowed to get badly affected with it often seems to be imperfectly understood. Yet when the leaves of even the most robust and vigorous growing subject are infested with the insect to any extent that causes them to lose their natural colour and assume a brown sickly hue, the injurious effects are always shown for one or more years afterwards. Where Amaryllises are allowed to come on with nothing more than solar heat, the plants after flowering are usually put into cold pits or frames to make their growth. In the case of these the leaves will only now be getting matured. There is less danger from the attacks of red spider at this time than there was early in the summer, still even in the present month if once the insect has gained a footing it will do much harm if left to take its course. The best remedy I have found to clear the pest from the plants in question is to dip the leaves in a solution of Gishurst compound. Where the syringe is used daily through the summer and care is taken that enough water reaches the leaves on all sides, red spider seldom gives trouble.

MEDINILLAS.—Through the fact of Medinillas attaining a large size, it is often supposed that they are not desirable subjects for cultivation, except where there happens to be a large amount of accommodation for stove plants. Yet when means are taken to get the growth well matured in autumn, Medinillas will flower well whilst comparatively small. All the species like a drier atmosphere during the time the growth is being made

than many stove subjects. This points to the necessity for their not being stinted for air during the summer, particularly towards the end when the wood and foliage are getting hardened up. The plants should be raised well up to the glass through the present month and stood near where air is admitted; they will be better now without any shade. Keep the soil drier than in the early part of the season, but in doing this water must not be withheld so as to cause the leaves to flag for any length of time. When grown on the lines described, *M. magnifica* and its erect flowering form will bloom freely when they are no larger than can be accommodated in 10-inch or 12-inch pots.

T. B.

FERNS.

W. H. GOWER.

BRACKET FERNS.

"I SHOULD be glad if you could recommend me a few Ferns which I could use for brackets. I have *Platyceriums*," says J. Foden, Halifax. There are several plants well deserving attention, and which are peculiarly fitted for situa-



Drynaria morbillosa.

tions of the above-named character. All the kinds described here require the warmth of a stove and should be potted in peat and loam in about equal parts, with a little sand added. The plants should also be well drained, as they require a considerable amount of water all the year round to keep them in good condition. I know that in some places they are dried off in winter, the argument in favour of this practice being that it is natural for them to be so dried up and they require rest, but this is a foolish and absurd notion, and to teach such a system is to encourage the worst form of gardening. Under such a system the plants can never be any larger, and only the one season's growth can be had upon them. If carefully nurtured, however, through the winter months, the same freshness is maintained and the plant increases in size and stateliness. Therefore, I say that whilst less water is necessary for these plants in winter, it should never be curtailed to such an extent as to cause the specimens to suffer; indeed there is not a single Fern in cultivation, be it evergreen or deciduous, that is benefited by an entire withholding of the water supply. The following few kinds should form splendid ornaments as bracket Ferns in a well-arranged fernery, all that is necessary being to drain the pockets or brackets well and to allow sufficient head-room:—

AGLAOMORPHA MEYENIANA.—This plant has acquired the name of the Bear's-paw Fern from its very stout rhizome being covered with thick woolly scales, which are of a bright red; the fronds

attain a length of some 3 feet or more, and are thick and leathery in texture; they grow erect, are divided in the lower part nearly to the stem into somewhat broad, oblong entire pinnae, which are closely set and long and narrow. It is a native of the island of Luzon.

DRYNARIA CORONANS.—This is a very handsome species, with large, broad fronds, which are erect and arranged in a circle; hence its name. It has a stout and woolly rhizome; the fronds each attain a height of 4 feet and about 2 feet in breadth, tapering slightly upwards, and divided into broad pinnae; these are not contracted like those of the previously named plant, otherwise it is similar. It is a native of Malacca.

D. MORBILLOSA (see illustration), sometimes called *D. Heraclea*, is a bold, large-growing plant, which in large examples attains a height of 6 feet by 2 feet in breadth. It is rigid in texture, and the base is wide and cordate. It is a beautiful object in any position in a fernery, and comes from various islands in the Malay Archipelago.

D. QUERCIFOLIA is a distinct and pretty plant with dimorphous fronds, the barren one being sessile and lobed towards the top, in shape something like a large Oak leaf; the fertile frond is

some 2 feet long and pinnatifid; the barren frond usually dies annually, but remains on the plant. It is a very suitable plant for brackets, and forms an elegant ornament. It is a native of Moulmein and various other parts of India.

HYMENODIUM CRINITUM is a bold, handsome species, and it has obtained the name of the Elephant's-ear Fern, and its large entire dark green fronds give a very good foundation for the name. These are simple and entire, some 18 inches long and about 9 inches broad, deep green covered with very long black hairs; the stem is from 6 to 9 inches long, and covered with black hairs. This plant is found in Jamaica and several of the West Indian Islands, and it requires an abundant supply of heat and moisture. If used for the purpose here indicated, it should have a moist shady situation selected for it so that the edges of its fronds may be preserved, otherwise these become brown and shabby. When grown into a good specimen it is a distinct and magnificent Fern.

The above are a few kinds suitable for brackets, and if used alternately with *Platyceriums* (the Stag's-horn Fern) will render a fernery very attractive.

The origin of *Adiantum farleyense*. I see in THE GARDEN that there are discussions as to the origin of the *Adiantum farleyense*, no one knowing where it originated. It happens that I do really know, as the late Sir Graham Briggs, of Farley Hill, Barbadoes, was an old friend of my husband's, and he came to see us in London in 1866 or 1867, and brought with him this Fern which had appeared upon his estate and was called after it.

He brought over a very few plants, only three or four, I fancy, and gave one to Kew at the same time that he gave us ours.—CONSTANCE HUGH SMITH, *Mount Clare, Southampton.*

Gymnogramma triangularis (H. B.).—Yes, this species of which you enclose a frond is a half-hardy plant and requires to have a quiet nook selected for it. I should advise it being placed so that it might be entirely covered with leaves in bad weather through the winter months. I was pleased to see this species again. I have not seen it for a long time, and was afraid it was lost to cultivation.—W. H. G.

Gymnogramma schizophylla gloriosa.—This is a most distinct and beautiful Fern. The long, finely-cut fronds hang gracefully over the pot, and are exceedingly delicate in texture. A peculiarity of this *Gymnogramma* is that it produces a young plant at the extremity of each well-developed frond, and this will produce several small fronds without coming into contact with the soil. The fronds are not so thickly covered with powder as in the case of some of the *Gymnogrammas*, but they have a slight sprinkling, which is of a greyish colour, and seen both on the upper and under surface. To succeed well with this Fern it must be grown in the stove, and should be potted in a compost of peat, leaf-mould, loam, and sand, in about equal parts, using plenty of drainage. The plants should have sufficient pot room, but not be over-potted. Watering must also be carefully attended to, for although the fronds are very slender they take up a great amount of moisture, and if the plant is allowed to become too dry in the pot the fronds will quickly shrivel up. A moist atmosphere is beneficial, but no water should be given overhead. Young plants may be obtained from spores, or by rooting those produced on the fronds. For this purpose small pots should be filled with light sandy soil, and placed so that the young plants may be pegged down and take root before being detached from the fronds.—F. H.

THE FRUIT CROPS.

SCOTLAND.

Brodie Castle Gardens, Forbes.—Fruit crops very variable in this district. Strawberries in general a good crop. Raspberries extra good here. Gooseberries fair. Red Currants moderate. Black Currants very poor. Apples, some trees laden, others scarcely any. Pears fair, but in some gardens in the district extra good. Plums good. Apricots middling. Cherries—Morellos good, others fair. The weather has been far too dry for the light soil here, so that very few crops will be an average.—J. CLARK.

Tynninghame, East Lothian.—This season's fruit crop is much below the average as a whole. Peaches did not ripen their wood last autumn, and old trees have suffered much. Apricots are a poor crop, trees very healthy. Plums thin generally, but Jefferson's and Victoria up to their usual form. Cherries are almost a failure, and Pears also are a very thin crop, early sorts bearing fair quantities. Of small fruits Gooseberries are the least plentiful, while Raspberries and Strawberries have been abundant and fine.

GARDEN Potatoes were somewhat checked by drought in June, so that the crop will not be up to the average as to weight, but quality is good and as yet no disease. Insects have been very plentiful, the Onion maggot having been more destructive than usual. Cauliflower and Broccoli plants were much damaged by grub, though not so badly as in 1888.—R. P. BROTHERSTON.

Wemyss Castle, Fifeshire.—The fruit crops in this district are very much better than what could have been expected after such a season as the last. Apples a fair average, East Lothian Seedling, Ecklinville, Stirling Castle, and Irish Pippin seldom failing to produce a fair crop. Pears are under the average. Plums on south-west exposure good crop; on standards, or where exposed

to the east, a failure. Apricots under the average. Peaches *nil*, always an uncertain crop outside in this district, and a good many complaints of a scanty crop under glass, especially on late varieties where the wood was imperfectly ripened. Gooseberries, Black and Red Currants heavy crop. Raspberries fair average, except Fillbasket, which has been a failure, not even making growth for a future crop; till this season it has always been first-class. Strawberries have been all over a grand crop, especially Burghley President and Noble. In the early part of summer caterpillars were very numerous, and strong measures had to be used to clear them from the fruit trees and bushes. All the Hazel bushes were quite denuded of foliage by the middle of June, and the Elms very much destroyed. Owing to last year's cold and rain many choice kinds of herbaceous, alpine, and bulbous plants perished.—JOHN CLARK.

IRELAND.

Hillsborough Castle, Co. Down.—The prospect of an all-round good year of hardy fruit in this district was very promising in early spring. The fruit trees generally were a mass of bloom, but owing to the cold, wet, sunless season of 1888 the wood did not ripen, and the blossoms, especially those of Apricots and Pears, failed to set. There is a good crop of Apples on some trees, such as Ecklinville, Lord Suffield, Manks Codlin, Margil, Peasgood's Nonsuch, Sam Young, but on others there are none. Plums are below the average. Cherries promised well, but the long drought caused a great many to fall off. Raspberries are an average crop. Currants and Gooseberries are extra good crops, and there were excellent crops of Strawberries.—THOMAS BRADSHAW.

Downhill, Coleraine, Co. Derry.—Fruit crops generally in this district are fairly good. Apples very abundant, but rather small owing to the weight of fruit the trees are carrying. Peaches are not grown outdoors in this district. Pears are about half a crop, but promise to be of good quality. Plums an average crop. Apricots under glass coping a very heavy crop. Dessert Cherries a failure. Morellos about half a crop. Figs outdoors, given a fine autumn, promise a good crop. Strawberries a good crop, but soon over, owing to the long drought. Raspberries only moderate. Currants all good. Gooseberries a heavy crop and of fair size. All bush fruits are very free from caterpillars, and all wall trees generally in a clean healthy condition. Nuts are not cultivated in this district.—H. CARTER.

Charleville Forest, Tullamore, King's Co.—The crops here are as follows: Apples and Pears below the average, excepting some sorts, for instance, Orange Pippin, Keswick Codlin, Manks Codlin, and Ribston. Some trees of Ribston on walls have good crops; Cox's Orange and Blenheim a failure. Pears are much below the average. Plums, some are a good average; Green Gage below. Cherries an average, especially May Duke and the Bigarreau; Morellos below the average. Damsons a partial crop; some good, other trees bad. Nuts not up to the average. Strawberries good, but short period of supply. Currants heavy; Black not up to average in size. Raspberries good; want rain. Kitchen garden crops good.—J. ROBERTS.

Powerscourt, Enniskerry.—Kitchen Apples average, except Lord Suffield, Keswick Codlin, Ecklinville, and Blenheim. Dessert kinds also an average, except Irish Peach and King of the Pippins. Pears scarce, except Beurré de Capiaumont. Plums average crop, except Damsons, which are a failure. Cherries very spare crop of all the kinds grown. Raspberries large crop and good. Gooseberries very fine crop and large. Strawberries immense crop of fine fruit. Red and White Currants plentiful. Black ditto under average. Medlars good crop. Filberts under average. Cobs scarce.—D. CROMBIE.

Viceregal Gardens, Dublin.—Fruit crops in this neighbourhood are very partial, Apples being considerably under average, and Pears a shade worse. Walls and cordons have a fair sprinkling, but standards and pyramids are almost *nil*. Apricots are very poor. The blossoms were scarce to

begin with, and after setting most of them came to the ground. Plums are a fair average crop. Cherries below average. Peaches are very scarce, but the trees have a more healthful appearance than they have had for some years past and no blister, the result of our fine warm weather. Small fruits are very good with the exception of Strawberries, which were sadly burned up during our hot, dry weather in June. Currants in variety are good. Gooseberries heavy crop. Raspberries are also a fine crop. Rain, which was greatly needed here, has now fallen plentifully, and crops of all sorts are now looking well.—G. SMITH.

Castle Forbes, Newtown Forbes, Co. Longford.—Our fruit crop in the neighbourhood is not a good one. Bush fruit is not so good as last season. Apples, although promising to be a heavy crop, will be very poor owing to the wet and cold at the time the trees were in bloom. Strawberries were fine; also Currants; Raspberries but poor; also Gooseberries. This was owing to caterpillars eating all the leaves off last season. This year I spread a quantity of gas-lime on the surface around each bush, and not a leaf is touched. Peaches good under glass; none grown outside here, it is too cold. Pears and Plums are a medium crop.

VEGETABLES good all round.—J. RAFFERTY.

Straffan House, Co. Kildare.—Apples here with one exception (Besspool) are abundant and good, and if three-fourths could be taken off there would still remain a good crop. Pears are under average; there are fair crops on Marie Louise, Beurré Diel, Winter Nelis, Flemish Beauty, Glou Morceau, and Knight's Monarch. Apricots are a failure; and the same may be said of Peaches, except Early Alfred, which is very hardy and one of the very best flavoured Peaches in cultivation inside or out. Cherries very good. Plums of the following sorts are carrying good crops: Kirke's, Victoria, Coe's Golden Drop, Jefferson's, and Transparent Gage; the first two never fail here. Small fruits of all kinds plentiful and good, except Black Currants, which were quite destroyed by aphids. Strawberries were abundant and good; my greatest favourites are still Vicomtesse Hélicart de Thury, President, Sir J. Paxton, while Loxford Hall Seedling has eclipsed all other late kinds here, being a heavy cropper, nearly equal to British Queen in flavour.—FRED. BEDFORD.

Lismore Castle, Waterford.—The general fruit crop in this district is above the average, with the exception of Apples and Pears. Strawberries were a heavy crop, but the season was short-lived on account of the hot dry weather in June. Plums and Cherries, also all kinds of bush fruits, especially Gooseberries, are plentiful. It is very disappointing to see some varieties of Apples altogether devoid of fruit after an unusually fine show of blossom and such a favourable spring. Apricots are also carrying good crops. Peaches (outdoor) are unusually fine. The varieties which succeed best are Royal George, Noblesse, Barrington and Walburton Late Admirable, but it is impossible to grow Peaches out of doors in this variable climate without the protection of glass coping which we have on all our walls.—P. AHERNE.

WALES.

Powis Castle, Welshpool, Montgomeryshire.—Apples and Pears in this neighbourhood are much below average. Plums average crop, but no Damsons. Apricots, Peaches, and Nectarines almost a failure; the wood did not ripen well last year; consequently what few set did not stone. Small fruits abundant and good. Nuts good.

POTATOES, early sorts, very good. Imperator, Champion, and Magnum Bonum are everywhere looking well.—HORACE HUNTLEY.

Glanafon Gardens, Taibach, Port Talbot.—In reply to your inquiries respecting the fruit crops in these gardens and district, I am very pleased to say that the season has been a very good one. Strawberries were very good, especially that most excellent new variety Laxton's Noble, doubtless the finest early Strawberry ever sent out. All bush fruits are excellent crops. Apples and

Pears fairly good, but not generally so. Apricots and Plums are light crops. Outdoor Peaches good crop; indoor, excellent, the flavour of the latter being especially good. Nectarines are a heavy crop indoors, with a delightful flavour.—H. MORRIS.

Bodnant Gardens, Eglwysbach, Denbighshire.—I herewith beg to hand you (as requested) a short report on the fruit crops in this neighbourhood. Small fruit such as Strawberries, Raspberries, Currants and Gooseberries were an excellent crop. Apples abundant. Pears poor, although we had a fine show of bloom which escaped the frost. Plums are good. Apricots *nil*.—J. SANDERSON.

The Quinta, Chirk.—Apples rather under the average—Warner's King, Stirling Castle, Tower of Glamis, Keswick Codlin, King of the Pippins, Cox's Orange, Peasgood's Nonsuch, and a few others bearing full crops. Pears decidedly under the average—Beurré d'Amanlis, Beurré Diel, and Doyenné du Comice being fairly good. Cherries under. Plums the same; the best are Kirke's and Coe's Golden Drop. Apricots under. Bush fruits are a little under, and Black Currants are small; while Strawberries were very good and of fine flavour.—JAMES LOUDEN.

Crosswood Park, Aberystwith.—Apple trees never looked more promising than in the spring. They were covered with blossom, but with a few exceptions it nearly all dropped, doubtless owing to the unripened wood of last season. The few exceptions are Lord Suffield, Hawthornden, Warner's King, and King of the Pippins, which are about an average. Pears are better than the Apples. Williams' Bon Chrétien is a good crop; also Beurré Diel and Beurré d'Amanlis. Peaches and Nectarines are a poor crop. Strawberries have been very good, much above the average. The best have been Laxton's Noble (which I believe has a bright future before it), President, James Veitch, and The Captain. Bush fruits are all very good crops and of good flavour, Gooseberries especially. Nuts are below the average. Apricots are very scarce and below the average.

The appearance of the vegetable crops is very promising. Potatoes are very good, and no disease to be seen as yet. Peas are better than they have been for some years. Carrots, Turnips, Beetroot, Parsnips, and Salsify are all very good. Onions are rather smaller than usual on account of the drought last month. They may improve with the nice showers we are now having.—R. C. WILLIAMS.

Cardiff Castle, Cardiff.—Apples with a very few exceptions are a heavy crop here; many of the trees were so heavily laden that they had to be propped up to keep the branches from breaking. The trees are young (some fifteen years old), clean and healthy, and in fine bearing condition. The following varieties are bearing heavy crops of large fruit and of good quality: Ecklinville Seedling, Lord Suffield, Pott's Seedling, Keswick Codlin, New Hawthornden, Stirling Castle, Lord Burghley, Nelson's Glory, Wellington, French Crab, Annie Elizabeth, Beauty of Kent, King of the Pippins, Irish Peach, Cox's Orange Pippin, Blenheim Orange. Beauty of Hants, Lane's Prince Albert, Sturmer Pippin, Worcester Pearmain, Waltham Abbey Seedling, Cellini, Alfriston, and Rushock Pearmain. Pears.—Pyramid trees in the open quarters are a failure, with a few exceptions, such as Jargonelle, Beurré d'Amanlis, Marie Louise, Glou Morceau, Bergamote d'Esperen, Durondeau, Williams' Bon Chrétien, and a few others with half a crop. Some varieties on the walls are bearing a full crop, while others have scarcely any. The best are Jargonelle, Beurré d'Amanlis, Beurré Diel, Marie Louise, Beurré Clairgeau, Glou Morceau, Winter Nelis, Beurré Bosc, and Easter Beurré. Apricots a heavy crop, which ripened well. Peaches.—The trees here are young—planted three years since—and are carrying a fair average crop of good, clean fruit. Plums an abundant crop, but the trees were so much blighted that I thought at one time the fruit would not come to maturity. The heavy rainfall, however, which we had during July washed the trees, and the fruit has grown to the ordinary size and ripened well. Strawberries were a heavy crop

and the fruit large and excellent in quality. The variety that suits best here is President. Gooseberries, Red and White Currants I cannot grow here, for the sparrows destroy the buds during autumn and winter. The Vines in the vineyard at Castle Coch are almost a failure this year, on account of the wood not ripening thoroughly last year. The Vines on the castle wall here have not more than half a crop, as the wood did not ripen.—A. PETTIGREW.

Margam Park, Glamorganshire.—Apples are under the average; so are Pears—quality very good. Plums, Cherries, and Peaches very good. Apricots deficient. Currants, Raspberries, Gooseberries, and Strawberries first-rate. Peach trees are apt to become cankered in the open, but for the first six years or so they are very fruitful and satisfactory.—J. MUIR.

Slebeck Park, Pembrokeshire.—The Apple crop in this county is a fair one generally this season, and the fruit is clean and the trees healthy. Here we have very fine crops of Blenheim Pippin, which is rather an exceptional case in this district. The trees on walls are also very good. Pears are a failure here, as the trees did not bloom. Last season being very wet and sunless no buds were formed. A large number of our trees are on the Quince stock, and there are a few fruits on some of them, but on trees on the free stock I cannot find a fruit. Plums and Damsons are nearly a complete failure, with the exception of the Victoria. The trees bloomed well and gave great promise, but wet and stormy weather set in afterwards and destroyed the crop. The trees also look very unhealthy this season, even those that previously had been very healthy and vigorous. Peaches and Apricots are not cultivated to any extent outdoors in this county, as they do not generally succeed. Small fruits and Strawberries are a heavy crop.—G. GRIFFIN.

CHANNEL ISLANDS.

The Gardens, Somerset Terrace, Guernsey.—The fruit crop is very partial here this year. Small fruit is an average crop; in some instances light, in others very heavy. Raspberries are very heavy I believe everywhere. Strawberries pretty good. Gooseberries very heavy where the sparrows left the trees alone. In the gardens here I am obliged to net the trees or I should not get a Gooseberry. Currants of all kinds are good, except in a few cases where the Black ones have failed. Apples are a light crop; the trees bloomed well, but the fruits dropped wholesale, and many that remain on the trees are deformed and will be of little use. The same may be said of Pears. I think the cause must be the sunless season of 1888. Peaches are not much grown here against outside walls. Where they have been slightly protected, they have set well and are swelling freely.—E. PETERS.

SUPPLEMENTARY REPORTS.

Addington Park, Surrey.—The fruit crops here and in the neighbourhood have been, on the whole, fairly good this season. Strawberries promised to be exceptionally good, but the few days of hot sun rendered the season short. The size and flavour of the fruit were quite up to the average. The same may be said about the Raspberries. Peaches out of doors are very abundant, but small. The Apple and Pear crop may be similarly described.—W. WHALLEY.

Hunstanton Hall, Norfolk.—Apples and Pears very few. Plums a fair crop. Cherries thin. Strawberries good. Raspberries very abundant. Black, Red, and White Currants about half a crop. Walnuts and Filberts very scarce. Gooseberries a good crop. I do not remember ever seeing the fruit trees in general so promising as in April and May, but the brilliant prospects soon vanished.—G. NISBET.

Higheclere Castle, Berks.—Apples are a very poor crop, the worst I remember; bloom was abundant, but soon dropped. Pears also below average. Apricots poor. Cherries about an average. Plums very abundant and good. Strawberries a heavy

crop and quality excellent, but soon over. Bush fruits quite up to average. Raspberries very good and fine. Peaches are a fair crop, outdoor trees being healthy and cleaner than usual.—W. POPE.

Strathfieldsaye, Hants.—In our Apple orchard of several acres of old and young trees, all in fair condition, there is not positively one gallon of fruit. The trees blossomed splendidly, and expectations ran high of an abundant crop till about the 1st of June, when the caterpillars of the winter moth hatched, and within the space of ten days the trees were absolutely as bare as at midwinter. They are now, however, clothed with fresh foliage, but I fear that, unless we have a favourable autumn for ripening, the trees will not bear well next year. Pears suffered in the same way, though to a less extent. Small fruits have been most abundant. Peaches suffered terribly from the cold, damp winter following a cold and sunless summer. They have, however, made capital growth this season, and promise to ripen a few fine fruit.—J. BELL.

Clarendon Hall, Salisbury.—The fruit crop in this locality is anything but an all round good one. Apples though good in some orchards are by no means general, and we have not had so few for some years. King of the Pippins and Irish Peach are the two best this year among dessert kinds, and Lord Suffield and Dumelow's Seedling among kitchen kinds. Pears are with us more satisfactory, and we have fairly good crops of the following kinds: Doyenné d'Été, Marie Louise, Marie Louise d'Uccle, Williams' Bon Chrétien, Beurré Diel, Beurré Rance, Brockworth Park, and others. Plums are more satisfactory. Green Gages are an excellent crop, as also are Victoria and Reine Claude de Bavay; Kirke's Blue and Orleans are carrying fairly good crops. Cherries a good crop, especially of such kinds as May Duke, Kentish Bigarreau; Morellos are also a good crop. Strawberries have been good and ripened well. All bush fruits have been good; Gooseberries a very heavy crop. Nuts of all kinds are almost a failure.—C. WARDEN.

Flixton Hall, Suffolk.—The fruit crops this year in this district may be described as variable. In cottage gardens, where there are trees and orchards near farmhouses along the Waveney Valley, Apples are plentiful. In gardens on higher ground the crop is only partial. Here Apples are a failure; the young foliage was almost destroyed by caterpillars. Pears blossomed well, but did not set much fruit. Apricots, Peaches, and Nectarines are below the average. The blossom of the first-named was much damaged by hail at the time the trees were in bloom. Plums are fairly plentiful, but Cherries of all kinds are thin. Strawberries and Raspberries were a heavy crop and good, the latter particularly so. Gooseberries and Currants were plentiful and free from blight. Walnuts are a thin crop, and Filberts a failure.

POTATOES at one time looked promising, but now are showing signs of disease.—H. FISHER.

Tring Park, Tring.—Apples are below an average crop here. Pears of the following varieties on south walls and cordons are carrying fair crops, viz., Beurré Bachelier, Beurré Gifford, Beurré Six, Baronne de Mello, Beurré d'Amanlis, Beurré Rance, Beurré Sterckmans, Beurré Clairgeau, Durondeau, Clapp's Favourite, Doyenné d'Alençon, General Todleben, Williams' Bon Chrétien, Mme. Treve, Glou Morceau, Louise Bonne of Jersey, and Zephirin Gregoire. Apricots are a complete failure. Plums on walls good crop. Cherries (sweet) under; Morellos good average. Bush fruits of all kinds plentiful and good. Strawberries are undoubtedly the crop of the year. Walnuts failure. Nuts very few.—ED. HILL.

Thorpe Perrow, Yorkshire.—It is difficult to say when is the right time to give a correct account of the fruit crop. Three weeks since I might have said many of our Apple trees were carrying a heavy crop, but, owing to drought and other causes, many of the trees have cast nearly all their fruit; some few have pulled through pretty well; Lord Suffield and the King Apple are the best. Pears are a moderate crop. Peaches are bad, caused by the want of sun to ripen the wood

last summer; in fact, the trees were half dead in the spring to commence with. Apricots are bad generally. Plums, some trees are good, especially Victoria against the cottage walls in this neighbourhood. Bush fruits have been very abundant, also Strawberries.

THE early Potatoes are a small crop, owing to the want of rain. Late Potatoes promise to be a good crop; the rain came just in time to save them.—WILLIAM CULVERWELL.

Sandringham, Norfolk.—Strawberries good. Bush fruits abundant and good. Trained Plums fair crop, but terribly blighted. Peaches and Apricots a failure. Pears very moderate. Apples a failure after one of the finest blooming seasons I ever saw; espaliers are the best, though not regular. Cherries very poor. A few Nuts.

MANY kinds of Potatoes very much diseased.—CHARLES PENNY.

Folkington Manor, Sussex.—With regard to Apples, it is noteworthy that those trees which produced so much bloom have the least fruit upon them. I attribute the cause mainly to the severe frosts of the first week in October of last year, when nearly every tree was affected by them so much as to cause most of the foliage to fall prematurely and before the buds had reached maturity. There will be about half a crop of Apples. Pears only one-third of a crop. The Pear trees, like the Apples, were much injured by the frosts above mentioned. About Plums I can give a better account, as those of the Victoria type are bearing well, no trees of this sort having missed. Green Gages are also a good crop and promise to be of large size; Washington and Orleans as well as Coe's Golden Drop carry as many as will be wanted. Cherries on standards only moderate, but on walls fairly good in crop and quality. Apricots none. Peaches a fair crop on all trees. Small fruits were all plentiful, clean and first-rate in quality. Figs are a fair crop on untrained trees, while those subjected to a limited space have only a fruit here and there. Damsons are scarce here and the fruit small. I am pleased to say we have not been troubled with caterpillars or any blight of any kind sufficient to injure leaf growth, and all the trees look clean and have made healthy growth, so that if we get a fine autumn to mature fruit buds and ripen the wood, prospects for another year will be encouraging.

About a fortnight ago the Potato disease made its appearance and is rapidly spreading.—THOMAS RECORD.

Livermere Park, Bury St. Edmunds.—The fruit crop of 1889 is, on the whole, rather better than that of 1888. Apples are very scarce, though some few kinds have an average crop, the best of all being King of the Pippins, every tree of this having a full crop. A few other kinds have fair crops, notably Winter Queening, Dutch Codlin, Reineette du Canada, Hoary Morning, Manks Codlin, and one or two local sorts. Two stunted trees of Wellington are bearing well, and the fruits are larger than these trees have ever borne. All the strong healthy trees of Wellington have got no fruit, showing that the late growing season and bad ripening of the wood last year are the main causes of the general failure now, the two trees in question making scarcely any growth in 1888. A curious fact in connection with the Apple crop is that on several trees which are practically fruitless, just a few fruits have set on the lower branches and are swelling well. Had we any spring frosts this year we should probably have been content to blame them for the failure, and pointed to these few fruits low down as conclusive proof of this. Pears are far better than Apples, for more than half of the trees have full average crops. Duchesse d'Angoulême on a south wall is heavily laden, Marie Louise (west wall) is again good, while among others in the open garden Williams' Bon Chrétien is very good indeed. Apricots are rather thinly cropped, but I think almost every flower that opened must have set, and this without any aid from protection, in a low-lying garden where frosts are generally severe. Plums on walls are a full crop and promise to be good. A bad attack of aphid was blown up by the east wind a month ago,

the air being filled with them for two or three days. Summer pruning, however, got rid of the greater part of them and heavy thunderstorms did the rest, so that the trees are now clean and healthy. Standard trees were robbed, as usual, of all their fruit-buds by the bullfinches. Damsons shared the same fate, but, strange to say, the Bullace always escapes, and seldom fails to carry a good crop. Sweet Cherries never do well here; most of the fruit on standards turns yellow and drops in the stoning. Morellos under average and small, the trees being attacked by a disease similar to the branch dying on Apricots. *Prunus triloba* suffered from the same thing, as also did the double white Cherry under glass. In each case many of the young shoots died after growing well from 3 inches to 8 inches long. Figs outdoors are a complete failure in this district. Medlars much under average, though one tree is carrying a good crop. Currants, Red, White, and Black, have borne an average crop of fine fruit, and all bushes look healthy. Raspberries an excellent crop. Gooseberries good where the buds could be saved by netting in winter. Strawberries a good crop, but the season was short in consequence of the dry weather. Tomatoes promise well, and none quite equal the large Red, though Horsford's Prelude, Hackwood Park, and Perfection are all doing well. Peaches and Nectarines planted last autumn are doing well, being free from blister and carrying a full crop. These trees have been grown under glass as double cordons for many years; they were cut down last year and trained on the extension system; the extra freedom seems to have given them a new lease of life. All Peaches here are on the Plum stock. We have several varieties, the best of which are Violette Hâtive, Royal George, Grosse Mignonne, Noblesse, Red Magdalen, Walburton Late Admirable, and Barington. Add to these A Bec and possibly Hale's Early, and you have a selection of good flavoured kinds that will extend the season over nearly three months if all are grown in the same house. Earlier sorts than Hale's I do not think worth growing. Grapes (outside) are a very poor crop and late. Filberts a complete failure. Walnuts about a third of a crop.

Kitchen garden crops look well generally. Potatoes are fine on well cultivated ground, but the tubers are small in fields. Disease has set in rather badly, the first to suffer among twenty sorts being Beauty of Hebron.—J. C. TALLACK.

Bayham Abbey, Lamberhurst, Kent.—The Apple and Pear crops, generally speaking, are the worst that have been known for years. Some favoured spots where the caterpillar did not appear have a fair crop. In other places orchard and standard trees in gardens are entirely eaten up. The trees promised well; some leathery-leaved kinds such as Beurré d'Amanlis, Passe Colmar, Pitmaston Duchess have escaped, and are carrying heavy crops. Strange to say, all wall trees escaped the plague of caterpillars, and are carrying good crops. How is this? Hundreds of Oak trees were entirely stripped of their leaves, and standard Rose trees were in the same plight where not hand-picked or washed. Roses on walls also escaped. Strawberries, Raspberries, Gooseberries, Red and White Currants, Plums and Damsons were a heavy crop. Cherries and Black Currants half a crop. Fruits under glass have done well.—W. JOHNSTONE.

Childwall Hall, Liverpool.—Our garden is situated about five miles from the Liverpool Exchange, and contains a fairly representative collection of hardy fruits, and of Apples in particular. Of the crop of Apples I am sorry to be unable to give anything like a glowing account. Although not affected by caterpillars to any extent, many of our trees have suffered from red spider. The varieties, out of about fifty, carrying something like a full crop are Hawthornden, Lord Derby, Prince Albert (Lane's), Lord Suffield, Potts' Seedling, Queen Charlotte, Ringer, Ribston Pippin, Small's Admirable, Sturmer Pippin, and Yorkshire Greening. Cherries, especially Morellos on walls, have done well this year. All kinds of Currants have done splendidly. Damsons—we have a better

crop of these than for several years past. Last year the trees were denuded of both foliage and fruit on one side, owing to a severe gale of wind in May. This year we have escaped heavy gales, so that the foliage of all forest trees, as well as of fruit trees, looks healthy. Gooseberries are carrying fair crops. Pears, Autumn Bergamot, Beurré d'Amanlis, and Old Colmar on espaliers; Beurré d'Aremberg, Beurré Diel, Glou Morceau, Marie Louise, and Winter Nelis on south walls have fair crops. There is no doubt their fruitfulness has been adversely affected by the want of sun last season. Plums—the only varieties we have had a crop on this year are a local one called Hall Wood Plum (on trees in the open) and Victoria on walls. The latter is the Plum *par excellence* for this locality, where the finer varieties, such as Coe's Golden Drop and Jefferson's seem too delicate. Raspberries were a plentiful crop, and the warm weather we had suited them admirably. Strawberries—these (unlike last year when very little bloom showed on any variety) have all borne well.—THOMAS WINKWORTH.

Aldenham Park, Bridgnorth, Salop.—Apples and Pears are almost a total failure in and around this district, and in those gardens, with the exception of Jargonelle and Bergamote d'Esperen, which are carrying fair crops, I am on a par with my neighbours. In April the trees looked promising for an average crop, yet by the middle of June the trees were almost leafless from the attacks of insect pests. However, owing to the rain we had in July, the trees are now looking better than I could have expected. Strawberries, Currants, Gooseberries and Raspberries were very good. Morello Cherries are above the average. Plums—Coe's Golden Drop, Jefferson's, Reine Claude de Bavay, Orleans, and White Magnum Bonum are bearing good crops. Apricots are a thin crop.—THOS. S. CANNING.

GARDEN FLORA.

PLATE 717.

SEEDLING OR HYBRID NARCISSI.

(WITH A COLOURED PLATE OF, 1, N. INCOMPARABILIS LEEDSI GLORIA MUNDI; 2, N. INCOMPARABILIS PRINCESS MARY OF CAMBRIDGE; 3, N. LEEDSI BEATRICE.)*

I THINK it was Canon Ellacombe who first told us of that delightful tradition which yet lingers in the flower and fragrance-loving Arabic mind as to the bunch or cluster Narcissus of Algeria, of which the True Prophet said, "He that has two loaves of bread let him sell one for flowers of the Narcissus, for bread is food for the body, but Narcissus is food for the soul." Far-fetched as this paraphrase may appear to be, it is to-day in Covent Garden a literal fact, for you may therein find the flowers or the brown bulbs of this sweet and delectable flower exposed for sale side by side with those fruits of the earth that are pleasant to the eye and good for food also. In a word, the immortal Narcissus is one of the necessities of existence in this, our time, just as it was for the thoughtful in Mahomet's own days.

No doubt, as the poet has it, Nature is ever and always a dear old nurse, but we are apt to toddle away from her so soon as the power comes, and in this way the hybridisers have left Nature a step or two behind in their race after new forms of Narcissus. Those illustrated are all seedling improvements on Nature's own wild or native productions. This statement may at least for the moment be accepted as a fact, although when all the forms of Nature's hybrids, such as N. Bernardi, are fully known,

* Drawn for THE GARDEN in Messrs. Barr's grounds at Tooting by H. G. Moon, April 29, 1889. Lithographed and printed by Guillaume Severeys.



GROUP OF MARCISSI

1 GLORIA MONDI 2 PRINCESS MARY OF CAMBRIDGE 3 HERDSE BEAUFORT

it may be found that the sly old dame, after all, is as wise as the children she tends and admires.

The artist in so truthfully illustrating these flowers in form and colour relieves me of a world of trouble. The first variety on our list,

N. GLORIA MUNDI, is a seedling raised in the now celebrated Backhouse collection, and a glance at our figure will show that it may fairly rank in equality with the Imperial Daffodils, Emperor and Empress, which originated in the same garden. The flower is of medium size, with fairly well imbricated segments of a clear primrose-yellow hue, cup large and much expanded, and, as shown in the plate, heavily stained with orange-scarlet or red.

N. PRINCESS MARY OF CAMBRIDGE is a paler and better-known variety of similar form, the perianth being creamy white, and the cup clear orange-yellow, and also very widely expanded. It was raised by Mr. Leeds.

N. LEEDSI BEATRICE is a lovely variety and an especial protégé of my own. I was, years ago, in the bulb grounds at Tooting one mellow evening in late April when there was a glorious setting sun, and Mr. Barr approached me with blooms of this as then unnamed seedling in his hand. We both looked on the nameless beauty with delight, and then came the breaking of the dream. "What shall we call it?" said Mr. Barr. "Oh!" I said, "call it Beatrice," without a moment's hesitation; and so this pearly flower, with the softest of flesh-tinted suffusion in its cup, was henceforth to be known as Beatrice. But beauty in Daffodils, unfortunately, has very often to be paid for. The "food for the soul," like bread and wine, has its price, and so if you are particularly anxious to plant bulbs of Gloria Mundi, I see that it is obtainable at the modest sum of two guineas a root. Forty-two shillings for Gloria Mundi, but forty-two pence will purchase a root of Princess Mary of Cambridge; while the sweetly modest Beatrice of Backhouse, possessing, as the slave owners say, "the purest and highest type of beauty," is surely cheap at a crown or so a bulb. After all the mere purchasing price is not everything so far as these garden seedling Narcissi are concerned, for as a rule they not only become more beautiful, but increase rapidly year after year. Again, I notice that the amateur who willingly pays fifty guineas for an Orchid from Burmah or Bogota, actually frets and fumes when he is asked to pay five guineas for a root of such a softly pure and queenly Daffodil as is Mme. de Graaff.

The great point most noticeable about the Leeds and Backhouse and other seedling Narcissi is their growing and increasing power under cultivation in our gardens. Even the natural hybrids before mentioned, viz., N. Bernardi, from the mountain heights of Gedre and Gavarnie, are wonderfully amenable to cultivation, and increase in beauty as in numbers, year after year. This being so, one need not hesitate so much at the mere upset price as it were, since the real trouble begins when we pay high prices for those sorts which "haste away too soon." The thing really serious is when they

Die, as your hours do and dry away,
Like to the summer's rain,
(Or as pearls of morning's dew,
Ne'er to be found again.

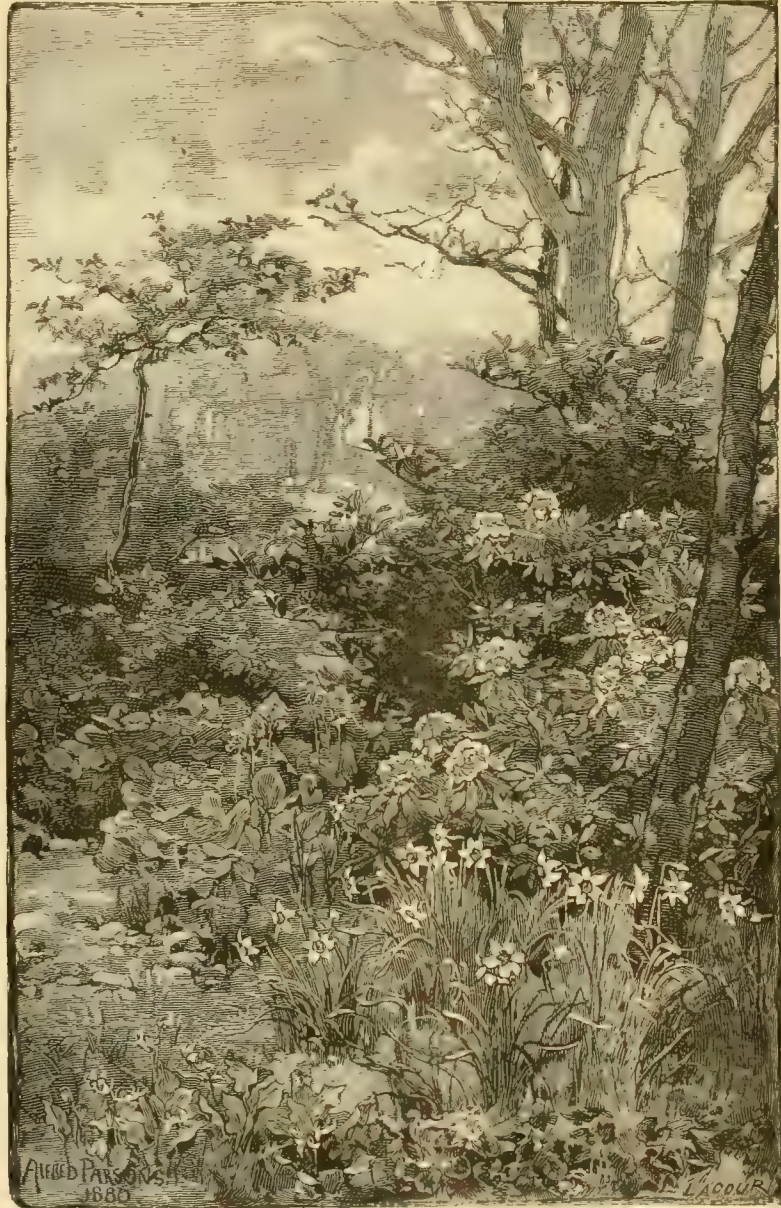
As to the culture of these delightful flowers of spring, I strongly recommend the annual lifting and replanting of the bulbs in July. On light, sandy suitable soils the bulbs may apparently increase in beauty and vigour year by year, as may be seen in old-established clumps

and masses. All I can say is that even here in the deep rich alluvium of the College Garden wherein N. maximus and Sir Watkin grow a yard high during favourable seasons, even here we find the permanent advantage of lifting and replanting all Narcissus bulbs in July or early in August. Deep culture and annual lifting and replanting will be found a practical panacea for many if not all the diseases and drawbacks to which Narcissi are subjected in our climate. Our only manures are well de-

FLOWER GARDEN.

THE FUCHSIAS IN HYDE PARK.

I AM glad you make special note of these in your discriminating remarks on London parks and gardens. At one time, beds, masses, borders of Fuchsias were tolerably common in gardens up and down the country. Such old varieties as *nivalis*, *Riccartoni*, *globosa*, *Venus Victrix*, *Nelsoni*, and various variegated-leaved varieties such as *Meteor*, were more or less generally used. Then during the bedding



Daffodils in the wild garden.

composed leaf-mould, coarse sea sand, and now and then a dressing of wood ashes.

A glance at the "three graces" so faithfully portrayed by Mr. Moon will convince the most sceptical that there is a world of satisfying beauty to be gained by the timely planting of these "golden earth stars of the spring," and in conclusion I may add that now is the best planting time, and that there should be no delay.

F. W. BURBIDGE.

Dublin.

fever most of these were grubbed out for foliage and flowering Pelargoniums. But the Hyde Park Fuchsias are a new departure on past practices, inasmuch as they consist of specimen pyramidal Fuchsias of differing sizes, but nearly all equally perfect in single file or in groups of three or more on the green Grass. The specimens are so perfect that most of the base branches kiss the turf, while from base to summit the plants are a mass of flowers. Even the groups of specimens are placed sufficiently far apart to allow every branch and twig to be distinctly seen. In a word, these Fuchsias, though mostly of older

sorts, are really first-rate greenhouse specimens placed in the open on the green Grass; and the effect is not only pleasing, but a gratifying surprise. The beauty of the fine specimens so well furnished with flowers is greatly heightened by the verdure of the turf on which they rest. The result may be slightly marred by the limited variety of sorts as well as the monotonous mode of furnishing, each plant and group being very much like one another, and so on throughout. Perhaps this is, however, almost inevitable in a new departure of this sort, as it must needs take considerable time to get up plants of the stature and age of these that on the whole have been used to such good purpose to add a new feature of interest and beauty to the furnishing of Hyde Park.

The place for the Fuchsias has also been selected with considerable skill—the border between the main walk and Park Lane. There they find considerable shelter without an excess of shadow, and the plants fit the site as if grown for it, which they doubtless were. But there are also very effective beds of Fuchsias, variegated and plain, in the park, suggesting other combinations of these showy and graceful flowers. Effective as these standard Fuchsias are, possibly much of the formal monotony might be abolished by flanking the tall plants with groups or borders of dwarfs. I wonder what modern Londoners would think of masses or edgings of the dwarf variety of *navalis* about 6 inches high, or the small-leaved *microphylla* with its unfuchsia-like leaves and flowers. Such and many others would be a marvellous climb down from pyramids 6 feet, 10 feet, or even more in height. And then there might be bush Fuchsias of all sorts and sizes as well as pyramids, and what may be termed many-stemmed bush Fuchsias of great size, with forests of side branches at all angles, from flat on the turf to right angles with it. Why not also have a Fuchsia garden side or corner in Hyde Park, or other parks or gardens? The family is numerous and strong enough to have a niche or corner all to itself. This might lead to the resuscitation of many old species and varieties, now well nigh lost, such as *fulgens*, *corymbiflora*, &c., these being admirably adapted for open-air culture. I have seen masses and lines of the latter from 6 feet to 10 feet high laden with long panicles of brilliant blossoms unlike those of any other plants in the garden, and not excelled in interest and beauty by any other flowers, ancient or modern. "No use for cutting," I beg pardon; no flowers were more useful for the dressing of tall vases for drawing-room and epergnes for the dining-room. But we do not grow flowers in our public parks for cutting. Fuchsias would make a grand display in our parks all of themselves. Fuchsia groups or gardens would probably also lead to similar groups of other species or families, and this use of separate families in different parts of the same park or garden might prove almost the first and longest step towards the breaking up of that monotony of furnishing which weakens to insipidity not a few of our landscapes. By our excessive mixtures we do our utmost to make all our parks and gardens alike—mere repetitions of the same blends, forms, colours, subjects. By furnishing in families, or according to natural affinities, each genus or species would be able to produce its own distinct impression before being superseded by the next. In a word, individuality with all its refreshing interest and variety would take the place of the mixtures that too often degrade and disfigure sites and scenes possessing many natural attractions instead of transforming all such and even commons, parks, and gardens into "things of beauty and joys for ever."—D. T. F.

The mention of these being so fine in Hyde Park simultaneously with "W. W.'s" praise of them in *THE GARDEN* (p. 172) will, perhaps, lead to their extended use in other flower garden arrangements. Not a word too much has been said in their praise. Pelargoniums and other like things may give us colour effect, but there is little individual beauty about them. Not so with the Fuchsias, for they will bear inspection and lose nothing thereby. Where old plants are used, "W. W." recommends starting them in a little warmth before putting

them out. Here in Suffolk the Fuchsia is a favourite flower with some of the cottagers, and they have fine beds of them without glass or convenience of any kind. During winter the plants are stored in sheds or cellars. In spring, upon the first signs of growth they are brought forth and stood in the warmest and most sheltered corner the garden affords, and in May they are planted in the beds, and soon grow away rapidly. The secret of their success lies in all the growth being made in the open air, so that there is no check. I have noticed that plants that have been started in warmth remain, after being planted out, stationary for some time, whilst those that had made all their growth in the open were making rapid progress. It is not generally known that Madame Cornillon and several other of these good outdoor Fuchsias will live through the winter in the open ground upon warm, well-drained soils. They will be killed to the ground by frost, but early in the year shoots will appear from the base, and will grow with a vigour and healthfulness unequalled by any plants turned out of pots. In fact, their superiority is so marked that it would be worth while protecting the roots with ashes, or anything suitable during another winter, to ensure their coming safely through. Not only for the flower-beds, but for the garden generally the Fuchsia is very valuable, as the fine hardy kinds which grow so freely and bloom so continuously are very effective in summer and autumn.—A. H.

HOLLYHOCKS.

ALTHOUGH Hollyhocks are not largely grown at the present time, they are to be found in sufficient numbers to prove that although still liable to the disease they are to be had in fairly good condition without any serious outlay of labour. The present season has proved that it is moisture the roots want to enable the plants to combat the disease. I purposely put out some plants in order to test this point. Up to the end of June they had all the moisture necessary to promote a vigorous growth, and by the middle of July the strongest had reached to a height of 9 feet and 10 feet with no signs of disease; but at that point root moisture was withheld, with the result that soon after the leaves were attacked with the well-known fungoid growth. It would not be possible to obtain plants in a more satisfactory condition than those to which I allude up to the time stated, and although they were afterwards affected by the disease they developed some large and well-formed flowers. The above experiment clearly showed that if the roots are well nourished and they get all the moisture they require it is possible still to grow this noble flower in a fairly satisfactory condition. I do not mean to say that under the most careful management there may not be some disease, but it will not be sufficient to seriously interfere with the growth of the plant. At one time I was in favour of making the ground rich for Hollyhocks, but more recent observation has shown me that a heavily manured soil is not desirable; in very rich ground the spikes of flowers come loose, and the individual blooms develop a certain degree of coarseness. I prefer a deep soil lightly manured, and to give the plants plenty of water in dry weather. But if they are not likely to get sufficient moisture to keep the disease away, then by all means let the ground be well dressed with rotten manure before the plants are put out.

With regard to destroying or checking the disease after it has attacked the leaves a friend of mine has done so successfully this season, simply by dusting the under part of the affected leaves with sulphur, which effectually stopped its progress. It is therefore quite clear that Hollyhocks can now be grown with as fair a measure of success as in past times. I do not say that they can be had in such fine condition with the same amount of labour as before the advent of the disease, but if we give the Hollyhock the same care in preparing the ground and the same open position and after management as are usually accorded the Dahlia, it may still be had in good condition in our gardens. The mistake that many make in trying to cultivate

the Hollyhock is that they plant it in shrubbery borders and other unfavourable positions where the roots are badly nourished; whereas it requires plenty of light and air and a good root run.

For the ordinary purposes of the garden seedling plants are the best. They should be raised by sowing in April or May in the open ground. The seedlings should be allowed plenty of room, and be planted where they are to flower early in the autumn. I have the ground ready and will put out the plants that are to bloom next year as soon as sufficient rain has fallen to well moisten the soil.

As regards exhibiting Hollyhocks, my idea is that showing collections of single blooms in boxes is not the way to bring this flower prominently before the public. There is a too great sameness in the arrangements, and nothing striking or very pleasing (except to those who know and admire the flower) in a stand of twelve or twenty-four blooms of Hollyhocks unaccompanied as they are by foliage. But a stand of twelve or twenty-four spikes of blooms would make an effective feature, and the general public would recognise them, and thus would be able to form some idea as to how effective a plant it is for the garden. If some society whose shows are well patronised would step out of the beaten track, and offer prizes for a stand of spikes instead of single blooms, we should soon see this neglected plant return to favour. The successful cultivation is simply a question of root moisture, varied sometimes with something stimulating. A dose of liquid manure once a week and sufficient to reach all the roots will keep the plants in such health that if the disease does attack the leaves it will not do serious harm if the plan of dusting them with sulphur on its first appearance is followed. J. C. C.

Hardy herbaceous flowers.—I shall be very much obliged if you will kindly through *THE GARDEN* give a definition of "hardy herbaceous flowers." At a recent local show *Clematis Jackmani* was exhibited in this section, and also *Lilium lancifolium* roseum, the latter grown under glass in pots. My own idea of hardy herbaceous flowers is that they should be grown out of doors and be sufficiently hardy to stand the winter. [Certainly.—ED.] At the same show last year *Rose of Sharon* was exhibited and obtained a prize as herbaceous.—A. MACLEAN, *Harpenden Hall, Herts.*

* * Herbaceous flowers are those that die down annually to the ground, like the tall Phlox, Starwort, Delphinium, Peony, or Pyrethrum, though sometimes the term is used to embrace hardy plants generally, but it should not be applied to shrubs.—ED.

Darwin Tulips.—In a Continental bulb list now before me these late, single, self-coloured, breeder Tulips are described as follows:—

These new varieties of self-coloured Tulips, flowering in the second part of May, surpassed by their splendid colours all other kinds of Tulips, which are already so very rich in shades and variegations. All amateurs and nurserymen who have seen them flowering during the last four years were unanimous in their admiration, while the garden press has given a very favourable account of them. In November, 1888, six beds on the lawn surrounding the basin in front of the Trocadero Palace at the Paris Exhibition were planted with these new Tulips; 720 varieties, four bulbs of each were collected there and most carefully arranged. The colours of these Tulips vary from pale porcelain to the darkest violet, from soft rose to the most brilliant red, from light brown to the darkest black which exists in the vegetable kingdom. In order to distinguish these Tulips from the common self-coloured mother Tulips, whose colours generally are faint and dull, they have been called Darwin Tulips.

So far, I believe, these Tulips have not been exhibited in England, but we hope that M. Krelage will see his way to exhibit them at one of our Royal Horticultural Society's meetings during the spring of 1890. Tulips of all kinds have risen in price this season, presumably from an extended and growing demand for these gaudy flowers; but we apprehend but few growers will care to expend something like 200 guineas for 1000 named bulbs of these

varieties, wondrous and fine as they may and appear to be. The entire collection consists of more than 2000 sorts, and their owner cannot supply less than twelve bulbs, which cost from £1 5s. to £1 17s. 6d., according to quality. It would be interesting to Tulip growers and amateurs to know the origin and history of these so-called new Flemish breeder Tulips; at any rate, we shall look with much interest to their appearance in English gardens. Personally, my opinion of Tulips is that no Tulip can surpass a glowing mass of the great Florentine *T. Gesneriana* as seen at its best. There are other lovely species and native variations, such as *fulgens*, *splendens*, *retroflexa*, *insignis*, &c., which, when well grown and arranged, are difficult to surpass in beauty. A great impetus is likely to take place in Tulip culture now it has been proved beyond a doubt that Tulips can be as well grown in the Thames valley as in the most favoured districts in Holland. The old and wasteful plan of growing imported roots for one season only and then throwing them away is now quite an obsolete practice with the best growers, and the results are likely to be of immense advantage, so far as the spring beauty and gaiety of our gardens are concerned.—F. W. BURBIDGE.

DWARF GERMAN SCABIOUS.

ONE of the most charming annuals grown, and one of the very best to cut from at all times, is the dwarf German Scabious. There is now a long line of it growing in front of the Peach case at Gunnersbury Park. The colours are mixed and largely varied; the flowers fully double and finely formed, and as charming and pleasing in their variety of tint as can well be imagined. The dwarf German Scabious is a great favourite with Mr. Roberts, and he grows it largely for cutting from both in summer and winter. He sows in early spring and transplants to the open for summer blooming, and he sows again in July and August for growing on in pots for winter and spring flowering. As I write I have before me a large handful of blooms cut from the plants at Gunnersbury Park, and there are as many as twenty varieties, varying in colour from pure white to the richest crimson and maroon. Of intermediate shades there are many. One of the most pleasing is a light lavender blue, of much the same tint as the common field Scabious. Then there is a pure white. To such perfection, indeed, have the varieties of the dwarf German Scabious been brought, that it appears difficult to imagine anything better. Larger-sized flowers are certainly not required; they are large enough now, and as symmetrical in shape as the very best strains of quilled German Asters.

It is the practice of the German seed growers to save their dwarf German Scabious in colours, but it is contrary to experience—certainly so far as that of Mr. Roberts' goes—to find them to come true from seed. Mr. Roberts states that any one colour will produce a variety of tints. He has endeavoured to select and fix two or three of the most novel varieties, only to find they are as sportive as they can well be.

The strain grown by Mr. Roberts grows to a height of about 2 feet. A year or two ago he made a selection of a particularly dwarf variety of compact growth, not more than a foot in height, and with flowers of smaller size than is usual. The seed was sown, but all the progeny reverted to the taller and stronger-growing strain.

In growing for winter-flowering, the plants are kept in the open until stress of weather makes it necessary they should be housed in frames. Damp is their great enemy, and it is necessary that sufficient fire-heat be given to keep the atmosphere about the plants dry and free from damp. If the damp fastens upon the blossoms, they are rendered useless for cutting, and it will spread to the branches. Nothing, however, must be done in the way of forcing, or the plants will be rendered practically useless. As soon as they begin to show flower they can be advanced to a higher and drier temperature, and then they will go on blooming for a long time. As a matter of course, it cannot be

expected that the flowers will be so fine as when the plants are growing in the open air, but they will be full and symmetrical, and on the whole bright and attractive in colour. R. D.

FLOWER GARDEN NOTES.

SEEDLING PETUNIAS.—Were I asked to name half a dozen half-hardy perennials the seed strains of which during the last few years had been improved to the largest extent, Petunias would certainly be one of them; indeed I think the first on the list, for the improvement is beyond all conception. The named varieties of a few years since, of which we thought so much, are now nowhere in the running with the grand seedlings of to-day, and I for one rejoice at the change because of the lessened labour of autumn propagation and house and frame room that is set at liberty for other plants. The immense variety that is now obtainable from a single packet of seed is marvellous, for besides every shade of self colour, from pure white to deep maroon, we get veined, blotched, striped, and spotted, plain-edged and fringed flowers, large and small, and if desired, the types of growth, that is habit of plant, can be had either of a bushy branching nature, or straggling and tall. It is this latter type that I have seen in at least half a dozen gardens this summer in fine condition. The grandest effect of all was that in front of a large hotel where a sort of half rockwork and half shrubbery bank had been thrown up to conceal the basement floor from the street. The entire bank had been planted with these seedling Petunias, and the effect was so unique as to make one feel that with all the efforts to have something grand in flower gardening, nothing yet done had at first sight afforded anything like the same pleasure as this simple floral bank. The same strain of Petunias I have used here for several years, and right well have they served me in the furnishing of large basket beds with mixtures of other plants. The hotel bank lesson, however, will be taken to heart, and grouping of the Petunias will in future be the mode of arrangement. Those of the bushy habited strain are fine for arranging in masses in beds instead of Geraniums, or rather supplementary of these, there being by far too many Geraniums used in all bedded-out gardens. The Petunias maintain their beauty for a longer period, not to mention the increased interest that a greater variety of species of plants afford. Good strains of seed may be obtained from any seedsman. Sow in warmth from the middle to end of February. Many sow earlier, but it is quite unnecessary, and by late sowing the risk of injury from the plants getting too forward before planting out time is avoided.

IVY-LEAVED PELARGONIUMS.—The double-flowered varieties bid fair to oust the single-flowered sorts alike for bedding as for pot culture. It is with the former phase that I wish more particularly to deal. Their most appropriate use is as trailers to hang over the sides of vases or to train to trellis work. I have, however, used them with excellent effect in small beds, and if the growth is never allowed to become crowded the plants will continue to bloom till sharp frost sets in. The scarlet, rose, pure white, and pink colours now to be found amongst the double section will, I think, tend to popularise the plants as bedders, and there can be no doubt of their fitness as trailers if planted in groups on banks or to droop over the sides of large vases. I have tried my hand at raising seedlings, but the results have not been sufficiently satisfactory for me to commend the practice, and propagation by cuttings from well-known kinds is at present the only mode I feel at liberty to advise, and now is the time to propagate them.

CLANTHUS DAMPIERI (Australian Glory Pea).—After thirty years of varying success and failure in respect of the cultivation of this plant it would appear as if we were on the eve of finality in the matter if the fine specimen plants now to be seen in the open borders in the Messrs. Sutton's nursery grounds at Reading may be taken as indicative of success, and I think they will be so accepted by everyone privileged to see them. The plants are

pictures of health, being from 2 feet to 3 feet in height, with leafage and shoots as vigorous as it is possible for them to be. The flower-heads are well developed and freely produced, the colour being several shades darker than in the case of plants grown indoors. But now to their culture. The seeds were sown in the open borders the same as the commonest annuals, no sort of special preparation or treatment being given other than pressing the seeds firmly into the ground and watchfulness against the attacks of slugs which last spring were more numerous than for years past. Sticks were placed to the shoots by way of support during the earlier stages of growth, but eventually they grew so sturdily that artificial support, except to the flowers, was not required. This, the Messrs. Sutton's foreman told me, was the entire cultural rôle, he being just as much surprised at such unexpected success as I was delighted with the sight of the plants, and at being able to add another annual flower to the all too short list of kinds that last in good condition during the summer.

LILIES.—We have three sorts in the open flower borders at the present time in such splendid form as to deserve more than a passing notice. They are *auratum*, *lancifolium* Krætzneri, and *tigrinum* Leopoldi. There are scores of *auratum*s of various shades and markings, and the finest flowers are produced by bulbs that have remained unlifted for three years. Will this excellence continue if they are still left undisturbed? Our soil is deep and light, and naturally well drained by the gravelly subsoil; hence the safe wintering of the bulbs by the application of a little additional soil over them in winter. Newly-planted bulbs have thrown up the cleanest stems and the flowers are more evenly produced, and in a few instances are finer than those of the longer planted. The flowers of those longest planted are for the most part irregular in size, but almost without exception the plants are over-weighted with flowers, so that if the same rate of weightier flower-heads continues in proportion to the undisturbed condition of the bulbs, staking will have to be done by the time the shoots are half grown. The magnificent pure white variety *lancifolium* Krætzneri has not yet been allowed to remain in the open ground during the winter, but the quantity of bulbs will justify a trial being made during the coming season, and results shall be reported in due course. For summer flowering in the open border it is, I think, even more effective than *auratum*. We have a few in pots, but the flowers are puny in comparison with those on plants in the borders. *Lilium tigrinum* Leopoldi is the grandest introduction of its class for some time back. Its colour is not easily described. The nearest approach I can make is to say the ground-work of the flowers is a deep rich orange, with just a dash of brown thrown in; the spots are nearly jet black, and are regularly dotted over the entire surface of the flower. We have quite a hundred bulbs now in grand flower, and they have been so for over three weeks, and promise to continue some time longer. This long-lasting of the flower will make it the more valuable as a border plant. I believe it to be quite as hardy as the old *tigrinum*.

MARGUERITES.—It is very difficult to me at any rate, when a particular fancy or liking has been imbibed for a plant, to avoid favouring that said plant at the loss of some amount of beauty in other directions. I confess that I am in that case now in respect of Marguerites. I have overdone them, or in other words have planted them too freely, particularly the yellow kinds, so that with other yellow flowering plants, such as the miniature Sunflower and single and Cactus Dahlias, some parts of the garden lack a sufficiency of high colours to produce that balance that hitherto it has been my endeavour to attain. This lack of colour would not have been so glaringly apparent but for a second blunder, namely, that of planting the yellow Marguerites so thickly in the beds that the blue under-growth plants, *Ageratum*s, *Heliotropes* and *Agatheas*, had not the chance of development either of growth or flowers that at planting time it was intended they should have. The mishap will have enduring effect because such a blunder cannot possibly be repeated.

Had the Marguerites been 3 feet instead of but 2 feet apart the blue-flowered plants would have held their position, and the blending of these two colours with the silvery marginal line plant—white variegated Thyme—would have been productive of as refined a piece of colour mixture as it is possible to make.

DIANTHUS CHINENSIS (Indian Pink).—These are extra brilliant just now. Our stock consists of about a half a dozen varieties in mixture, the doubles only being kept separate from the single-flowered kinds. The single varieties are, I think, the most effective in the beds, though the double sorts which are not to be despised have the advantage over the singles of being first-rate for use as cut flowers, in which state I have known them to keep quite fresh for upwards of a fortnight. About the beginning of February is the time to sow in warmth for flowering in August. The plants are hardy and perennial in all but heavy soils, and except to get new varieties, I would never dream of sowing a fresh batch each year. They are excellent subjects for planting in the herbaceous borders in clumps of from five to a dozen plants in each, and we have also used them with excellent results in Rose beds, where after the Roses are over they do good service in keeping up the display. **W. WILDSMITH.**

Wallflowers on dry soils.—My Wallflower secret was nothing but sowing where they are to remain. They have so few roots, that if they



cannot be transplanted with a ball, which is impossible in this light soil, they take too long to get hold, and the wind in winter gets hold of their bushy heads, and they work themselves, those unhappy funnels (see illustration), in the earth like an unstaked tree. Another

secret is that they like a rather stiff soil. We never see the fine fat-looking things here of grand colour that I see about cottage gardens on stiff soil on the edge of the weald of Sussex.—**G. J.**

Tuberous Begonias in the flower garden.—I was very glad to read the remarks of W. Shirley (*GARDEN*, Aug. 24, p. 166) on the above plants, for I do not think they receive the attention they deserve. I consider nothing looks better, especially in a wet season, than a nice bed of Begonias of the fine sorts which are now to be obtained. I planted two large round beds this year with seedlings raised last season, and rested through the winter in a cold house. The plants have been and are at the present time flowering freely. They are all of dwarf habit and require no stakes, while the heavy rains have no effect whatever on the flowers. The average height of the plants is from 1 foot to 18 inches. Begonias certainly are valuable to those who are pinched for room in the winter, for they can be stored in a small space until required the following spring. I believe that anyone after giving them a fair trial would not readily give them up again.—**C. W.**

Hardy Fuchsias.—Although many of the ordinary greenhouse Fuchsias are hardy if treated as herbaceous perennials, yet the various original species seem to have greater hardiness, and will endure in almost any soil if not too wet and cold. "C. C." mentions the beautiful Riccartoni, the widest grown of all the hardy forms, also globosa, grown fifty years ago with Riccartoni as a greenhouse variety, but still seldom met with as a hardy plant in the south. The old long-pointed-sepal coccinea is far more common, and very often the strong-growing, broad-leaved corallina may be met with also. All of these were, when I was a youth, grown for ordinary house decoration, as we had then but very few of the hybrid products so abundant now. A fine free-bloomer, exoniensis, was probably a cross-bred variety, whilst Dr. Jephson and Venus Victrix were the newest and richest of

the white-sepal forms. Very recently I met with in a cottage garden here the small-flowered magellanica, a variety introduced from the Straits of Magellan very many years ago. The woman in whose garden several strong plants are still blooming profusely, as they have been all the summer, told me that she had the cuttings twenty years ago from plants that had been in her mother's garden for some fifty years, so that it is a well-tested variety as to hardiness. The variety has smaller flowers than those of Riccartoni, but it is very free, blooming with exceeding profuseness all the season. The crowns of the plants after the summer growth has been cut back in early winter are protected with small cones of ashes, and they begin to break up again in the month of April. Why cannot we have beds of these fine old Fuchsias grown in this hardy fashion at Kew and in our public parks?—**A. D.**

HERBACEOUS LOBELIAS.

"D.'s" timely remarks on these fine showy plants (p. 166) remind me of some of the grand displays that used to be made with them years ago. My recollection, however, does not verify the statement that splendens is the same as fulgens, but that the former is a decided improvement on the latter, with a more brilliant flower if possible, and a broader darker leaf. Possibly, however, "D." may be right, and, alas, it is not easy to verify this, as year by year these very showy and distinct plants are becoming more scarce.

Pincushioned on a carpet of white Verbenas, or edged or alternated in groups with pure white East Lothian or other Stocks, these herbaceous Lobelias were simply magnificent. They were also very effective edged with white or light-coloured Lobelias of the speciosa type, such as the white or L. Paxtoni strains.

The chief enemy of these herbaceous Lobelias was a species of rust that used to creep in and eat out their vigour or life when in a semi-dormant state during the winter. The semi-herbaceous shoots or stems used to be cut off soon after blooming. This having been done, the root-stock was lifted and stored in soil as closely packed as possible and wintered in a temperature of 40° or so through the winter. Spring treatment varied much according to the wants and wishes of the grower. If he had sufficient stock, which was seldom the case, the plants were kept in cool quarters till the middle or end of May, when they were planted out in a mass or torn asunder into two or three pieces; but where the stock had to be increased the plants were placed in heat in the spring. So soon as an inch or so of growth was made this was cut off and rooted, and occasionally the stock was beheaded two or three times; then the old shoots were broken up, divided into small patches or single stems, potted off singly and established in heat and grown on for planting out in May. There was yet another and a safer plan of increasing these plants—that of merely breaking up the patches into small pieces in the early spring, and establishing these in pots in a cool temperature under glass before planting out.

The plants often suffered from over-division and over-forcing to obtain the necessary shoots, and sometimes the stock was weakened into indifferent blooming in consequence. From this excessive haste to become rich in herbaceous Lobelias, as well as from a sort of red rust or canker on the stools in their state of semi-dormancy, many fair stocks have been decimated and all but lost. "D." is silent as to modes of propagation, and whether he has ever succeeded in ripening seed in quantity in the open air.

These plants like a good soil, free and open, and fully enriched or mellowed with leaf-mould or rotten hot-bed manure. Our mixture for propagation and growing them to planting condition in pots or pits before going out was a threefold one of equal parts loam, leaf-mould, and gritty sand. The sand may be dispensed with in the open, and the plants thrive well with Roses and look well as unique under-furnishing for standard Roses, or in-

deed in separate groups, beds, or borders, or in masses among other herbaceous plants. Their colours are of the brightest, and they would go well with such hardy plants as the white-flowered Hyacinthus candicans. **QUERCUS.**

KITCHEN GARDEN.

AUTUMN AND WINTER LETTUCE

WELL blanched Lettuces are rarely obtainable in the cold autumn and early winter months, plenty of warmth and sunshine evidently being the principal factors in the production of these, the most desirable ingredient of the salad-bowl. No one would, I imagine, dispute the fact that a good salad can be, and very often is made without Lettuce in any form being included, but if not so perfectly blanched as and therefore less attractive in appearance than Endive, there is yet a crispness and flavour about the Lettuce that good judges fail to detect in Endive. In my opinion the best salad obtainable during the autumn and winter months would be largely composed of a judicious mixture of the two, and for this reason a supply of Lettuce is maintained as long as possible, with and without the aid of glass protectors.

Those who are fully alive to the value of a



White Paris Cos Lettuce (one-sixth natural size).

good supply of Lettuce during September and October, or when a considerable number of shooting parties are organised—this also being before Endive is generally at its best—take especial pains with the July sowings. If these are neglected or fail in any way, it is not possible to make good the failure, as the plants raised in August grow but slowly, and in some seasons and districts rarely attain a serviceable size. We make two, sometimes three sowings of Lettuce in variety during July on rather wide ridges between Celery trenches, very little transplanting being done other than what may be required to fill up blanks. The Paris White Cos (see cut) will be one of the first to heart in, this being accompanied by the very superior and much valued Perfect Gem, a Cabbage variety that all should grow extensively. Sutton's Favourite, and with which Early Ohio is synonymous, is at its best in a very hot season, and keeps well either in the summer or autumn. It is a Cabbage Lettuce, belonging to the Neapolitan section, and is very serviceable. The latest to heart in and the very best for July or summer sowing generally is the true Black-seeded Bath Cos (see illustration), and this is especially fine this season. When this old favourite is well grown the heart is beautifully blanched, very crisp and sweet. Those we are using at the present time were obtained from seed sown early in June, plants raised in the

latter end of June hearting in during September. This season no difficulty has been experienced in transplanting Lettuces, so that a good stock should, provided the seed was duly sown, be available in most gardens. All that are of good size, or say fully half grown, may well be left where they are, but any of a suitable size for transplanting ought to be moved to fairly rich sunny borders, where they will yet make good progress and be more convenient



Black-seeded Bath Cos Lettuce (one-sixth natural size).

for protecting from both slugs and severe frosts. All should be transplanted as much as possible with a ball of soil about the roots, the Cos varieties being disposed about 9 inches apart each way, and the smaller growing Cabbage varieties 3 inches less. Plants thus moved will not form large hearts, but unless early checked by frosts they will prove very acceptable late in the autumn, and it may be at midwinter, especially if covered early with any garden frames available.

As before stated, not much dependence can be placed on plants raised in August, and whether these will heart in or not depends very much upon the habit of the varieties and the state of the weather. For sowing early in August and again about the middle of the month I prefer the small Cabbage varieties, notably Early Paris Market and All the Year Round, the former being of quick, neat growth and of



Brown or Bath Cos Lettuce (one-sixth natural size).

excellent quality, while the latter also hearts in capitally, is hardier and more generally serviceable. If these are sown thinly and broadcast on a raised sunny border, very little further trouble need be taken with them, a little timely thinning out and filling up blanks being all that is necessary. The larger varieties when sown late rarely heart in properly, and the outer leaves are too flabby to be of much service. The best protection for these small Lettuces is either handlights, large bell-glasses, or a shallow frame may be constructed with the aid of a few strong stakes, flooring boards, and any lights from pits or frames that can be spared. Whatever form of protection is afforded must be put

on in anticipation of frosts, or say early in October, as should the tips of the leaves suffer the plants soon decay. Warm raised borders are too often occupied by Cauliflowers, Broccoli and other vegetables that would succeed nearly or quite as well in the open instead of being more profitably utilised for the production of winter salading.

Many succeed in growing a good supply of late Lettuces only to lose the greater portion of them by frosts. Lettuces nearly or quite fully grown cannot be moved nearly so well as Endive, but if extra pains be taken with them, few losses occur. In the autumn there are in most places a few frames not much needed for other purposes, and these might well be devoted to the preservation of late-grown Lettuces. Pits newly cleared of Melons, Cucumbers, Tomatoes, or pot plants ought also where possible to be similarly utilised, not merely for Lettuces, however, but also for Endive, Cauliflowers and early Broccoli. If need be, a little partially exhausted manure may be placed in the bottom of these and faced over with soil of some kind, so as to bring the contents up near the glass. The Lettuces ought to be lightly tied up, carefully lifted with a trowel, a moderately large ball of soil and roots being preserved, and carried on a hand-barrow to the frames and replanted somewhat thickly. If the soil in which they are firmly bedded is at all dry a good watering should at once be given, otherwise it should be delayed till the ground is found to be approaching dryness. Only those that are wanted for use in a few days ought to be left tied up, abundance of air should be given, and additional protection thrown over the frame and lights in severe weather. We have kept Lettuces in this way till mid-winter, and they always repay for the trouble taken with them. The white and green forms of Cos Lettuce heart in naturally, that is to say, do not require to be tied up, but they are improved by it, especially from the present time onwards. The Brown Cos varieties absolutely require it even in the summer if they are wanted at their best. A portion of the forwardest ought therefore to be tied up every week, but no other blanching process is advisable or safe.

Early in the summer "A. D." invited a discussion in the pages of THE GARDEN upon the merits of the system of raising Lettuces thickly for the purpose of cutting young for salads. As a rule, very few gardeners would adopt the plan in the summer or at any time when fully grown Lettuces could be had. The case is very different during the winter and early spring months, and unless I am much mistaken, numerous gardeners have been thankful enough to obtain a good cutting of young Lettuces and blanched Chicory tops for a salad. At any rate, it is no new idea, but speaking from experience, if not novel, it is yet well worthy of being tried wherever the supply of Lettuce and Endive is likely to fail early. The first thickly grown Lettuces I cut were originally raised for the purpose of being forwarded for open-air culture, but the seed was sown too thickly, and for this and a still more important reason, viz., the want of other suitable salading, the plants were cut and used. Since that time I have frequently raised boxes of plants Mustard and Cress fashion, and found them very acceptable. New seed of any white Cos variety is the most suitable for the purpose, the leaves formed by these being partially blanched, fairly crisp, and sweet; whereas the Cabbage varieties are not sufficiently erect and the leaves are also too flabby. The ordinary boxes generally used for

Geraniums are filled with fairly rich loamy soil, and the seed sown thickly. A strong heat is not desirable unless the boxes can be set near the glass, in which case the Lettuce will stand any amount of it. Supposing a daily supply is needed, two or three boxes ought to be sown every week, the produce being available from a month to six weeks. Quite fresh soil should be used each time more seed is sown, and the seed comes up most quickly when heavily shaded, the covering, however, being removed before it weakens the seedlings. W. IGGULDEN.

KITCHEN GARDEN NOTES.

MUSHROOMS.

IT is very doubtful if many Mushrooms will be gathered in the open fields this season, a cold, wet soil being altogether unfavourable to the spread of the spawn, and much of it is most probably destroyed. This being so, there is all the more necessity to pay greater attention to the production of early crops from beds formed in the open air, or under the cover of either a shed or a Mushroom house proper. Beds spawned by the middle of August ought to be in full bearing from a month to six weeks later, and under fairly skilful treatment will remain productive for three months. September, however, is an important time, the most profitable beds being usually spawned during that month, these yielding abundantly in the late autumn and early winter months, or when there is a great demand for Mushrooms in numerous country places. Unfortunately, the weather has been very unfavourable to the preparation of the manure, especially in the case of those who are obliged or prefer to do this in the open air. Our first open-air bed was particularly well made, the droppings and short litter mixed with them being well advanced in decay, yet retaining plenty of heat, being also sweet and moderately dry. The manure for a second bed could not be got sufficiently dry, and it is now comparatively cold. To spawn this would simply mean so much wasted labour and space. The third heap of manure is in a much better condition, repeated turnings having well sweetened it, much superfluous or injurious moisture having been also evaporated. This comparatively fresh manure will be mixed with the materials in the second bed, the whole being laid up into a ridge to ferment for about a week, and turned three or four times prior to forming it into a bed nearly double the size of that broken up. In all probability there will yet be too much moisture in the bed, and when this takes the form of steam it is liable to destroy the spawn that may be bedded in it. Very moist beds that heat strongly ought to have deep holes bored in them, the better to let out the steam and also to prevent the centre from arriving at a white heat, this leaving the manure in a dry, mouldy state, and rendering it unfit for the growth of Mushrooms. Especially ought the ridge-shaped beds to be watched closely, these being the most liable to over-heat. Holes pierced with an iron rod down through the centre of the ridge are frequently necessary, these being left open after the bed is spawned in all cases where the heat keeps rather high, or say above 80°. Small lumps of spawn are most liable to be destroyed by a too moist heat, and a single brick ought, therefore, to be divided into about eight pieces only, the mycelium in the centre of these escaping, when perhaps that near the edges is destroyed. On no account should deep holes be formed for the lumps of spawn with a dibber, these, not being closed again, acting as so many steam receptacles. Shallow holes can be opened with the hand, the lumps of spawn being inserted flatly only just below the surface and heavily beaten down with mallets or the back of a manure fork. Whether the newly-spawned beds should be soiled over at once or not ought to depend upon circumstances. If the temperature is low and it is thought it will not rise to an injurious extent after the bed is cased over with 2 inches of loamy soil, then it ought to be done at once, in order to conserve the heat as much as possible. A rather hot and steamy bed, however, should not be soiled

over for about a week, or otherwise the temperature may run up to near 100°, and the spawn be ruined. Much the same rule holds good as regards mulching the beds. A good thickness of soft, strawy litter (hay is unsuitable, as being liable to become very damp and mouldy) should be given as soon as it is safe, this, in addition to enclosing the heat in the bed, obviating the necessity of using the watering-pot. As a rule, the less need there is to give water to a Mushroom bed, either before or after it has arrived at a bearing stage, the greater the certainty of a heavy crop of Mushrooms being obtained. Moles not infrequently greatly damage open-air beds, and ought to be excluded as much as possible. They are not easily trapped in such positions, and we are under the necessity of enclosing the beds with a strip of three-quarter-inch mesh galvanised wire netting, this being let into the ground about 4 inches deep. Rats and mice have to be similarly excluded, or these, too, will greatly disturb the manure in a Mushroom bed.

TOMATOES IN THE OPEN.

These have grown well, and are fruiting heavily in spite of the unfavourable weather, Laxton's Open-air being especially good and early. Very little disease is apparent, only a few fruits and scarcely any foliage being affected by it. Should the fine sunny weather last for a few days or weeks the fruit will ripen rapidly, much of it only wanting a little heat to finish the ripening process. All superfluous growths should be kept closely cut away, and where the leaves smother the fruit these should be thinned out, so as to let the crops have the full benefit of the light and sunshine. Too often the leaves are recklessly removed in a wholesale manner, little else but stems and fruit being left, but this I hold to be a great mistake. The loss of leaves either from disease or by premature removal effectually checks the growth of the fruit and also spoils the quality of the same. Let the ripening at the present time be more natural, and if much of the fruit still remains in a comparatively green state till frosty weather may reasonably be anticipated, it may be cut off in clusters and the greater portion easily ripened in a dry heat. If the plants were not stopped till a fourth cluster of fruit was set, the latter will not ripen, but will be even more valuable in a green state. We find green fruit is quite as much appreciated as that which is ripe, the preserve made from it being considered by competent authorities to equal any made from Green Gage Plums. I am not prepared to unhesitatingly uphold this statement, but would term green Tomato preserve an excellent substitute for that made from Green Gage. Very wholesome and good hot pickle can be made from green Tomatoes and a few other simple ingredients, and the demand for this is greatly on the increase.

MARKET VALUE OF TOMATOES.

From what I have seen and heard, Tomato growers for profit are not having a very good time of it. In some instances the plants are badly diseased, and are incapable of producing anything like a profitable crop. Even those who have been successful in obtaining extra good crops will not find these particularly profitable, the prices in the London and principal provincial markets being lower than ever known before. Immense quantities of French Tomatoes are retailed at 2d. per lb., and all the home growers can get while this supply remains unexhausted is 3d. per lb. (wholesale) for the best samples. There has been a great rush to this branch of market gardening, thousands of private places also catching the infection and contributing their quota to the markets, and I am afraid many of the former will wish they had turned their attention to some other means of gaining a livelihood. It is to be hoped consumers in large towns get the full benefit of the reduction in prices. In small country towns they do not, the growers only recently obtaining as much as 6d. per lb. for fruit to be retailed at still higher prices. Those who have healthy plants trained on wires near the glass ought to lighten the crops on these as quickly as possible, and also thin out superfluous growth, in order to induce the formation of abundance of young fruiting shoots. A top-

dressings of turfy loam and a little superphosphate of lime or bone meal will encourage fresh root action, the aim being to secure numerous clusters of fruit to ripen during the late autumn and winter months—this being when good prices are generally realised for well-ripened Tomatoes. A high temperature should not be maintained, but if the fire-heat is turned on and air is given freely whenever the weather permits, the top ventilators also being left slightly open during the night, a good set of fruit will most probably be obtained. Should the flowers fail to set properly, they must be fertilised with the aid of a camel's-hair brush, this being attended to about the middle of each day.

W. I.

Winter Radishes are much esteemed in this locality, the sorts being the China Rose and the Black Spanish. They are usually sown in beds broadcast as soon as the Potatoes are lifted, and are drawn fresh for use as required during the winter. The cultivation is simple, merely keeping them free from weeds and thinning out if they come up too thickly. Hardly any cottage garden or allotment is without its bed of winter Radishes, and market cultivators make a speciality of them. They are very hardy, and in this part get no protection in winter, and are best when kept in the soil until required for use.—J. G., *Hants.*

The Potato crop.—The Potato crop is an abundant one in most cases this year with very few diseased roots so far, but the tubers generally are abnormally large, and as is usual in such cases when cut in half they are either black or hollow in the middle. This is very disappointing, as when one has got a handsome-looking Potato he naturally expects it good throughout. Even fair-sized tubers of such sorts as Sutton's Seedling, Chancellor, and The Colonel are not free from this blemish this season. I begin to think that too much weight is given to size in selecting our sorts of Potatoes. In the majority of cases at exhibitions a dish of medium-sized tubers has no chance whatever of winning a prize, all the awards going to the large ones.—J. C. C.

FOREST TREES NEAR GARDENS.

In looking round several gardens of late, I have been particularly struck with the injury done to them, by reason of planting large forest trees in too close proximity to the outer boundary, and especially is this the case where the kitchen and fruit gardens have been shut off from the mansion by belts of trees. In many cases the trees have been planted within a few yards of the outer walls, where fruit trees of various kinds have been planted, and although little harm was observable while the trees were young and the soil fresh, yet the case was completely altered, as year by year the tops of the forest trees shot upwards, and their roots extended outwards in all directions. Only those that have had to contend with this evil can form any idea of the distance that the roots of Elm, Ash, Poplar, and similar trees will travel when once they get into loose cultivated soil. This is no exaggerated fancy, as I could point out plenty of old gardens attached to noble mansions where the outer walls are practically useless for growing choice fruits, as a Cherry or Plum stands a poor chance in the struggle for life with the giants of the forest. Those who are planting around modern dwellings should take heed lest they fall into the same mistake. Good crops of either fruit or vegetables are impossible where forest tree roots get a firm hold. The over-shadowing and keeping out sunshine and air cause garden crops to draw up weakly, and suffer severely during hard winters, while crops in market garden fields escape, owing to the full exposure they get during their entire course of growth. As the smaller gardens always reflect, more or less, the leading features of the larger ones, it was but natural to find men falling into the error of planting coarse-growing trees close up to their garden walls, and the space at command being much more restricted, they suffered even more than the larger ones. I was lately invited by

a lady to see her garden, and especially to see if I could fathom the reason of the Grapes getting smaller and in every way inferior to what they had been a few years ago. The reason was not far to seek, as forest trees had been planted close up to the end of the Vine borders, and the roots had taken full possession of them, while the tops effectually shut out the afternoon sun. Owners of places who have trees growing up around them that they see every day can hardly be made to understand the danger they incur to the inmates of their gardens. The roots block up drains and rob borders to an enormous extent. Shelter from rough winds is undoubtedly a great thing to provide, but I can testify by actual experience that it can be purchased at far too high a price, and those who are contemplating the planting of shelter belts for their kitchen and fruit gardens will do well to take counsel from owners of old-established gardens as to the kind of trees to employ, and the distance from the garden at which they should be planted.

Gosport.

JAMES GROOM.

CHRYSANTHEMUMS.

E. MOLYNEUX.

NOTES ON CULTURE.

EARLY-FLOWERED VARIETIES.—Mme. Desgrange and its pale yellow sport, George Wermig, are now fast coming into full bloom; in some cases they are past, and in others developing their flowers. In all cases early flowers of these two varieties are appreciated either in a cut state or upon the plants. These sorts are so easily managed that they can be grown by all classes of cultivators. Plants in 7-inch pots, not more than 2 feet high and carrying three good blossoms, are very useful for the decoration of vases or the front stages of the conservatory. The length of time the plants are in bloom may be extended by timely attention when the plants are unfolding their flowers. Should the sun be bright, a light shading may be put over the glass during the hottest part of the day. When the flowers are half developed withhold the stimulants, depending only upon clear water to finish off the blooms. Attend to the removal of suckers from the base of the plants as fast as they grow. When the blooms are past their best remove the plants to an open position out of doors, cutting down the branches so as to allow the suckers to develop. These suckers will in time furnish cuttings for next season's plants.

Early plants of Mlle. Leoni Lassali are now commencing to unfold their flower buds. Such plants should be at once removed to the greenhouse, or other cool house, where ample light and air can be afforded. In this way the blooms will open of a pure white colour without a trace of pink or yellow, which is sometimes the case when the plants flower out of doors. If the flower-buds have not been thinned, sprays of blossoms can be gathered, and in this manner these small-flowered varieties are more appreciated. This variety being one of the very best early autumn-flowered sorts should receive extended cultivation where early flowers are appreciated.

As many of the plants intended for the production of large flowers are now setting their buds, almost daily attention to the removal of surplus growths from the nodes below where the buds are forming is necessary. If these lateral growths even are left for a few days, they are not nearly so easily removed, as they soon become hard and twiggy, entailing more time to remove, besides robbing the plant of unnecessary energy, which would be far better spent in supplying strength to the formation of flower-buds or in supporting those already formed. A sharp look out should also be kept for insects, such as earwigs, jumpers, and a small, narrow, wiry-looking insect, black in colour. I do not know its name, but it does much damage to the plants just at a time when the buds are being formed. This insect punctures one side of the shoot, or the bud, thus causing the latter to bend over slightly to one side. The only means that I know of to get rid of this pest is careful hand-picking at

the time when the buds are setting and commencing to swell; after that stage the buds do not seem to be troubled in this respect. I know that this insect does incalculable injury to the plants, as buds so injured are rarely of any use. Towards evening is a good time to examine the plants for insects of all kinds. Green or black fly, or even thrips, are not nearly so troublesome now that the growths are more solid. Earwigs, however, are on the increase. Much the best plan of trapping them is by inserting amongst the leaves pieces of Broad Bean stalks from 1 foot to 2 feet long. The longest pieces make the best traps. The Bean stalks should be examined every morning, dislodging the earwigs by blowing down one end or tapping the stalk. I have caught as many as thirty earwigs in one piece of Bean stalk at one inspection. This plan of trapping them is better than placing pots of Moss on the top of stakes, as it requires more time to search for them, and the pots also do not add to the appearance of the plants, especially where a large collection is grown.

Some of the varieties, notably grandiflora, Meg Merrilies, Ralph Brocklebank, and a few others, are more susceptible to the attacks of mildew than the bulk of the varieties. Upon these varieties mildew is already to be seen. Some localities are more addicted to attacks of mildew than others. For instance, during hot weather where a lack of soft or rain water is felt and cold water from springs or water company's mains has to be used direct from the pipes, applying water of this sort to the plants in hot weather both to the roots and over the foliage checks the growth, and thus very often causes mildew. Again, the weather after being scorchingly hot one day will often quickly change to a much cooler temperature, often accompanied by biting east winds, if only for a few hours. Plants which are growing in a position without protection from that direction are almost sure to be troubled with mildew.

It is generally on the under sides of the leaves that the mildew is found. The remedy in this case is to apply the sulphur in a liquid form and prepared in the following manner: Place 2 lbs. of sulphur and 2 lbs. lime, which has not been slaked, in 10 quarts of water and boil for twenty minutes. For syringing on the plants use two wineglassfuls of the mixture to 4 gallons of clean cold water. A syringe with the jet affixed for causing a single stream is the best method of applying the liquid. By placing the forefinger over the orifice the liquid can be directed upwards and spread over the plants where required. If one dose is not sufficient to kill the fungus renew the application in a few days. If a slight discolouration of the leaves follows from the sediment of the mixture, it will not be injurious, but can be removed if desired by one or two vigorous washings with clean water.

As previously stated, when the plants are forming their flower-buds they should not be unduly excited by the application of stimulants at the roots, as at that time the formation of flower-buds causes a temporary check to growth. The plants should be kept quiet while they are passing through that stage, as any excitement will only result in an extra rush of lateral growths, which may weaken the perfect development or formation of the bud in its youngest stage. Exuberant growth has also a tendency to create malformation or blindness in the buds forming on such plants.

Chrysanthemum Ada Spaulding.—This is a new kind raised by Thomas H. Spaulding, Orange, N.J. It is, as I saw it last year, the most beautiful and perfectly incurved variety extant. The flower is very large, the base of a bright rosy lilac crowning to pure white. The habit is strong and very sturdy; indeed it is a model of strength and vigour.—*American Florist*.

Chrysanthemums in America.—Mrs. Alpheus Hardy was, last year, the most precious of all Chrysanthemums, but it promises to be plentiful enough this year. Mr. Henderson, of New York, is getting up an immense stock of it. Its chaste beauty, distinctness, and rarity rivetted the admiration of everyone who had seen it, and its praises

have been sounded throughout the civilised world. But we are soon to have another surprise, namely, a pink-coloured "hairy" flowered Chrysanthemum of the same style as Mrs. Alpheus Hardy. I have known of the existence of this pink-blooming variety for some time, but not till to-day did I know that it had escaped from its prison in Japan. But it has, and Peter Henderson has got it. This is the second time he has had it; the first time every plant was dead when received. That horticultural veteran, Peter B. Mead, was telling me about it a couple of months ago. Mr. Mead's daughter was for several years a resident of Japan and officially connected with the royal families of the country. She used to treat her father here to descriptions and sketches of the hidden floral treasures of the princes' gardens, and laid particular stress upon this pink "hairy" flowered Chrysanthemum. But she found it impossible to obtain a plant of it to send to her father at Mamaronock. This shows how true is the proverbial attachment of the Japanese to their pet plants.—W. FALCONER, in *American Florist*.

CROWN AND TERMINAL BUDS.

I NOTICE that most of the Queen family are now showing a bud which is known amongst growers as the "crown" bud; this if allowed to remain would develop a huge flower, but the petals would be flabby, soft, and devoid of form, showing a greater tendency to reflex than incurve. Blooms from buds of this section formed so early very often develop two, and in some instances three centres. These are of no use whatever for exhibition. Where such buds are forming in the southern counties as those described, they should be promptly removed, the growths trained onwards, and the next bud in each shoot waited for. It is impossible to lay down a hard or fast line as to the time when every plant shall show its proper bud. As a general rule plants that are grown on what is termed the large bloom method show three buds during the season of growth. If the plants were struck at the time advised and grown on in the orthodox manner, the first break is made from the middle of May to the middle of June. Sometimes buds will form in July; these must in every case be considered as worthless, and should, of course, be removed. This season nearly all the varieties formed a July bud, owing to the causes previously named. In the ordinary way the bud, generally known as the crown, which is formed after the first break in May or early in June, is set from the 1st of August to the end of the same month.

If this particular bud is set at the right time for each variety it will develop into the best flower, but if it is formed too early it must be removed and fresh growth allowed to take place. Another bud known as the "terminal" will then set at the point of the new growth. This bud (terminal) produces in some varieties, such as the Queen of England and Empress of India, the finest flowers when the buds are formed and selected early in August. The blooms are nearly, in some cases wholly white; whereas from terminal buds the flowers assume that rich tint of colouring so charming in this variety, and which weighs so heavily with good judges. The blooms of Alfred Salter, again, from crown buds are of the palest pink, while those from terminals have that deep lilac-pink so strongly marked in this variety when presented in its true form. To obtain the correct colouring, it is much better to be content with smaller, better formed flowers than to have huge monstrosities that are not pleasing in any way. Terminal buds will not show before the early part of September upon plants which set their crown buds about the first week in August, and, strange as it may appear to some, buds formed early in August will not develop their flowers much before those plants which set their buds (terminals) a month later. When naturally late-flowering kinds, such as Boule d'Or, Meg Merrilies, or grandiflorum in the Japanese, or Barbara in the incurved, are grown, they must have the flower-buds formed early, as they need the longest time to develop into perfect blooms. Take, again,

any early-flowering kind, such as Mme. Bertier Rendatler; it would be useless to take buds of this early in the hope of securing good blooms at the same time as many other kinds. Late sorts must have early bud selection, while the reverse must be the case with early flowering varieties. It is almost impossible to lay down rules to suit all localities, even in England.

"Crown" buds ought to be taken earlier in the northern counties than they can be with safety in the south. Japanese varieties generally require more time to develop than do the incurved sorts. By the time these lines are in print any Japanese varieties forming buds must not be neglected, but the buds must be taken at once, especially of the late sorts, and also Avalanche and Edwin Molyneux. If these kinds are allowed to grow past that stage, the flowers produced from the buds formed on the next growth will be small, and in some instances hollow-eyed and useless for exhibition. The incurved varieties, such as Eve, Mabel Ward, Lady Carey, Nonpareil, Barbara, and also those that bloom naturally late, should have their flower-buds retained now as fast as they are formed; while such as The Queen family, Prince Alfred, and its bronze sport, Lord Wolseley, would be useless if selected at this time. These must have the buds rubbed out, and the next one formed depended upon to supply the best blooms, which may not be so large, but they will be fresh, compact, deep, of a finer colour, and will come to time much better, which is important if exhibition is an object.

As a general rule, crown buds which set from the 18th of August to the 1st of September are the most likely to produce the best results. Some varieties of Japanese will require to have their buds set earlier than the date named, as they require longer to develop thoroughly. The varieties named previously carry much weight with good judges when staged in good condition.

The best manner to proceed when "taking" the buds is as follows: Select the morning for the removal of the shoots, as owing to the dew upon the plants the shoots are brittle. If the stem is held securely in the left hand and the young growths which are intended for removal be bent suddenly down one at a time, they snap off. After a little practice this method of taking off superfluous shoots is more expeditious than cutting them off with a knife; but if the operation is effected during the middle of the day when hot and dry, the shoots are quite tough, and the risk of damaging the flower-bud is much increased. It is well to allow one shoot to remain for a short time as a safeguard against accident. In case of a doubt arising in the mind of the cultivator, that the bud is at all deformed, it may be removed, and the shoot allowed to grow on until another bud is perfected. Two or three days will be ample time to determine whether or not the bud will progress in a uniform manner and be likely to perfect a good bloom. Much depends upon the first swelling of the buds whether they be large and perfect, as without large buds large flowers cannot be expected.

It very rarely happens that after the bud is thoroughly formed insects attack it, but if any signs of these are visible in the smallest degree it is useless to expect a perfect bloom, as any irregularity of the bud-formation, in even so slight a degree, is sure to develop unfavourably later on when least expected. In that case, rub out the bud and reduce the growths to one on each shoot, waiting for the terminal bud. Directly this is formed, it will be seen that there are numerous small buds clustering around the centre one. As soon as large enough to handle these side buds should be removed, which is best done with a small penknife. E. M.

Deformed buds.—Many persons who have not grown Chrysanthemums with a view to the exhibiting of large blooms are sometimes puzzled to know the cause of some of the blooms being deformed, or otherwise failing to produce perfect flowers. What I mean by deformed buds are those which swell to a large size and give promise of developing an unusually large flower, but which,

instead of unfolding their florets in an even manner, incurving them toward the centre, they refuse to incurve at all, split into unequal parts, and become forked and irregular in form. The Queen of England family (especially Golden Queen and Bronze Queen) is more liable to deformity of its buds than any other class. As time goes on and the florets begin to unfold, it is seen that the flower has a confused centre, or, more properly speaking, it has many centres. The florets, instead of all incurving in a central direction, unfold in different ways. Flowers which develop thus are quite useless, and no amount of dressing or arranging of the florets can make them presentable for any purpose as incurved blooms. About an inch in the centre is quite hard and green, and covered with scales over the florets. When this scale is removed the florets unfold, some in a forked manner, some

flower-buds will be formed quite a month earlier than is required, and if such buds are allowed to remain they will produce blooms of the kind I have described. There are several details in culture, independent of bud selection, which will cause the defects described, such as not ramming the soil sufficiently hard into the pots, potting the plants in too rich a soil, and also during their growth feeding them too highly with strong stimulants.—M.

ORCHIDS.

W. H. GOWER.

SACCOLABIUMS.

THIS truly beautiful genus of plants has been very much neglected, but yet I am glad to

gance in the *Saccolabium*, as the illustration before us shows. It cannot be denied but that these plants do require more warmth than the majority of Orchids, but still not more than *Crotons*, *Dipladenias*, or such like plants, and why cannot *Saccolabiums* be found a place beside them? They do not like so much sun as is requisite for a *Croton*, and they do not require quite so much syringing as a *Dipladenia*; but there are plenty of intermediate places in the same house which would suit them if one cannot devote a house to the growth of Orchids. In the winter months I used in years gone by to keep the *Saccolabiums* in a temperature of 60°, which rose by fire-heat during the day about 5°, and when the sun was strong I did not mind if it went up a few degrees higher. The plants were kept comparatively dry—indeed, their foliage was never wetted—but there was sufficient moisture kept about the roots to prevent the leaves from shrivelling. I do not like to see an Orchid shrivelled, because I contend that a plant can be bloomed more freely and retain its foliage in a better manner by lowering the temperature than by drying it up and causing the leaves to shrivel. It is true these plants do lose a leaf occasionally, but at rare intervals if properly attended to, for as they have no pseudo-bulbs to sustain them through a long period of drought, they must be carefully nursed. I here append the descriptions of a few kinds which are well deserving the attention of all growers of Orchids:—

S. BLUMEI and its variety *majus*, of which latter we here give an illustration, and which may be taken as the general appearance of all the species, although some have longer and more recurved leaves. There are others whose leaves are shorter and which have erect spikes of flowers, but this latter section will be omitted in these notes. Like all the other kinds here referred to, *S. Blumei majus* should be grown with good exposure to sun and light, shading it, however, from the hottest sun. Good exposure to sun and light is necessary to ripen up the growth, and thus enable it to pass through the winter well, and to flower in due season. *S. Blumei* and *Blumei majus* do not differ so much in colour, but the last-named plant produces a denser and much longer raceme of flowers, the sepals and petals being white, or creamy white, suffused with a tinge of rose, and dotted with magenta, the lip a bright rosy purple or magenta-rose, while the flowers are gratefully perfumed. In this variety the spike is upwards of 2 feet in length, and it will last in perfection about three weeks. It blooms at the present season, and frequently continues to flower until the middle of October. It is a native of Java, Luzon, Moulmein, and other islands in the Indian seas. There is a pure white form of this plant, which is, I believe, at present unique.

S. GIGANTEUM.—This, the *Vanda densiflora* of Lindley, is a truly grand plant. It is a massive form with broader and more recurved leaves than *Blumei majus*. It is a slow growing variety, and, I believe, a specimen in the Bishop of Winchester's garden at Farnham Castle, many years ago, was the first and only plant in England; more recently, however, the plant has been imported in quantity, and many fine examples of this and other species of this genus I observed last season in the Comte de Germiny's garden, near Rouen, where they are splendidly grown. *S. giganteum* blooms during the winter months, and the flowers last a long time in full beauty; its raceme of bloom is about a foot in length. As the flowers are massive and set upon somewhat long footstalks, the spike appears shorter, and does not produce such a graceful effect as that of the variety shown in our illustration; the flowers are pure white dotted with amethyst, whilst the lip is violet-mauve. It is a superb plant from Burmah.

S. GIGANTEUM ILLUSTRE is a variety with broader leaves and longer spikes of bloom; the



Saccolabium Blumei majus.

flat, and others point outwards instead of all incurving toward the centre. Some of the bottom florets are quill-shape, very narrow, and protrude in a horizontal form. Next to the centre of the bloom over which the scaly part exists is a circle perhaps a quarter of an inch broad; the florets in this ring point outwards. The remainder of the flower is divided into parts not at all uniform either in size or growth. Such monstrosities as these are, no doubt, very perplexing to the beginner who has not previously seen any of the same sort, and should set him thinking what is the cause. No doubt such deformities are caused by a check to the growth of the bud at some stage in its development. The most frequent cause is the taking of the buds at too early a stage. Sometimes the

find some fine examples still extant, notably in the fine gardens at Hatfield, where, under the care of Mr. Norman, the plants flower in a most profuse manner. I also noted a mass in fine flower a few weeks ago at the exhibition at Southampton. There was a fine mass with over a dozen spikes, and altogether I think the year 1889 may be reckoned as the starting one of *Saccolabiums* into public favour. These plants suffered from the *Odontoglossum* craze, and the East Indian Orchids were shunted in a ridiculous manner to make room for the South American beauties. There are poor-flowered *Odontoglossums* as well as bad forms of *Saccolabiums*. There is an exquisite grace and charming ele-

flowers, arranged in a similar manner, are white, spotted with carmine, and the lip is carmine with deeper lines. It is an extremely handsome form, and one that is very showy during the winter months, when it blooms. It comes from Cochinchina.

S. GIGANTEUM HARRISONIANUM.—This form I am aware is by some considered a variety of *S. violaceum*, but I consider it is quite distinct. It is identical in growth with the typical plant, somewhat paler in colour, and its racemes of bloom are dense, sometimes 18 inches long, pure white, and deliciously fragrant. It blooms in winter, and was first introduced from an island in the Chinese seas called Palo Copang, but I rather think it has since been found in other localities.

S. GUTTATUM AND GUTTATUM GIGANTEUM.—These flower during the spring and summer; the leaves are long and recurved, with præmorse ends; the spikes are long and dense, each measuring nearly 2 feet long, and as the flowers are set upon short stalks they have a graceful effect; the sepals and petals are waxy white, spotted with deep rosy purple, and the lip is deep purple. The blooms are very fragrant, and last several weeks in perfection. It comes from Java.

S. GUTTATUM HOLDFORDIANUM is an old form, but rare, and it always has been a scarce plant. It is the very best of all the summer-flowering kinds, forming immense racemes of bloom, which are very graceful; the flowers are waxy white spotted with crimson, the lip also being deep crimson. It blooms in spring and summer, and comes from Java.

S. PRÆMORSUM.—This is a very distinct plant, and one that has always been scarce; the leaves are broad and very abruptly præmorse, and the raceme is very long and dense; the flowers are waxy white, spotted with lilac-mauve. It blooms during the summer, and is said to come from the Malabar coast.

S. VIOLACEUM.—Similar in growth to *S. giganteum*, with broad and thick deep green leaves, which are recurved; it is very slow in growth. The racemes of bloom are each some 15 inches long, the sepals and petals being waxy white, dotted with mauve; the lip violet-mauve. The flower is very fragrant. It blooms towards the end of winter, and comes from the island of Luzon.

SHORT NOTES.—ORCHIDS.

Lycaste Harrisoniæ eburnea (W. T.).—This is the name of your flower, and a beautiful variety it is. We are very glad to find the old species becoming so much appreciated; the variety in question has the sepals and petals pure white, the throat striped with purple and suffused with yellow.

Listera cordata (the lesser Twayblade) is a plant which I have gathered in the Tyrol and in the neighbourhood of Stockholm. It is a beautiful little plant with small ovate-cordate leaves and a long raceme of small olive-brown flowers. It is a pretty little species which is widely distributed in this country.—G.

Lælia Dayana.—This is a great beauty when grown well, as we see it just now in Mr. Bonny's collection at Swanley, where a great number of plants are now flowering, some of the forms being intensely dark. It is one of the most superb of the small growing kinds, and is of the greatest importance to the amateur, as it is so easily managed.

Cattleya Dowiana.—Several varieties of this splendid Cattleya are now very grand in several collections round London. When the bulbs get well ripened it is necessary to keep the plants dormant, so that no new growth is started before spring. I am sure this is the reason why we have failed hitherto to see the great beauty of this species, and have had so many complaints of its being such a shy bloomer.—W. H. G.

Lælia elegans incantans.—Flowers of this beautiful variety come from Mr. Measures, The Woodlands, Streatham. They are large, the sepals and petals are of a delicate fawn colour, suffused with violet; lip broad, very deep magenta-purple, the side lobes heavily tipped with magenta-purple.

It is a charming form and flowers freely. All the forms of elegans appear to enjoy more heat than the majority of the species.—W. H. G.

ROSE GARDEN.

PILLAR ROSES.

It is certainly a matter for surprise that such little use has been made of the better forms of Roses for covering pillars. The kinds of Roses that are generally to be seen utilised in this way are for the most part rampant growers with small and insignificant flowers. In certain cases the use of these old and hardy sorts is quite advisable, as they will thrive where the better forms will not grow in a satisfactory manner, but our gardens might be much benefited by planting the improved forms of the strong growing Perpetuals that are now available for covering pillars, porches and similar structures of moderate height. The merits of some of this class of Roses have yet to become known. It is not difficult to understand why they have not been recognised before. The fault lies with the raisers or introducers, as the Roses have been described as climbers when really they are not so. Now a climbing Rose as ordinarily understood should mean that its growth is sufficiently vigorous to cover a good deal of wall space, which the majority of the climbing Hybrid Perpetuals will not do. They will send up one or two strong growths every year from near the crown of the plant, but these shoots, even when left for two years, do not send out any side branches worth notice. As a consequence there is nothing to fill up the wall on each side; moreover, if these vigorous shoots do not die at the end of two years they become so weak that they have to be removed. That is so, at least, in many cases where the soil is not altogether suitable for the growth of Roses. But when the Roses to which I refer are used for covering pillars, the young shoots which annually spring up from the base of the plant are sufficient to cover them. From this it will be gathered that I do not find fault with the Roses themselves; it is the description that is misleading. Leave out the word "climbing" when describing their habits and substitute "pillar" Roses, and it will convey a correct idea of their character as regards growth. My own garden, in a small way, will demonstrate the value of many of the varieties of Roses for covering pillars, to which I refer. At the end of July last year I had the following well established in pots selected for the purpose of forming pillars: Mme. Clemence Joigneaux, Victor Verdier, Bessie Johnson, Jules Margottin, Mme. Nachury, Souvenir de Pierre Dupuy, Ulrich Brunner, Magna Charta, Her Majesty, Maréchal Vaillant, Charles Lawson, and Princess Louise Victoria. These were planted at the time stated, and many of them have made shoots, each varying in length from 5 feet to 8 feet. In some cases only one shoot has been made, and at the most not more than three.

If I were asked to select three of the best of those I have mentioned, I should name Souvenir de Pierre Dupuy, red; Princess Louise Victoria, salmon-pink; and Jules Margottin, rose. If three more only were required I would add the following: Mme. Clemence Joigneaux, rosy lilac; Victor Verdier, dark rose; and Bessie Johnson, blush. If hardier and more vigorous growing sorts are required for the covering of arches they will be found in such kinds as Gloire de Dijon, Amadis, Dundee Rambler and Ruga.

The management of pillar Roses consisting of the climbing perpetual kinds here named and others of similar growth is very simple; all the pruning they require is to cut out dead or exhausted wood and to shorten back to a spur any side branches they may make. It must be understood that soil and situation influence the growth of this class of Roses a good deal, so much so, in fact, that one-third of the Hybrid Perpetuals might in some cases be readily converted into pillar plants. It is so in a garden within a mile of where I write, where the Perpetuals have reached to the tops of poles

11 feet in height, and many of the others make shoots 8 feet and more in length in one season. Taunton. J. C. C.

ROSES AFTER ONIONS.

SOME of our most successful growers not only plant Strawberries after Onions, but run the two crops abreast with apparent benefit to both; and if Strawberries, why not Roses? Indeed there are excellent reasons why we should grow Roses after Onions in cases where Roses are merely grown for cutting or for show, and not for decorative effect in the garden nor the furnishing of landscapes. It must be admitted that as generally grown the decorative value of Roses as plants is weak and their landscape effect worthless; hence less is lost than might appear by relegating Roses to the kitchen garden. It is evident that the Roses like it, though these arrangements may often seem incongruous to possessors of refined taste with a delicate appreciation of the fitness of things.

Where this plan is adopted, there are few places that suit Roses so well as on the heels of Onions or early Potatoes. Such crops are cleared off tolerably early in the season, thus affording ample time to prepare the soil for the coming Roses, and to have it deepened, enriched, and mellowed before the season of planting arrives. Besides, the best soil in the garden is mostly devoted to Onions and Potatoes, and ground that will grow either well, may, with a little extra culture and manuring, be expected to grow Roses to perfection. The theory of all wise and profitable rotations rests on the principle that a change of crops is almost equivalent to a rest to the soil, and the greater the disparity between crops in immediate succession the greater the benefit of the change. On this ground few changes are likely to prove more beneficial and profitable than from Onions to Roses.

The early clearance and culture are also of the highest benefit. These afford facilities for deep trenching, abundant manuring, and several months of mellowing, incorporation and consolidation before the season of planting of Roses. All these are points of great moment, and the whole combined lay a sure and certain basis for future success. More than is generally supposed depends on the season of preparation. Ground trenched up and manured in the late summer or early autumn is in far better condition for planting than when these operations are deferred till the eve of the planting season. In the former case the earth is mellow, warm, porous; in the latter cold, raw, and not seldom adhesive, plastered together by being worked wet.

Therefore, all who may be disposed to try the rotation of Roses on the heels of Onions may set about preparing their ground for the new crop the moment the Onions may be cleared off. These may generally be pulled up at once, and by laying them on walks, yards, &c., to dry, the ground may be manured and trenched up at once. There are two important points in these operations—the thorough incorporation of the manure and the leaving of the surface as rough as practicable. This will enable sun and air to accomplish their work of warming and amelioration, and expose a wider area for the enriching effects of the rains and dews.

HORTUS.

SHORT NOTES.—ROSES.

White Japan Rose.—In THE GARDEN, p. 188, August 31, reference is made to the white Japan Rose and to its large clusters of scarlet fruits. May I ask if there is any particular kind of this Rose which produces these scarlet fruits, or if any special quality of soil or situation is necessary to their production? I have grown for several years *Rosa rugosa alba*. It has bloomed fairly well with me, but not with such an abundance of flowers as your writer seems to have, but I never have the scarlet fruit. The hip forms after the flower, but invariably it withers and drops off, much to my disappointment.—C. EMPSON, Beechwood, near Sowerby Bridge.

Rose Reine Olga de Wurtemberg.—Those having a large space of wall or other suitable surface that they wish to quickly cover with a vigour-

ous, but beautiful Rose, should plant the above named kind. I know of no Rose to excel it in vigour, as in good soil it will make shoots 12 feet long the first season. As far as I have seen, it seems to enjoy a complete immunity from mildew. This is no fancy, for besides our plant of it is one of Reine Marie Henriette, which is also a vigorous and beautiful Rose for a wall, but most susceptible to attacks of mildew. The shoots of Reine Marie Henriette have been as white with mildew as though dusted with flour, and although where the two kinds meet the growth commingles, there has not been a single spot upon the glossy foliage of Reine Olga. The flowers, of a bright rose colour and strikingly effective in contrast with the wealth of rich and beautiful foliage which clothes the shoots, are only semi-double, but they are borne in large terminal clusters. This Rose requires plenty of room, as if pruned hard to keep it within a prescribed limit there will be very few, if any flowers. —A. H.

MARKET GARDEN NOTES.

THIS has been a grand season for the growth of all kinds of market garden crops, and, I may add, of weeds as well, and now, in addition to clearing off crops that are no longer profitable and storing others for winter, there is the work of getting the land free from weeds while the sun's rays are still strong enough to dry them up quickly. After September is gone by the work becomes much more tedious and expensive, and no cultivators of the land are more alive to the fact than market gardeners that there is no profit in growing crops choked with rubbish, and seldom is there anything more than soft annual weeds to be found on their land. But if they take to any that is stocked with Couch Grass, Bindweed, Docks, &c., this is the time to set about cleansing it by ploughing up roughly, and as soon as thoroughly dry breaking it down fine, and hand-picking all roots and rubbish and burning it. In a surprisingly short time the worst cases of foul land are changed into clean, friable soil. It is surprising what constant hoeing and scarifying the surface alone will do in this way, as even the strongest-rooted plants soon die out if kept from making headway above the surface.

POTATOES still form the main item of work, and lifting and storing are going on very satisfactorily. The early crops are lifted and the ground cropped again, and the second early and main crop Potatoes now claim attention, and they all turn out well and free from disease. The Regents that used to be so popular years ago are again getting into favour, and they are splendid cooking Potatoes. The latest sorts, such as Champions and Magnum Bonums, look promising for a very heavy yield.

ONIONS are now being stored, but they are a variable crop, as the spring-sown crops came up badly and second sowing was the rule, but this caused them to be late. The transplanted crops from autumn-sown seed have been very fine, and large breadths of them are being sown again now, as in this locality they are more reliable. The Tripoli varieties and Giant Rocca, with White Lisbon for drawing green, are in greatest demand. I may add that the Onion is the only crop we get brought over from the other side of the Channel, and for several weeks in the autumn the hawkers of Onions are continually calling at every door in the street. With all this competition, however, a crop of Onions that will keep is still one of the best to grow, and James' Long Keeping and the Bedfordshire Champion, that keeps as hard as possible until spring, hold their own against all comers.

LETUCES to stand the winter for transplanting in spring are now being sown. The seed is generally sown on a well-sheltered border with a good slope to ensure the soil drying quickly, for when the soil is dry they seldom take any injury from frost in this locality. The black-seeded Brown Cos is the favourite kind, and the hardy Cabbage kinds are usually sown rather thinly and allowed to mature their growth without transplanting.

CELERY now requires frequent attention, both

in keeping the base clear of suckers, watering liberally in dry weather, and moulding up as growth progresses. Great care is necessary to keep the leaves erect while placing the mould carefully around them, as when the soil is hard the hearts of the plants get bent and spoiled if it is not worked down finely around them. In this locality the soil is very favourable for the production of clean sticks of Celery, being light and sandy, and if well worked up before pressing it around the plants they blanch perfectly. Late crops that have been put out recently will want encouraging to make growth while the warm weather lasts. Good soakings of sewage help this crop very much, as they will take abundance of water while making growth.

FRUIT GATHERING, marketing and storing are now taking a good deal of time. Apples of early kinds are mostly sent to market direct from the tree, and being as a rule the most abundant croppers pay the growers as well as any, as there is not much labour attached to them. Lord Suffield, Keswick Codlin, and Hawthornden are the principal kitchen sorts, and Quarrendens, Kerry Pippins and other dessert kinds that mature early are being cleared off rapidly. The trees thus get a good spell of warm weather after the crop is gathered to mature their wood and plump up their buds for another year. There appears to be a great deal of worm-eaten fruit on the trees this year, but the gales of wind lately have cleared off the majority of these and left the sound ones to swell up rapidly in the summer-like weather that now prevails.

TOMATOES are now ripening off well on outdoor crops, and if the present fine weather continues there will be abundance of this popular fruit, and thus far they have realised good prices. Keeping the shoots closely cut in now so as to concentrate the vigour of the plants on the swelling up and ripening of those fruits already set are the main items of culture needing attention. Keep the roots well supplied with liquid food and the tops as dry as possible.

STRAWBERRY BEDS are being planted now on soil that has been deeply cultivated and well manured. Sir Joseph Paxton is the favourite about here, and there are many inquiries for plants of Noble. Cleaning out the beds that are to remain another year is being pushed on vigorously now that drier weather prevails.

Gosport.

J. GROOM.

NOTES OF THE WEEK.

Double *Lilium auratum*.—Mr. Waller tells me that amongst other plants which he has introduced from Japan is a double form of this splendid Lily. —W. H. G.

Ixora macrothyrsa.—What a glorious plant this is! The huge heads of bright crimson flowers are as large as a good Cauliflower, and they last about a fortnight in perfection. There is a fine plant of it in flower in the Victoria house at Kew.

Gladioli from Langport.—We have received from Messrs. Kelway & Sons, Langport, flowers of *Gladioli Oppianus* and *Vacuna*. The first consisted of two distinct spikes from one bulb—an interesting sport; the colour of the flowers on the one scarlet, and on the other rose. *Vacuna* is a delicately coloured variety, the flowers shaded lilac.

Roses from Colchester.—I send you a bloom of the new Tea Rose Ernest Metz, cut from a young plant budded this summer; also two flowers of H. P. Eclair, a sort but seldom seen.—BENJAMIN R. CANT.

* * A beautiful and valuable new Tea Rose of a soft carnation-rose shade, brightest in the centre of the flower. It should become common. Eclair is a rich red-coloured H. P., and like Charles Lefebvre somewhat in style.—Ed.

Clematis Jackmani alba.—In Oct., 1885, I obtained from Mr. Noble two plants of *Clematis Jackmani alba*. They are planted on two of the piers of an old-fashioned conservatory over 14 feet high. I was disappointed last year by the blooms becoming semi-double and a dingy grey. Mr. Noble suggested to me that this arose from my having neglected to cut them back. I cut them down in February, 1887, and mulched them. This season they have been a mass of beautiful white blooms from top to bottom, a very

effective contrast to the blue on the other two piers and greatly admired by all my visitors.—H. R. C., *Hillingdon House, Uxbridge*.

Gardeners' Orphan Fund.—We are pleased to learn, through Mr. Wildemith, that on the occasion of the public opening of the gardens and grounds of Heckfield Place on August 24 and 26, the sum of £6 10s. was realised for this excellent charity. A greater number of visitors would doubtless have been present, but the weather was very unfavourable on the first day.

Abutilon vitifolium album.—Having saved a good quantity of seed of this fine and free-blooming, almost, if not quite, hardy malvaceous shrub, I shall be happy to send some seed to any of your shrub-loving readers who like to send me a stamped envelope, legibly addressed to themselves, to the address at foot of this note.—W. E. GUMBLETON, *Belgrove, Queens-town, Ireland*.

Kniphofias at Haarlem.—Max Leichtlin's *K. Leichtlini aurea* is now in full flower with me, and an exquisitely beautiful thing it is with its pure yellow flowers and protruding dark red stamens. The type and its other new variety, *K. L. distachya*, will also soon be in bloom. *K. (Uvaria) grandis* is also especially fine and well deserves its name. It is the most conspicuous object in my garden just now.—C. G. VAN TUBERGEN, JR.

Eschynanthus speciosus.—This is one of the very best flowering stove plants. It is of erect habit and forms a compact shrub 2 feet or so high and well branched, whilst almost every branch bears a large corymb of beautiful tubular flowers, the colours of which are deep yellow and scarlet. Some well-flowered examples have been very attractive in the stoves at Kew. The pendant kinds, of which *A. Lobbianus* and *A. pulcher* are the best, are also in bloom. These two make very pretty basket plants. They prefer a peaty soil, a high temperature, and always plenty of water.

Hedychium coronarium and flavescens.—These two plants are represented at Kew by very large specimens, and both of them are now finely in bloom. The fragrance of the flowers, their elegance of form, and purity of colour are well worthy of the Indian ladies' favour, who prefer them for garlands, &c., at wedding ceremonies. *H. flavescens* appears to be simply a yellow-flowered variety of the old *H. coronarium*, although some consider it a distinct species. For large moist stoves or intermediate houses, these two, and indeed most of the *Hedychiums*, are specially useful.

Blue Gum Tree a preventive against flies.—I have tried this plant in my house during the summer which is now past as a preventive against the plague of flies. I heard last season that *Eucalypti* would keep flies from a room if planted out in a border before the window, but having no such convenience, I have placed a plant in every room and found the idea is fabulous. I have had just as many flies in the house, and the leaves have proved excellent resting-places for them. It would be a great thing indeed if some plant could be found that would drive the flies from our sitting-rooms.—W. H. G.

Novelties at Nancy.—On revisiting last week the nursery gardens of Mons. Lemoine and of Mons. Crousse at Nancy, I found that my expectations, described in THE GARDEN last autumn, were more than realised, for the quantity and also the quality of their novelties were quite surprising. Amateurs and growers of the *Gladioli* owe to Mons. Lemoine their thanks for his having originated a beautiful new race of hybrid *Gladioli* described lately in THE GARDEN, but unless they are fortunate enough to have seen for themselves what is in store for those who wait anxiously and impatiently to possess these beautiful novelties, they cannot realise from descriptions the variety or beauty that has already been obtained by the skill and careful selection exercised by Mons. Lemoine. The former race of hybrid *Gladioli* derived from a different cross, for which we are indebted to the same cultivator, has also been developed to a great extent, comprising now flowers of first class quality and size. These hybrid *Gladioli* have recently obtained for Mons. Lemoine the highest award at the great Exhibition in Paris. At the gardens of Mons. Crousse the centre of attraction is the splendid collection of *Begonias*, both single and double, including many of the finest double yellow and double white varie-

ties in existence, and single varieties of a size, substance, and colour leaving little more to be imagined or desired.—J. T. POE.

Tacsonia hybrida.—This is a new name for the old favourite *T. Van Volxemi*, or at all events plants are being distributed under the first name which have every claim to the second. We saw plants in flower side by side under these two names in the temperate house at Kew a day or two ago. *T. manicata*, an interesting species, remarkable for its long, thick calyx tube and comparatively short pale rose petals, is also in flower there. It would be difficult to find a more beautiful and useful climber for the greenhouse than *T. Van Volxemi*; indeed one might say it ranks first. If any climber of the kind runs it close, it is *Passiflora cærulea* in its best forms.

Nerines.—The Nerine season has been opened by the flowering of a rare and distinct species, probably a new one, so far as horticulture is concerned, called *N. angustifolia*. It is in the way of *N. flexuosa*, but differs in its narrow shining green, almost terete leaves and tall scapes, the tallest exceeding 3 feet in height; whilst the flowers are in large umbels, each one having a pedicel 4 inches long. This plant is likely to be of considerable value as a breeder. It has the distinct character of retaining its foliage all the year round; at all events, the Kew plants have been in leaf without break for nearly three years. *N. curvifolia* and *N. sarniensis*, with their numerous varieties, are also flowering. Beautiful they all are, but their names are sadly in want of revision. Some of the plants with distinctive names do not appear to have any character peculiar to them except the name.

Fruit of Cherry Plum.—The enclosed fruit of *Prunus Myrobalana* (Cherry Plum) may interest you. There are many intermediate shades between the deep black heart and the old ivory-yellow; the latter I imagine to be somewhat uncommon, and is produced on but one of the many trees which fourteen years back I planted as "nurses," but so pretty is the display of bloom in early spring and of fruit in autumn, that I have not the heart to cut the trees down. The fruit, too, is useful and delicious, whether eaten at dessert, in tarts or preserved. The darker the colour of the fruit the earlier it ripens, the old ivory-yellow being the very last and the special favourite of the birds, who seldom permit it to fall. The crop never entirely fails; this year it is somewhat short. I regret having delayed so long in sending you specimens, but I waited for the yellow to ripen, and found this morning that the blackbirds had almost completely forestalled me, having made a sudden raid upon their favourite tree.—NORMAN.

Marsh Gentian (*Gentiana pneumonanthe*).—This rare and beautiful British plant is now in flower on many of the Dorsetshire heaths. Last week I found it very abundant about two miles from Corfe Castle, some acres of ground being thickly sprinkled with its large blue flowers. Although the plant generally has but one or two flowers on a stem, I found many with five or six, and one magnificent specimen with seven fully opened flowers and four buds. I also found some very dark and some pale blue varieties, one almost milk-white, and one root with several stems, all bearing double flowers. This district is evidently one of the head-quarters of the species, yet its distribution is very erratic, and you may walk for miles over some of the heaths without finding a specimen, although there is no apparent difference in the soil or the surrounding vegetation. Where it grew most luxuriantly was not boggy or even damp, but a rather dry sandy loam, a fact which may afford a hint for its successful cultivation.—A. R. W., *Parkstone, Dorset*.

Spatium (*Lewisia rediviva*).—One of your correspondents asks how to grow this plant. As I saw it last year in its native place I will tell him the conditions under which it grows, as they are rather peculiar. I found it growing in a dry and prairie country at the entrance to the Yellowstone Park, in Wyoming, about 4000 feet to 5000 feet elevation, not on the mountain or among rocks and

Grass, but among Sage brush and *Opuntias*. It can stand any degree of dry cold and snow in winter, and any amount of dry heat in summer, with plenty of rain in the spring and autumn. When the flowers die off I think it would be best to take up the thick fleshy roots, or if in pots keep them quite dry for three or four months. The plants which we took up in June last year in full flower were not re-planted for six weeks, and flowered most abundantly with me this year in pots, and with Mr. Godman on his rockery near Horsham. They appear to be quite strong and healthy, though leafless at present, and I shall not water them till November.—H. J. ELWES, *Cirencester*.

Calostemma luteum.—The *Calostemmas* have been called Australian *Daffodils*. There are three species, all with Narcissus-like bulbs, linear green deciduous leaves, and erect scapes a foot or so high bearing umbels of flowers, which are purple in *C. purpureum*, white in *C. album*, and yellow in that under notice. The flower is funnel-shaped, and divided into six segments which form a sort of cup; in the middle of this is the cup formed by the united stamens, as in *Eucharis*. Each flower is an inch across and dark yellow tinged with green. The species may be called interesting rather than beautiful. It is now in flower in the cool bulb house at Kew.

Double Sunflowers.—As these are now in flower, would it not be a good time to have their names decided. There are two distinct forms in gardens, one with full double flowers in which all the florets are the same length; this has always, so far as I know, been known as *H. multiflorus plenus*, and was re-distributed last year under the new name of *Soleil d'Or*, and another in which the florets of the disc are shorter than those of the ray. This I have hitherto known as *H. m. maximus plenus*; it is, in fact, the double form of *H. multiflorus maximus*. Of this I have full proof, as a plant here is at present bearing both single and double flowers. This was also re-distributed last season under the new name of *H. m. anemonæflorus pl.* For years Mr. Ware figured and sold the latter form as *H. multiflorus pl.*, and, of course, under this name it must exist in many gardens. Mr. Ware has now changed the name, and calls it *H. m. grandiplenus*, so we have this variety about under four names—*H. m. maximus plenus*—I contend its correct name—*H. m. plenus*, *H. m. grandiplenus*, and *H. m. anemonæflorus pl.* It is not contended, I think, that there are more than two kinds, one of which has two names, and another four. Let us have a selection made from amongst these and an end put once for all to the confusion.—T. SMITH.

Yorkshire Gala.—A meeting of the life members and guarantors of the Grand Yorkshire Gala Society was held recently. An abstract of the treasurer's account of receipts and payments for the years 1888 and 1889 was laid before the meeting, showing the income to be £1643 6s. in 1888, and £1888 3s. 5d. in 1889, the profit for the year 1889 being £164 10s. 4d., as against an adverse balance of £33 12s. 6d. in the previous year. An amount of £1725 (of which £415 is from life memberships) is invested in the York Permanent Building Society as a reserve fund. The chairman, Sir Joseph Terry, said that £164 10s. 4d. was a very handsome profit to realise in one year, and he thought it was a larger balance than they had had for many years. Unfortunately, there were some debts to the account which would encroach upon their profits, so that the amount they had for distribution among the medical institutions of the city was very much diminished. Still, that did not detract in any way from the success of the committee's work during the year, and he was sure the financial statement testified to the renewed effort, if he may use the term, which the committee had applied to their work.

Peruvian Swamp Lily (*Zephyranthes candida*).—A large potful of this pretty white Peruvian Swamp Lily is now an object of great interest in my cold house. There is a vigorous growth of Rush-like foliage, and from amongst it have risen up several of the large white Crocus-like flowers. The bulbs were potted nearly two years ago, and now

that they have attained full size, the flowering stage is reached. The pot stands on a shelf, and I have given plenty of water during the summer, besides giving the surface a dressing of a plant fertiliser on two or three occasions. It is so pretty and so easily grown, that the wonder is it is not oftener seen. It would appear that the best way to secure a good head of bloom is to grow the bulbs vigorously, and when pot-bound, flowers will come. When cultivated in a pot it appears to like plenty of moisture.—R. D.

Bulbous plants in flower at Kew.—As a really good flowering plant of large and stately proportions, brilliant in colour and easy to manage, no stove *Crinum* surpasses *C. augustum*. It often blooms twice in the year, and the fragrance of its large deep crimson flowers is an additional charm. By its side *C. asiaticum*, *C. defixum*, and *C. amabile* are only second-rate. These and *C. giganteum* are in flower in the Palm house. Quite as attractive as the *Crinums* are the *Pancratiums*, with their enormous heads of white deliciously fragrant blooms. *Eucharis amazonica* is worth mentioning too, because it thrives so well in this gigantic structure, and is often shaded all day by the thick Palm leaves overhead. Plenty of root room and a strong loamy soil kept moist all the year round are all that the above plants require.

Allamanda violacea.—When writing on the cultivated *Allamandas* in THE GARDEN, 1886, under plate 542 (*A. Hendersoni*), I called attention to a species with violet-coloured flowers, which had been in cultivation in England in 1861, and I asked if anyone knew of its existence in gardens at the time of writing. As far as could be ascertained, however, the plant had been lost to cultivation, and remained so until re-introduced last year to Kew, where it may now be seen flowering in one of the stoves. It has the habit of the yellow-flowered kinds, such as *A. Schottii*, but the leaves are in whorls of four and covered with scabrid hairs. The flowers are clustered on the ends of the young, strong shoots, and each flower is 2½ inches long by 3 inches across, of good substance, and lasting; the colour is bright salmon-purple, not violet, as the name would suggest. The plant appears very easy to cultivate, and this, coupled with the attractiveness of the flowers, ought to make this species a popular garden plant. Three other good *Allamandas* also in flower at Kew just now are *A. grandiflora*, *A. Hendersoni*, and *A. nerifolia*. Besides these, *A. cathartica* and *A. Chelsoni* are also in bloom, but they are not as good as *A. Hendersoni*, which is the best, or at all events much the largest-flowered of all *Allamandas*.—W. W.

Diseased Hollyhocks.—I send you some leaves and stem of diseased Hollyhocks grown from seed this year. The seed was sown in February, and by the middle of July I had 150 very fine plants, which gave promise of a good display of flowers, but the disease suddenly appeared and soon made a wreck of the lot. I had an idea that seedlings were seldom, if ever attacked the first year.—SANGUINEA.

*** In reply to "Sanguinea," your Hollyhocks are infested with the Hollyhock disease, which is unquestionably vegetable, as it is a fungus (*Puccinia malvacearum*). No cure has yet been found for it, and the only preventive is not to grow Hollyhocks for two or three seasons.—G. S. S.

Pyrus leaves shrivelling.—Could you kindly inform me what is the cause of the leaves of a young *Pyrus* turning brown and shrivelling as if dead? It was a young, healthy tree until about a fortnight ago, when it suddenly showed signs of distress, and the small sprig which I enclose will show you what state it is in now.—J. G. M. G.

*** In reply to "J. G. M. G.," I cannot give any reason for the leaves of the *Pyrus* shrivelling. There are no signs of fungi or insects on it. Can there be any wood-boring insect in the stem?—G. S. S.

BOOK RECEIVED.

"The Garden's Story; or, Pleasures and Trials of an Amateur Gardener." By George H. Ellwanger. D. Appleton & Co., New York, and Carlton House, Paternoster Square, London, E.C.

Name of plant.—E. F. Vicars.—*Physianthus albens*.

Name of fruit.—E. H. Eyles.—Nectarine Elrüge.

WOODS & FORESTS.

THE SCOTCH FIR AS AN ORNAMENTAL CONIFER.

ALL lovers of this prince of Conifers owe you a debt of gratitude for your admirable illustrations (pp. 167 and 182), as well as Mr. Coleman for his remarks on the former page. There is only one of the latter which I, as a Scotchman, cannot agree with, that its timber for building purposes, "however, is, of course, inferior to the yellow deal of commerce." True, Mr. Coleman qualifies it by admitting that there is Scotch Fir timber and Scotch Fir timber, and that that which is grown in Scotland is the best. But this will hardly satisfy those who have any doubts of the extreme hardness and durability of good ripe resinous Scotch Fir. Neither does it run on all fours with the admission that it is little, if at all inferior to Oak for dry building purposes. For from whence has this been proved true or admitted of the yellow deal of commerce? But it is more pleasant to uphold than to differ from Mr. Coleman, and hence I quite agree with all the rest of his appreciative notice, and put in a strong plea for the more general planting of Scotch Firs for the clothing of poor commons and the furnishing of landscapes. Without going further north than the woods of Scone Palace or the highlands of Perthshire one may be furnished with vivid illustrations of the capacities of this tree to clothe semi-barren land with profit and with beauty. Arboreal enthusiasts are always deeply impressed with their first sight of a Scotch Pine forest, rising from river-bank to mountain-top, and stretching on and on for unbroken miles. Never have I entered or left a forest of Scotch Firs without a feeling of semi-reverence for the tree, which by simple repetition of its ruddy stems and ragged tops produces such a powerful, not to say magnificent, effect. The sanitary results of such wholesale reclamation of moor and mountain are as potent as they are beneficent, and beneath the semi-glaucous foliage and in the sweet resinous atmosphere of the Scotch Firs one feels that it is not needful to seek the back forests of other lands to reap all the benefits of the Pine cure or stimulant.

As to the profit of these wholesale reclamations through the planting and cultivation of the Scotch Fir, perhaps Mr. McCorquodale, the able forester on the estates of the Earl of Mansfield at Scone Palace, may be induced to tell us something—much. Since the Larch disease has become so prevalent, the Scotch Fir may be said to rule supreme over the reclamation and conversion into sources of profit and extension of cover of moor and mountain. And right nobly it has done, and is doing, its work, though much more still remains for it to accomplish on both sides of the Tweed as well as in Ireland and Wales.

Abreast with this planting for profit, there ought to be a general planting of Scotch Firs for pleasure all over the country. Utility may be said to have dogged the steps of this fine Conifer for ages. Invaders, travellers have planted groups of it here and there as landmarks or memorials—finger-posts marking the courses of battlefields or camping grounds and the lines of invasion. Others planted it for shelter or timber, or for the simple reason that nothing else would grow on such barren soil. And yet others planted it as holdfasts to prevent the earth being swept off by scouring rains and fierce winds; and yet others, as we have seen, especially in the far north, on the most colossal scale for profit. But worse has yet to be recorded in the history and uses of this tree. Thousands of planters have thought it fit for little else than a sort of dry nurse for other trees. A veritable giant in vigour and stature, with tissues and texture of iron-like hardness, it has been dwarfed and kept down for the lowest and most menial purposes, out and carved anyhow, every way to foster the growth of hard-wooded trees. So generally have these nursing functions been practised, that probably it is not too much to affirm that hardly more than one per cent. of all the Scotch Firs raised

by millions annually ever reaches to the dignified and useful estate of mature timber.

Amid all these divergent uses of Scotch Firs, how few comparatively have planted it for its unique beauty and simple grandeur. And yet few trees can match or master it for these qualities, as your double illustrations and Mr. Coleman's descriptions so abundantly prove. No tree possesses a stronger individuality, a more pronounced personal idiosyncrasy, though few differ more in mass and in detail, as will be apparent in an instant on looking at the two illustrations on pp. 167, 182. What a vivid contrast between the scanty tops and severely simple, straight boles in the group on p. 182 and the rugged, and doubtless rudely contorted, broken boughs and broad, glaucous head of the isolated specimen on p. 167.

And these marked distinctions are so constant and clearly defined as to endow the Scotch Fir with the ornamental qualities of two, more or many trees. No tree is perhaps so powerfully modified through site, soil, distance of planting, modes and time of thinning, pruning, and general treatment and culture. While no tree is less particular about soil, for example, perhaps no one is more quickly modified or moulded by it. Again, few are more powerfully affected by being planted singly or in groups.

Perhaps the Scotch Fir is most ornamental even in huge masses in great forests. Next to these isolated single trees, groups and masses are most effective in parks, pleasure grounds, general landscape, or as roadside trees. It is astonishing how seldom they are grown in the latter position unless for shelter as nurseries for other trees, or—may the wild, free, strong spirit of the Scotch Fir forgive the desecration—as hedges. I have never seen them so used in Scotland or the north of England, but in the blowing sands and light soils of East Anglia the Scotch Fir forms a useful hedge and bears cutting fairly well.

But how often in visiting pinetums filled with miffy plants from all parts of the globe have I longed to clear out the dead, dying, unhappy-looking lot and furnish the site with bold groups, and isolated trees of all the strains and varieties of Scotch Firs, separated with a few Birch, if need be, or other equally effective contrasting trees. Beautiful, wholesome-looking during its youth, age but adds to the picturesque grandeur and magnificence of the Scotch Fir, and as it mellows into hoary age, as in the Devonshire specimen illustrated, it is difficult to say whether the broad glaucous top, the weather-beaten, rent, broken, and contorted boughs, or the bent ruddy stem is the more picturesque and beautiful. Certain it is that we may search over pinetums in vain for such specimens of arboreal grandeur and antiquity as are to be found among those isolated specimens of Scotch Firs more or less richly scattered here and there, up and down the United Kingdom. D. T. F.

THE PLANTING SEASON.

FEW will be inclined to dispute that the best time for planting and transplanting forest as well as ornamental trees, whether deciduous or evergreen, is just when the leaves have fallen or are about to fall; but where planting has to be done upon an extensive scale, it has to be proceeded with at all times when the weather is open and favourable throughout the winter. Still, the sooner a commencement is made the better, and one condition is essential to the success of such operations, more particularly when they are performed at somewhat unfavourable seasons, viz., that the plants should have been properly prepared for removal in the nursery before being sent out, and if this has been the case, planting may be performed with little risk at almost any season. Young trees and shrubs of all kinds should be moved or transplanted every season while in the nursery, and this has generally the effect of inducing them to root near home, as it is called, or near to the boles or stems, and there to form dense masses of fibrous roots, which necessarily retain a considerable portion of soil. When this is the case, the moving and transplanting in reality

inflict but a trifling check upon the plants. With regard, however, to the transplantation of trees or shrubs which have attained considerable dimensions, and to which these remarks are intended more particularly to apply, the case is somewhat different, as they will probably have occupied the positions in which they now stand undisturbed for years, but from which, owing to some cause, it may nevertheless be desirable to remove them. In cases in which this removal has been for some time decided upon, and in which the trees have been judiciously root-pruned some twelve months ago, their removal will be comparatively easy, and little risk will attend the operation, which may be proceeded with at once, even in the case of deciduous trees. The leaves of these have now accomplished their mission, or nearly so; the young wood is in a comparatively ripe state, and the buds have also arrived at that condition when they will be the least affected by the temporary check which is necessarily sustained through the mutilation of the roots. If the operation, however, is performed now it will afford ample time for reparation before the soil and the atmosphere have become so cold as to retard the production of fresh roots. In all cases in which it is inconvenient to attend to the final removal of trees at present, or soon after the leaves have fallen, it will be advisable (more particularly if the specimens to be moved are valuable) to defer the performance of the operation until somewhat late in the spring, when it may be accomplished with more probability of success than at any time during the winter or late in the autumn, however favourable the weather may be. There are, however, one or two points which it is quite necessary should receive attention in the case of late spring planting—viz., keeping the plants as short a time as possible out of the soil, so that the fibres may not, to any great extent, become dried up, and the giving of abundant and frequent supplies of water to the roots, as well as mulching the surrounding soil to prevent undue evaporation, and the syringing of the plants every evening during dry weather until there are sufficient indications of their having become established in their new situations, when that attention may, of course, be discontinued, especially if the weather be damp or cloudy. It has been frequently shown that Evergreens, and even deciduous plants, may be successfully transplanted at almost any time of the year; and as regards Evergreens, many planters prefer early summer, say the beginning of May, to any other season for the performance of this operation. The only drawback or objection to the selection of this period is the very considerable amount of labour which it necessarily demands, in the form of watering and other attentions, at a very busy time of the year. Therefore, all things considered, early autumn may in most cases be regarded as the most suitable period for the prosecution of this work, when the newly-transplanted specimens will not only require less labour in the form of watering, &c., but it will be also possible to devote more time and attention to all their requirements. P. G.

The Greendale Oak.—A correspondent with the Scottish Arboricultural Society during their journey to Sherwood Forest the other day mentions this Oak, which in 1724 had an arched opening cut in it, that the then Duke of Portland might be able to win a bet by driving a coach and six through "a tree on his estate." The duke won his bet, but destroyed the Oak, which, however, every year gives proof of its vitality by sending forth a thick crop of leaves on its shored-up limbs. The tree is 45 feet high, its girth is 30 feet at 5 feet from the ground, and 31 feet round the base.

Grouse in Norfolk.—We have here a clump of Ling about 2 feet over brought from Yorkshire some four or five years ago. We have many acres of Ling and Heather all round this clump, but the pheasants eat the young shoots, so we are obliged to net it all round, and over the top as well. They do not touch our Ling, at least as far as we can observe. My employer wants to know how it is that grouse will not live here or anywhere in Norfolk. Is ours the wrong sort of Ling?—ALBERT FENN, *East Dereham*.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

KNIPHOFIAS IN IRELAND.

A THOROUGHLY representative set of Kniphofias has been got together by Mr. Gumbleton at Belgrove, Queenstown. These are planted on a grassy slope in front of the house, intermixed with fine examples of Cordylina, Pampas Grass, the pink-plumed and the variegated as well as the ordinary form, and so arranged that they are not only effective, but afford an excellent opportunity for study and comparison. About fifty species and varieties comprise the collection, many of them being now in full beauty, including *La Perle*, *longiscapa*, *spectabilis*, *grandis*, *nobilis*, &c. Although belonging to the diminutive section, one of the most striking now in flower is a seedling named by Mr. Gumbleton *K. cinnabarina*. This charming little plant has grassy foliage, from which rises a scape about 20 inches high, crowned with a roundish head of flowers about 5 inches long. The colour of the flowers is a good dark cinnabar-red, and as they are all open together and the protruding stamens are tipped with black anthers the effect is very good, there being none of that ragged appearance which the fading flowers frequently give to the inflorescence of Kniphofias. In this richly stocked garden interest does not centre alone in the Kniphofias. Close by them masses of *Colchicum* are already in flower, and the beds of *Begonias*, both single and double, filled with the choicest English and French novelties, are a sight not easily to be forgotten. Another good plant in flower is *Crocsmia aurea imperialis*. It is about 4 feet high, and about thirty flowers were open on the stoutly branched inflorescence. These are much larger and more brightly coloured than those of the type, so that this plant may be classed as a distinct and desirable novelty.

ASTERS AT CHISWICK.

IF those who write so glowingly of ordinary annuals for garden decoration could see the large quantities of these growing at Chiswick as I saw them the other day they would entertain very different opinions. Beautiful in June and a part of July, by the month of August and onwards they have become wild, rough, and flowerless, in fact are miserable to look upon. Even the dwarf or Tom Thumb *Nasturtiums*, so gay for a few weeks, are now a perfect cover of foliage, the flowers being all buried. Possibly the Chiswick soil is too good for annuals. By contrast the Asters are gay and beautiful and blooming profusely, the plants liking rich soil. The kinds grown appear to be all from German strains, and there would seem to have been a strong effort made on the part of the seed growers of Germany to send over quite indistinct as well as distinct sorts, so that the British seeker after novelties gets rather bewildered than otherwise. The first feature which strikes a visitor is that the Germans are very loose and careless in the matter of selecting forms and types, as also in the production of defined colours. Perhaps it may be said that Asters become demoralised by the English air. I rather hold that the German growers in their haste to create new forms do not give them anything like the hard rigid selection needed; hence when stocks are grown here they are found to be, as at Chiswick, all at sixes and sevens. Particularly is this the case in relation to colour, for varieties marked as of some special colour give several colours; others as dwarf give irregular heights; others as of some special form give diverse

varieties. If it were possible to select a dozen or so of the best kinds rich in colour or pure white, obliterating largely the variegated or crown flowers, good service would be done to Asters. Judging by what may be seen at Chiswick, it seems needful to grow a great lot of chaff from which to winnow the wheat.

Quilled Asters, it is evident, do not improve in German hands. The home strains are better at all points; the flowers larger and purer than are those from German seed; indeed, we can grow seed of the finest quality from quilled Asters in this country; hence are quite independent of the Continent for them. We are not so successful with the Victoria, *Pæony*-flowered, *Chrysanthemum*, and other flat-petalled forms, not that home-saved seed will not reproduce flowers of the finest quality, but because damp autumns render the preservation of the flowers difficult. Asters, to be grown for seed, should be got out especially early, so that the plants may bloom during August, then, with well-dried flowers and matured seed, fine stocks are ensured for another year. We might do much more in the production of really fine Asters from home-saved seed if we tried. The prettiest Asters at Chiswick seem to be the tallest, but medium-flowered varieties, which are so suitable for cutting from. Of these the Victoria, Needle, the taller Pompons, and the Imbrique forms are charming. The Needle Asters, with their stiff-pointed petals, have the deepest blood-red flowers—a glorious colour; also rosy red, carmine, and blue. The Pompon crowns with white centres I do not care for for cutting purposes; but the self Pompons give some capital forms, about 12 inches in height, as rosy red, carmine, white, and blue, all decided hues. Another small-flowered form, the Grace Aster, includes some lovely colours, but, as with so many others, is of very irregular height. A section called the dwarf pyramidal is absurdly named, as the plants in bloom have broad, flat heads of flower. These furnish a large quantity of cutting material. One of the best whites is the *Mignonne* White, about 14 inches high, and carrying large heads of pure white, reflexed, smallish flowers, very useful for cutting and for wreaths. In the Imbrique forms mauve-blue is a delicate, yet lovely colour. So also are deep blue, vermillion, rose, carmine, white, &c. The Hedgehog comes near to the Needle form, but has stronger growth. The large-flowered Victorias and *Chrysanthemums* are generally very good, yet nearly all have open centres, a grave defect in flowers intended for show. The German raisers should set themselves to remedy that defect, and leave the selecting of new forms alone for a few seasons. A. D.

Water bouquets.—The production at flower shows of any form of novelty in domestic floriculture is so desirable, that I am anxious the method of making up water bouquets should be as widely known as possible. I saw some charming exhibits of this nature at the recent Basingstoke Show, where I believe it is alone the practice to offer prizes to ladies for them, as for *epergnes*, bouquets, &c. The introducer of these pretty novelties to that Hampshire town is Mrs. Loe, who has kindly furnished me with the needful instructions, from which it may be gathered that, having the proper utensils, water bouquets are easy to make and to preserve. A glass dish or stand having a flat or even base is requisite, so also is a glass shade or globe, which should when placed on the stand or dish fit closely round the bottom. The globe or shade should be from 8 inches to 9 inches in diameter or thereabouts for a moderate sized bouquet. The first thing is to fill a tub or bath with clear water, then place the stand or dish in the bottom, and see that the water is so high as to be above the top of the globe when placed on the stand. A small bunch of flowers and foliage in bouquet form—the fewer colours in the flowers the better—being prepared and the stems shortened, it is tied securely to a weight of some kind and stood in the centre of the stand or dish in the water, the flowers being completely immersed. The globe laid on its side is then placed in the water, and so gradually and carefully

brought over the bouquet that no air is enclosed. Then the whole may be lifted out of the water and wiped dry outside, and then the water bouquet is complete. The water magnifies the flowers and silvers the foliage, and a very beautiful and enduring table ornament is easily secured.—A. D.

STOVE AND GREENHOUSE.

THE HERBACEOUS CALCEOLARIA.

THIS is a very showy greenhouse plant, and one of the most useful for the decoration of the greenhouse and conservatory. We are now pricking out young plants in very small-sized pots—indeed, out of the seed-pans; others are larger, and ready for planting out singly in small pots. Much work has been done during the last fifty years in producing the compact-habited plants we now have, furnished with large, richly-coloured blossoms. Few of us can remember what the *Calceolaria* was like fifty years ago; but if we refer to the coloured plates of it published at that time and earlier, we find self flowers mostly, and all of them richly coloured. The plates in the earliest volumes of the *Floricultural Cabinet* are very rudely executed, but they give one a good idea of the varieties that had been introduced into garden cultivation by hybridising so early as the year 1833. C. Wheeleri, a rich blackish purple herbaceous variety, was figured in that year, and described as a double hybrid raised from the seed of a hybrid that was produced from *C. purpurea*, fertilised with *C. corymbosa*; this was again fertilised by *C. purpurea*.

This was the work of Mr. Wheeler, a nurseryman at Warminster. Mr. J. Menzies, the "meritorious and industrious gardener" to Mr. Christopher Rawson, Hope House, Halifax, was also a raiser at this time, and produced *C. Menziesiana*, a variety "infinitely superior to every other kind in the fulgent richness of its colour." Another of Mr. Menzies' flowers figured in the *Floricultural Cabinet* was *C. purpurea* var. *Harrisonæ*; the flowers were a deep purple-black colour. Other selfs of various colours were figured. In 1835 fifteen varieties were figured, two of them slightly spotted, all the others selfs of various colours. These were all raised by Mr. Joseph Plant, florist, of Cheadle, Staffordshire, and, as far as I can find out, we owe much to this florist for the introduction of the spotted forms. The spotting appeared first in the form of a small patch immediately below the mouth of the flower. Twelve years later spotted flowers were abundantly produced, and a coloured plate of seven varieties is given in the first volume of the *Florist*. Mr. W. H. Holmes, landscape gardener, was the raiser of these. This was in the year 1848, and the spots had spread over the entire surface of the corolla. And here we find that, as usual in the cultivation of garden flowers of this character, a certain fashion or fancy for new colours set in, and the editor of the *Florist* remarks: "What a pity to let fashion rule their colouring! Where are our handsome selfs and blotches? Why discard them for the spotted varieties?" I can well remember growing these spotted forms to name about thirty years ago. The flowers were generally of a clear yellow colour, of excellent form, but the plants had the serious fault of being of straggling habit and having tall stems. The exhibitors used to show only these spotted flowers, those that were heavily blotched and self-coloured being omitted. Now we have all colours—selfs, blotched, and spotted, the plants of good habit, neither too dwarf nor too tall. As

regards habit, the height of the flower-stem should bear a proper proportion to the habit of the plant. A very dwarf flower-stem gives the idea of stunted growth, just as a more than usually tall stem gives an idea of legginess. I noticed this more particularly in the beds of seedling Carnations this year. One or two varieties produced their flowers on stems not much more than 6 inches high, while others ran up more than a yard, but of the two I preferred the very tall stems, as the flowers upon these came up nearer the eye and had a most pleasing effect, as the laterally placed ones hung over gracefully. The same remark applies to the *Calceolaria*.

Having obtained our plants either from seeds, division, or by cuttings, the object of the cultivator is to grow them well, and I find different persons have varying ideas of the point at which excellence is attained; some are much more easily satisfied than others. I sowed the seeds in July, and the plants are now large enough to be potted off singly in small pots. The seed-pan was placed in a frame facing north, and the plants have been placed there again; they are in that position to avoid the direct rays of the sun, and yet to have as much light as they require. They have been attacked by slugs, but I strewed the ground where they were with lime and watched at night to see if any could be detected feeding. Green-fly is sure to attack them, but for that frequent fumigations with tobacco smoke is best. As the plants progress in growth, they are repotted into larger pots, and if they have a chance they will fill pots 8 inches and 9 inches diameter inside measure; but the right thing is to see that the plants do not become root-bound in the earlier stages of their growth. What they do require is sufficient soil for the roots; this should be formed of rich turfy loam, a good sprinkling of decayed manure, leaf-mould, and sand. I have also found that crushed bones added to the soil intended for the last shift is very beneficial.

The *Calceolaria* is a comparatively hardy plant, and does not suffer if exposed to a few degrees of frost by accident, but I would rather that frost was entirely excluded, as I fancy the leaves have a tendency to damp off more freely when they have been exposed to frosts. The plants will succeed well in frames up to the end of October, as if frosts should set in, it is easy to throw a few mats over the glass. Any time during October they may be taken in to a heated house or pit, and the more artificial heat required during winter the more likely is green-fly to attack them; consequently the fumigating apparatus must be more in use. Green-fly is the persistent enemy of the *Calceolaria*, and it is greater wisdom to fumigate to keep this pest off altogether than it is to attempt its destruction when it has once obtained a foot-hold.

J. DOUGLAS.

SHORT NOTES.—STOVE AND GREENHOUSE.

Eynford Gem Passion Flower is undoubtedly one of the most perpetual flowering greenhouse climbers we have. I have seen it in several gardens of late, but in no case so well as at Messrs. Cannell's nursery, Swanley, where it has been growing on the roof of a greenhouse for some years, and has scarcely ceased flowering. It produces its fine rosy-red flowers nearly all the year round.—C. L.

Maurandya Barclayana is a lovely indoor climber. I recently saw it thriving luxuriantly in an ordinary greenhouse, the shoots hanging from the roof in an elegant manner, and covered with rosy flowers. As a basket plant, too, it is exceedingly pretty and might be used with advantage for that purpose. One of the best instances of this I have

seen was in a cottage window last year. The cottager raises plants from seed every spring in a small greenhouse, and when large enough transfers them to the basket, where with care and attention they thrive admirably and produce their tubular blooms in profusion during the late summer and autumn months.—C. C.

WORK IN PLANT HOUSES.

HARD-WOODED GREENHOUSE PLANTS.—After the middle of September it is not safe to trust anything of a tender nature out in the northern counties, for though the night temperature may not fall so low as to permanently injure the plants, a few degrees below the freezing point often gives the foliage an unsightly appearance from which it does not recover. It is at this season that the advantage of a little shelter, in the shape of a light framework with a movable blind that can be run down over the plants at night, is apparent. With means of this kind at hand the plants may be trusted out a fortnight later than where they are fully exposed. The bright sunny days that we often have in the present month accompanied by cool nights are beneficial provided there is the means of keeping the plants from injury, as they help to stop any further inclination to growth, which a cool, moist summer such as that now coming to a close always tends to encourage. Such things as *Boronias*, *Hedaras*, *Leschenaultia formosa* and *L. intermedia*, *Epacris*, and *Adenandras* should be taken in first. They ought to have a place in the greenhouse where they will be near the glass and be under the influence of all the available light through the autumn and winter. Before they are housed each plant should be carefully looked over to see that it is free from aphids, thrips, or red spider, for though these insects will not increase much during the winter, if present even in limited numbers they will do harm and give much trouble in the spring, when a higher temperature again sets them moving. *Acacias*, *Genistas*, *Neriums*, *Heaths* and others of the less tender sorts may remain out eight or ten days later than the first-named kinds. Previous to housing the plants the glass and woodwork should be well washed. In the neighbourhood of towns where there is an accumulation of soot this should be done three or four times a year, as when the glass is coated with dirt it is impossible for the plants to get the amount of light they require. Vigorous hard-wooded subjects will still continue to make fresh roots when little or no top growth is going on; on this account, though less water will be required than in the height of the growing season, the soil must not be allowed to get so dry as to stop root action.

AZALEAS.—Azaleas are less impatient of a little cold than New Holland and Cape plants, but where the practice of standing them out of doors is followed, it is well to have the houses in which they are to be wintered ready to receive them. Previous to taking them in all the stock should be looked over, and if any trace of thrips is discovered the plants ought to be syringed with or dipped in tobacco water to which a little Gishurst has been added. If the plants have been troubled with these insects during the summer it is better to dress them with the liquid named, as it will kill any eggs that exist which, if allowed to remain, will give trouble in spring.

CAMELLIAS.—All the stock should now be gone over with brush and sponge to clear off scale and cleanse the leaves from dirt. Where the white species of this insect exists, the wood should be cleaned with a hard brush, using a softer one for the leaves, as they will show the effects if a hard one is employed. White scale is one of the worst of all insects to deal with, as there are few plants that will bear so strong an application of any insecticide as is necessary to kill the scale, even when the season's growth is matured, but an effort should be made at this time to reduce the pest as far as possible. Since the practice of cutting a piece of the shoot along with the flowers of *Camellias* has, to a great extent, been discontinued, the increased vigour which is thrown into the plants by the

shoots being left entire causes the bloom-buds to set in such quantities, that more thinning becomes necessary. Two or at most three buds are enough to leave to each shoot. It is better not to defer the thinning longer than the present time.

CAMELLIAS PLANTED OUT.—When the plants are turned out in beds it often happens that the increased strength thus imparted to them causes them to make a second growth during the autumn in place of setting their flower-buds. Where there appears to be a tendency to do this it is best to withhold water so as to check this late growth. When the roots have a free run they will bear keeping much drier without danger of the buds dropping in the way that occurs with plants that have their roots confined in pots or tubs.

ERICAS.—One of the causes of *Heaths* dying off suddenly is through their being potted at the wrong season. Young plants that require a shift are generally moved early in spring before the hot dry weather, which is so trying to fine-rooted hard-wooded plants, comes on. But with plants that are large enough to flower in a way that makes their blooming of consequence there is generally a reluctance to pot them until the flowering is over. This often drives the work into summer. When the potting is deferred in this manner it is much safer to leave it until the present month, as with the return of cooler weather and an increased amount of moisture in the atmosphere, the plants stand a better chance of getting safely over the operation, and there is yet plenty of time for the roots to get well hold of the soil before the dormant season arrives. This especially applies to large specimens, with which it is not advisable to run any risks. It is well to look over the stock and take account of any plants that have not enough root-room to see them over the time of flowering next spring and summer. In the case of such I should recommend their being repotted now, along with those that stand in want of immediate potting. There should be no delay in getting the work done, as the sooner it is completed the more time there is for them to get established in the new material. See that all plants that are to be dealt with have the soil moist enough a day or two before shifting them, so that they may not require water to be given for as long a time as possible after the potting is completed. It is necessary to impress this on those who may not have had much experience with *Heaths* and other delicate-rooted slow-growing subjects, for however careful the operator may be it is not possible to repot plants without some breakage of the roots, and when water is given before the broken fibres have time to heal there is danger of its rotting them. For a like reason it is necessary to see that the soil in which the plants are potted is in right condition for moisture. When any plant is potted in soil that is too wet the material forms a close hard mass, which the roots never take kindly to. In potting *Heaths* do not disturb the roots more than is unavoidable in removing the drainage crocks; make the new soil as solid as the old ball—without this the water that is subsequently given will pass off through the new material, leaving the ball too dry for the roots to keep healthy; use none but good brown fibrous peat that is not too hard in texture. See that all the stock is quite free from mildew. It is much more easy to get rid of this parasite when it first makes its appearance on a plant than when it has had time to get established. Sulphur, either applied in the form of powder dusted on the affected parts, or water that is impregnated with some or other of the preparations of sulphur, are the only effectual remedies. When *Heaths* have to be wintered in a house with other plants, either hard or soft-wooded, they should be stood together at the coolest end; by giving most of the air that is required at the end occupied by the *Heaths* they will be benefited, and the other occupants which require a little more warmth will also fare better.

SWAINSONIAS.—The distinct character of the flowers of the *Swainsonia* is such as to always make them attractive. The plants are easily grown, bloom freely, and are not liable to get out of health. In most cases they will now have done

flowering. Immediately the bloom is over the branches should be shortened. If this is not done annually, the plants, be they young or old, get full of long, straggling growth, which in a short time becomes denuded of leaves and gives the specimens an unsightly appearance. About two-thirds of the growth that has been made since this time last year may be removed. By shortening the branches at this season rather than leaving it until spring, the growth which the plants make in the interim is so much to the good; whereas, if the cutting in is deferred there is a waste of strength and loss of time. Swainsonias are somewhat subject to the attacks of red spider, and it is well to syringe them freely with Gishurst water after cutting in, so that if there are any of the insects present they may be got rid of. If the work is properly done by getting the whole surface of the leaves thoroughly wet with the solution, the insects will not give further trouble this year. The treatment recommended is necessary for the plants, whether they are grown in pots specimen fashion, or they are planted out and trained to pillars or rafters.

PLUMBAGO CAPENSIS.—The blue and also the white-flowered form of this plant are attractive. Blooming as they do late in summer when conservatories and greenhouses have not usually much variety in them, they afford an acceptable addition to even a select collection. They are seen to the best advantage when their roots are turned out in a border and their branches are trained loosely to a pillar or rafter, as so managed the specimens attain a size which they are not capable of under pot culture. Yet, taking into account the convenience of being able to move the plants about wherever they are wanted, it is obvious that pot culture has the greatest advantage. The time of flowering depends to some extent on the temperature that is kept up during the spring in the house where they are grown, but in most cases the blooming will now be over. Plumbagos require treating after flowering similarly to the Swainsonias in respect to cutting back the shoots, as from their naturally straggling growth they soon get bare and leggy if the branches are allowed to go on unshortened, if only for one year. When planted out, the knife may be used more or less freely, according to the size the plants have attained and the space that has to be filled, for it is well not to lose sight of the fact that cutting the tops reduces the root power; consequently where the tops are required to occupy much room, and the plants are young and have not had time to fill the space they are wanted to, the knife should be used less freely. With pot specimens that have reached the required size, the shoots may be shortened to the extent of removing three-fourths of the growth that has been made since they were last cut back. Before cutting in these and other plants, where a considerable portion of the tops has to be removed, water should be withheld, so as to let the soil get somewhat drier than usual, and little or none should be given until the heads have broken into growth. By taking this precaution there will be no danger of the roots suffering; whereas if the soil is wet at the time the tops are removed there might be.

T. B.

Balsams in the open ground.—There is nothing new in sowing Balsam seed in the open, and, when the plants have grown large enough, taking them up and putting them into pots. The practice might, however, be extended with advantage by those who require a greenhouse furnished with bright flowers in the months of August and September without much trouble. Some plants that I have now before me show the value of this way of growing Balsams. They are in 6-inch pots and about 15 inches high, and so well furnished with growth that they are quite of a pyramidal form. Every part of them is well studded with flowers. These plants I obtained by scattering a few seeds along a drill in the open in the early part of May. Where the seedlings came up too thickly they were thinned out, and in the very dry weather in June they had a soaking of water occasionally. About a week ago I took them up with a ball of earth about their roots and put

them into pots, after which they were well watered and stood on the floor of a shed for two or three days. They are now very attractive and useful for many purposes.—J. C. C.

CHRYSANTHEMUMS.

E. MOLYNEUX.

TOP DRESSING THE PLANTS.

WITH chrysanthemums, as with other subjects, surface roots form an important part in the success or failure of the plants under cultivation. It is generally considered that plants which have plenty of surface roots are in much better condition to receive stimulants than are those which have few roots, and to which stimulants must be given cautiously, or considerable harm will accrue by a partial loss of the surface roots, which are usually regarded as being the most useful. Much benefit is derived by plants, for whatever purpose they are cultivated, by top-dressing them with any kind of material calculated to encourage the formation and increase of the roots on the surface of the soil. The aim should be to encourage as many of these roots as possible. Much of the success in procuring broad-petalled flowers both of the incurved and Japanese sections depends upon the amount of surface roots the plants possess. Plenty of surface roots helps to bring out the colours of each variety more clearly, while the petals are more solid and much more able to stand a longer time in a fresh condition. I have seen plants which had had all their surface roots killed for quite an inch below the top of the soil by the application of dry stimulants, which had burnt the roots they came into direct contact with. In this case the bottom florets of both incurved and Japanese varieties alike turned soft and flabby, losing their colour long before the centre of the blooms had fairly commenced to unfold their florets. As this happened some years since, it has always served as a lesson to encourage surface roots. The best method of encouraging surface roots is to apply a top-dressing to the plants directly after the buds are formed, which will be from the commencement of August and on through the month until the middle of September, varying according to the time each variety sets its flower-buds. Various kinds of materials are recommended and find favour with growers. The kind of soil used, the class of water obtainable, and the cost of the manure have all to be taken into consideration. Dissolved bones, bone meal, fresh cow manure, fresh horse manure, also that taken from spent Mushroom beds, and the many kinds of artificial manures which are advertised, are all good, especially the last, if used according to the instructions which accompany them. Turfy loam which has previously been well soaked in liquid manure, also leaf-soil, are good.

A mixture to suit all classes of soil and localities may be prepared as follows: Partly-decayed fibry loam, which has previously had the fine soil taken out by passing it through a fine sieve, retaining only the rougher parts, which are so reduced as to leave little else but fibrous matter. The roots show a tendency to run among a mixture of this sort more readily than when the soil lies closely together through being so fine. To the loam add the same quantity of partly-decayed horse manure, passing this through a coarse sieve, which prepares it better for mixing with the loam. Soak the two named materials in liquid manure, and when partly dry add one quarter of a part of bone meal, crushed bones, dissolved bones, or any artificial manure, mixing all thoroughly together. If sufficient room has not

been left in the pot at potting time to allow of this top-dressing without interfering with the water space, a narrow wall, say 1 inch above the rim of the pot, must be built up with the roughest parts of the compost. This will leave sufficient space inside for the plant to have as much water as is required at any one time. On the surface of the soil lay a covering of the compost three-quarters of an inch thick, pressing it down firmly, by which means the roots will lay hold of the new material more quickly than when it is laid on loosely. For a time it will be found that the soil in the pots does not dry so quickly after top-dressing as it does without this mulching, so to speak. Greater care is necessary in supplying the plants with water for a time, owing to their inability to absorb so much as hitherto. In order to prevent the soil being washed off the surface when the water is poured on the plants, a piece of flat roofing tile or slate about 2 inches square should be laid on the surface. In many places black-birds and thrushes are very troublesome, especially in dry weather, as they scratch off the new soil directly it is applied in quest of insect life. A good preventive is pieces of Thorn branches laid over the soil in the pots. Some growers top-dress the plants with manure from the cow-yard, mixed with a small portion of turfy loam, plastering it around the edges of the pots in a wet state to provide the extra space for water which is required when the pots are filled too high at the final shift of the plants into their flowering pots. In localities where the soil used in potting is of a light sandy character, a top-dressing of this material will be beneficial, but where the soil is inclined to be heavy, it is certain to be retentive, and, consequently, colder than the compost just described.

NOTES OF THE WEEK.

Belladonna Lily is now in fine condition in a border on the south side of the Orchid house at Kew. It is a most beautiful bulbous plant, as easy to cultivate as a Potato, and in September pushes up its long naked flower-stalks with thin clusters of large trumpet-shaped, rose and white flowers. And yet comparatively few gardens possess this plant.

The Colchicum appear to be rather earlier than usual. The season opened with *C. autumnale*, after which came *byzantinum variegatum*, *speciosum*, and *Troodi*. We have been much struck with *byzantinum*, for although the flowers are a little paler than those of the common Meadow Saffron, they are larger and borne more freely. *Speciosum* has proved a valuable plant, some of the varieties being excellent.

Solanum Wendlandi is a strong growing climber with a fleshy stem covered with soft spines, lobed, bright-green leaves, and enormous terminal bunches of blue flowers. There is a plant of it in flower in the Water Lily house at Kew, and the bunch, which is at least a foot across, is made up of a great number of flowers, each as large as a florin. For large stoves this plant is of special value. It loses all its leaves in winter.

The Meadow Beauty (*Rhexia virginica*).—This is a lovely plant for rockeries during the late autumn months. It is very effective just now, as it is flowering quite as freely and doing as well in a loamy soil as it does in one of peat. The leaves are oval, pointed, and hairy, the large, vivid rosy flowers making a very attractive display. *R. Mariana* is not so common now as it used to be; the flowers are not borne so freely and their colour is less vivid. *R. virginica* is a native of Massachusetts, Arkansas, &c.

Tigridia Pringlei.—The new *Tigridia Pringlei*, flowering just now at Kew, is certainly one of the most brilliantly coloured members of this genus, and is sure to become a favourite amongst bulb growers on that account, as well as for its neat dwarf habit and abundance of flower. It is a native of the mountains of Chihuahua, Northern Mexico, where it was recently discovered by Mr. C. G. Pringle, further north, if we remember rightly, than any of the *Tigridias* have yet

been found, and, in consequence, may prove hardy under favourable conditions in the open air. To the casual observer it would appear little different from the old *Pavonia*, were it not for its brilliant, scarlet-red flowers; but in reality it differs widely in its broadly cordate or reniform, smaller petals. The sepals are about 3 inches long, with reflexed scarlet-red blade, the base blotched or spotted with crimson, with a deeper coloured brownish margin.—K.

Clematis Davidiana has been very beautiful for some weeks past, and promises to remain so throughout the autumn. It is one of the herbaceous kinds, and although introduced from China in 1868 it is rarely seen in gardens. It grows about a yard high, and the shoots are clothed with large leaves, whilst in their axils and all round the stem cluster the thick whorls of blossom. The flowers in shape and size resemble those of a *Hyacinth*, and in colour they are a light or lavender-blue. They last for a long time and look charming as they nestle beneath the ample foliage. Such a long-lasting and pretty *Clematis* as this should be more frequently seen, for if planted in a warm spot at the foot of a low wall it will give no trouble.—A. H.

Coneflowers.—The *Rudbeckias* are the handsomest class of autumn-flowering plants we have. Amongst all the innumerable yellow-flowered Composites we get nothing equal to *Rudbeckia speciosa*, or *Newmanii*, as it is usually called. The flowers are of a rich orange-yellow colour with a black disc, and to obtain the best effect the plants should be in groups or masses. *R. purpurea*, also called *Echinacea purpurea*, is a handsome plant either for borders or rockeries; indeed, it is the most attractive plant in the rockery at the present moment; the flowers are of a fine purplish pink, the disc of a dark brown colour surmounted with small golden anthers. *R. hirta* is also fine, but not a good perennial, such at least is my experience. *R. maxima* is a noble plant when seen in condition, but it seems difficult to manage well.—K.

Double perennial Sunflowers.—On reading T. Smith's note in THE GARDEN, Sept. 7, p. 233, respecting these, I conclude there is one variety that he does not possess. I have lately had an opportunity of seeing three distinct forms—*multiflorus plenus*, which has the petals reflexed much in the way of a reflexed *Chrysanthemum*; *Soleil d'Or*, which has the petals standing more upright and partially quilled; and *anemoniflorus*, which has the disc florets shorter than the ray. Now these three are so distinct as not to require the practised eye of a florist to distinguish them. All are good, and their hardiness and usefulness for the herbaceous border and cut flowers should secure for them ample recognition.—W. BESWICK, *Beshorough Court, Cork*.

Anomatheca grandiflora.—Those who admire the old *A. cruenta* will be delighted with this new addition to the genus. Both species are now flowering side by side in the bulb collection at Kew, and the one may be called an enlarged copy of the other. *A. cruenta* is scarcely 6 inches high and its pretty bright coloured flowers are not more than half an inch across; but *A. grandiflora* is 2 feet high, and the scape stout and branched, whilst the flowers are fully 2 inches across, their colour a brilliant scarlet with a blotch of maroon on each of the three lower segments. Apparently this species is as hardy as the *Crocsmias* and *Montbretias*, for it has stood out of doors nearly two years at Kew, and that it is happy is proved by its having increased considerably during that time. As a brilliant coloured hardy bulbous plant for autumn effect, this *Anomatheca* is likely to prove very useful. It is quite as easy to manage as the *Montbretias*. It is a native of Delagoa Bay, and was introduced to Kew in 1883. The figure in the *Botanical Magazine*, t. 6924, is a poor representation of this plant as it is now known.

Autumn Crocuses.—The autumn Crocuses are delightful at the present time. The first to bloom with us this year is the charming cream-coloured and curiously tailed *C. vallicola*. It seems to be somewhat scarce, the reason of which we are unable to explain, as it produces an abundance of

small corms annually, and which when liberally treated soon come to the flowering stage. The flowers of this species are remarkable both in the length of the individual segments and also in the unusually long-tailed point; it is a very free-blooming kind, and stands the cold and damp as well as any of the others. *C. zonatus* is a gem. It is a native of the mountains of Cilicia, and has at last made its home amongst us. It is perfectly hardy, reproducing itself in the greatest abundance, and never failing in early September or often the latter end of August to give a good display of its innumerable bright lilac flowers; the veins are darker than the other parts, and at the base there is a zone of bright golden yellow. The blooms, as in most of the autumn kinds, are produced before the leaves, which do not usually appear until spring. *C. speciosus*, an old and well-tried kind, is also in full bloom now, rather earlier than is usual with this species. *C. speciosus* should be largely planted in rockeries and such like places, which would be considerably brightened during the dull days of autumn.—K.

Crinum brachynema.—This is one of the many beautiful *Crinums* which are scarcely known in horticulture, although they have been introduced and flowered at some time or other at Kew or elsewhere. We saw at Kew last week two spikes of flowers of *C. brachynema*, which had been brought by a well-known gardener to be named, and which were greatly admired by all who saw them. It is not easy to give anything like a correct idea of the beauty of these flowers; they were 3 inches across, spreading like those of a *Zephyranthes*, of good substance, the segments three-quarters of an inch broad, the stamens on very short filaments, and clustered in the top of the narrow tube. There were eleven of these flowers clustered on the top of a scape a foot long, and they were pure white and as fragrant as *Cowslips*. We were told that the plant grows and flowers freely in an ordinary stove, and that the flowers are developed just before the leaves, exactly as in *Zephyranthes*. As a free-flowering, beautiful stove plant this *Crinum* ought to come to the front. It is said to be very abundant in the Bombay Presidency.

Clematis Jackmani alba.—Seeing the correspondence in THE GARDEN about *C. Jackmani alba*, I beg to offer my experience, as I think the plant has been condemned rather hastily. Having procured a specimen about three years ago, I planted it against a wall with a south-west aspect, having first taken out the old soil and put in some good loam and rotten manure. The first year it did not grow as I expected, the second it made a moderate growth and flowered only in the autumn. This year it started early and grew well, flowering at the end of May, the flowers being double and of a grey colour instead of white. After flowering it commenced growing with renewed vigour, and made growths about 10 feet long. It showed buds which began to expand at the beginning of August. The flowers are not a pure white when they are opening, but become so after they get well open. I enclose two flowers for inspection. The plant has been much admired by my employers and others, and is still in great beauty. I hope those who have this beautiful plant will not discard it without giving it further trial.—J. ELLIOTT, *Old Windsor, Berks*.

* * The flowers sent were the best we have seen of this *Clematis*. They were not pure white, having a distinct greyish tinge, but pretty and distinct.—ED.

Gustavia gracillima.—A plant of this interesting stove shrub is now in flower at Kew, where, we learn, it flowered in 1883, and not again until now. It was introduced by Mr. Bull, of Chelsea, about fifteen years ago. It has an erect, unbranched, woody stem, clothed with numerous narrow arching leaves, and is as elegant in habit as some of the *Aralias*. The flowers are axillary, on very short stalks, and not unlike a single *Camellia*, being formed of eight oval fleshy rose-coloured petals and a large disc-like cluster of stamens, which are yellow. They are developed only on the ripened wood of about two years' growth. Unfortunately, each flower lasts only about

a day. As is the case with many of the plants of the great *Myrtle* order, and especially those which have large flowers, this *Gustavia* is too shy a bloomer, and too fugacious when it does flower to deserve to rank with good flowering stove plants. There are several other *Gustavias* in cultivation, but they are none of them superior to *G. gracillima* as garden plants.

Trichinium Manglesi.—Of the many beautiful Everlasting Flowers which have been introduced from Australia few are superior to this. Grown in 3-inch pots in a cool greenhouse and treated liberally as regards richness of soil and water it makes strong heads of light, fluffy flowers, their colour being white and rose. On the plants these flower-heads last a long while, but when cut and dried they remain ornamental for several years. A batch of flowering plants may be seen in the succulent house at Kew.

Durantas are the glory of subtropical gardens, their effect being similar to that of the *Lilacs* here; but in English gardens no *Duranta* is a success. A rather dry atmosphere, with plenty of sunlight, appear to be essential to them. At Kew there are several kinds represented, and one of them is now in flower in the Palm house. It is called *D. inermis*, and is something like a loose *Privet* bush with clusters of pale lilac and white flowers. It merely serves to give an idea of what huge bushes with long arching branches of flowers as crowded and elegant as *Hawthorn* are like.

The white-flowered African Lily.—I enclose herewith a photograph of a plant of *Agapanthus umbellatus albus*, which is now in blossom here. It has nineteen heads of bloom, each having over forty individual flowers upon it, or about 800 on the plant. As I have hitherto found the white variety much more shy in blooming than the blue one, I cannot help thinking that this large number of flowers is unusual, but should be glad to hear the experience of others of your readers on this point. I see the blooms are all setting seed as fast as they wither. I find this variety more scarce than the blue, but it lasts in bloom a very long time, and is very pure in colour, and most effective in a mass. WILLIAM F. BADOCK, *Southmead Manor, Westbury-on-Trym, near Bristol*.

* * The photograph shows a fine plant of the white African Lily, one mass of flower.—ED.

Anhalonium prismaticum.—This is a Cactus with the appearance of a *Gasteria* or *Aloe*, a most extraordinary plant to look at, attractive on account of its ugliness. This applies only to the stem, the flowers being elegant and pretty. In shape the plant is like a whip-top; the leaves or mammillae are short, thick, and fleshy, and arranged in a rosette, which measures about 4 inches across. From a tuft of hairs in the centre of this rosette one or two flowers spring; these when fully expanded are as large as a crown-piece, the sepals being narrow and pure white; the yellow stamens are in a compact disc-like cluster, with the rayed stigma projecting a little beyond them. A plant of this very rare Cactus is in flower in the Kew collection. It is a native of Mexico, and is also known as *Mammillaria alceoides*.

Aristolochia ridicula is a plant which deserved a better name, the flowers being decidedly pretty as well as quaint in form. The plant is a quick-growing stove climber with kidney-shaped leaves 5 inches across, pale green, and covered with hairs. The flowers are axillary on the young parts of the shoots, and each one is about 4 inches long, inflated at the base, bent in the middle, as in the common hardy species, *A. Sipho*, or *Dutchman's Pipe*. The top of the tube has two spreading lobes, which give the limb an appearance not unlike the outline of an admiral's hat, except that the hole for the head is in the side instead of at the bottom. The colour of the lobes is purplish brown with veins of a paler colour, and they each bear a little cluster of club-shaped hairs near the end. The flower must be seen before its extraordinary form can be comprehended. *Aristolochias* have a decidedly bad odour, and *A. ridicula* is no exception. *A. brasiliensis*, its bad odour notwithstanding, is a really first-rate stove climber.

TREES AND SHRUBS.

THE CATALPAS, OR INDIAN BEAN TREES.

Those who know anything at all of hardy exotic trees do not need to be told that the Catalpa is one of the finest ornamental trees we have, but there must be many to whom even such an old tree as this is unknown, seeing how seldom one sees it planted especially in gardens of modern make. Those who know the American Catalpa will recognise in the accompanying beautiful engraving a very fine specimen of *C. bignonioides* in full flower. It is growing in the garden at Claydon Hall, Buckinghamshire, and as may be seen it has long since attained maturity, and exemplifies in a marked degree the wide-spreading umbrageous head which an old Catalpa always develops when growing in a

from a foot to 18 inches a year, so that in twenty years the tree has reached its full height, which in this country rarely exceeds 40 feet unless the tree is drawn up by others. When at full height the tree develops laterally, and continues to form the broad, rounded head shown in the illustration. Like other large-leaved trees, the Catalpa needs a deep free soil for rapid and luxuriant growth, and though it will sometimes thrive on poor soils and exposed dry spots, it is never seen to such perfection as in a moist, deep soil, such as the rich alluvial soil on the banks of rivers or lakes. This accounts for the existence of the magnificent Catalpas one sees in the valley of the Thames, where probably more old Catalpas can be found than in any other locality throughout these islands. Last August I went for a trip up the river, and I noticed that from Fulham to Henley there was a continuous fringe of flowering Catalpas

warmth the atmosphere of a town affords, which tends to ripen the young wood, rendering it less liable to be killed in winter. The fact that the finest Catalpas are to be found about London and south of it shows that this tree is not hardy in every part of these islands, though I have seen some good trees in the midlands, and I believe there are some in Scotland in west coast gardens. Like a good many other tender trees, however, the critical stage is when they are young and small, for old Catalpas are seldom injured by the hardest winters, though the same degree of cold will cut down young or half-grown trees. It is fortunate that the Catalpa is one of the last trees to come into leaf in spring, for if it were early, it would always be overtaken and damaged by late frosts, which indeed it is occasionally.

There are four distinct kinds of Catalpa hardy enough for open-air culture; two are natives of North America, and two of China and Japan. These may rank as four species, though possibly there are but two species, the others being geographical forms. But we are not concerned with the botany of the subject. All four are distinct from our standpoint. The common kind is the North American *C. bignonioides*, also called *C. syriacæfolia* or Lilac leaved, which was introduced to English gardens in 1726, and probably the oldest trees of it that exist here are those about London, notably that in the Fulham Palace Garden, it being one of the choicest favourites of the tree bishop, Bishop Compton, so that it is one of the earliest exotic trees introduced. It is a native of the South-Eastern States of America, occurring on the banks of rivers in Florida, the Carolinas, and Georgia, where Michaux states that it reaches 50 feet high and far exceeding that measurement in diameter of head. In the adjoining States further west, and particularly in the Mississippi valley, there occurs another Catalpa, possessing well-marked differences from *C. bignonioides*, and this by some botanists is regarded as a distinct species under the name of *C. speciosa*. In growth it differs from the other in being more erect and taller, with leaves more pointed, with flowers larger and almost quite white; whereas in *C. bignonioides* they are tinged with purple and spotted with yellow. The seed-pods, moreover, are longer, reaching from 18 inches to 20 inches long, but the point that makes *C. speciosa* most valuable to us is its more hardy constitution, more rapid growth, and the fact that it flowers a fortnight earlier. This new Catalpa was introduced ten years ago, and already we have some fine specimens of it, which may be recognised at a glance from the common kind by the characters just noted. American arborists are loud in their praises of it, as it is more suitable for their cold northern States than the tender southern kind, and no doubt the old kind will be superseded by the new both here and in America, for our leading nurserymen are working up large stocks of it. Quite recently a description has appeared in *Garden and Forest* of a new hybrid Catalpa raised by Mr. J. C. Teas, who thinks that the parents of the cross are *C. speciosa* and the Japanese *C. Kämpferi*. Prof. Sargent describes it as being superior to any other known Catalpa, more vigorous, more free blooming, and altogether finer in flower, leaf and growth to others. We shall await the introduction of this novelty among us with interest.

The other two Catalpas are *C. Kämpferi*, a native of Japan, and *C. Bungei*, from China. Both are modern introductions, and as far as we are able to judge from the largest trees in this country they are not likely to rival the Ameri-



Indian Bean Tree (*Catalpa bignonioides*) at Claydon Hall, Bucks. Engraved for THE GARDEN.

suitable soil and climate and in a sheltered spot so that its head is uninjured by high winds. There is, in fact, no finer object on an English garden lawn than an old Catalpa, as it is beautiful in leaf and highly attractive throughout harvest-time, when, as a rule, it is covered with a profusion of loose white flower clusters which in warm climates are succeeded by a crop of long seed-pods, which look like attenuated French Beans; hence the name Indian Bean Tree. Apart from its peculiar growth, its large foliage and showy flowers, the Catalpa is an important tree in garden landscapes on account of its colour, it being one of the lightest greens we have among large trees, and therefore a large Catalpa always stands out prominent amongst others both in colour and outline.

The rapid growth of this tree is a great point in its favour, for from the seedling stage up to the flowering period, which occurs under favourable circumstances at from twelve to eighteen years of age, it grows on the average

in the riverside gardens, and I observed that the finest specimens were those close to the water's edge—close enough for the roots to reach the water. There were some particularly fine specimens at Twickenham, which appeared at a distance like a cloud of white bloom. This fact sufficiently indicates the proper place to plant the Catalpa, and if there is a stream, ditch, lake, or pond in a garden, it should be planted near it, or, failing these, in the very lowest part where the soil is moist and rich. The Catalpa is peculiarly a tree for small gardens because it never grows very large; it is, in fact, one of the few medium-sized trees that can be planted on a small lawn, and as a town tree it has few equals, being, like the Plane and the Fig, especially adapted for withstanding the impure atmosphere of towns. The fine specimens one sees in London, the Temple Gardens, the squares about Bloomsbury, for instance, quite prove this, and no doubt the tree is benefited by the extra shelter and

can kinds. The Chinese species is described as reaching from 8 feet to 10 feet high only, while that from Japan has yellow and smaller flowers and also larger leaves, heart-shaped at the base and lobed. In short, these eastern Catalpas need not be considered in relation to hardy ornamental trees, seeing that we have the hardier western kinds. The only variety of *C. bignonioides* is Buist's variety with golden-tinted leaves, and commonly known as *aurea*. It is an indispensable shrub, for its gold tint is excellent and is not impaired by summer sun or bad weather. It is highly effective treated as a shrub that is periodically cut down like the *Ailanthus* or *Paulownia*, so that the new growth is large and vigorous. I saw a note lately of a purple-leaved form of *C. speciosa*.

W. GOLDRING.

NOBLE THORNS.

GROWING within 100 yards of a disused chalk pit on the Holwood property are numerous giant specimens of the Thorn, several of which have attained to almost fabulous dimensions, as will be shown by the following figures: No. 1. Height, 43 feet; girth of stem at 3 feet, 14 feet 6 inches; diameter of branch-spread, 63 feet. At a short distance from the ground the stem divides into six limbs, the girth of each at 1 yard from the fork being as follows: No. 1, 4 feet 2 inches; No. 2, 4 feet; No. 3, 5 feet 8 inches; No. 4, 2 feet 8 inches; No. 5, 4 feet 4 inches; No. 6, 3 feet 5 inches.

No. 2. Height, 42 feet; girth of stem at 3 feet, 8 feet 11 inches; diameter of branch-spread, 33 feet.

No. 3. Height, 45 feet; girth of stem at a yard up, 11 feet; diameter of branch-spread, 37 feet.

No. 4. Height, 43 feet; girth of stem at 3 feet, 11 feet 2 inches; diameter of branch-spread, 37 feet.

The first two specimens are growing within a short distance of the public path, where it joins the road at Holwood Farm, and the others near the chalk pit above mentioned. All are in excellent health, and annually become clothed with the greenest and freshest of foliage.

The chalk formation would thus seem to meet the wants of the Thorn in a marked manner, for there are certainly very few instances in which so many, so large, and so healthy specimens of the Thorn could be pointed out in so small a space of ground as there is around this neglected chalk pit. The trees must be of great age, although the fresh unbroken stems and branches almost speak otherwise, and are no doubt of the same age as the gnarled and far-spreading Oaks and Beeches near which they grow.

Not often has it been noted in THE GARDEN how different in shape of foliage and general contour are different Thorns growing under the same conditions exactly, as regards soil and situation, and in close contiguity to each other, but that such is markedly the case a study of many of the finest specimens in Kent and Carnarvonshire has but too clearly pointed out. Some specimens are massy in foliage, somewhat after the *Sycamore*, while not a few with deeply-cut glossy leaves may be picked out. I have often thought that our race of Thorns could be much improved by careful selection of the better and more ornamental kinds and increasing these, for that some kinds are vastly preferable both in habit and foliage will be acknowledged by anyone who sets himself to carefully study the matter.

What, it may be asked, imparts more of a rich, ancient appearance to a place than a few old and gnarled Thorns, to be seen growing here and there about the grounds? At Holwood we have many such, remains, no doubt, of former fences and roadsides, and all, or nearly all, in good health. Such Thorns are well worthy of consideration and care, and if a fence or prop can support or guard them and so preserve relics of the past from destruction, by all means let such be done.

A. D. W.

Cedar unhealthy.—"Buntingford" asks in THE GARDEN (August 31, p. 190) if anything can be

done to restore to health a Cedar, half a century old, showing signs of decay. Some years ago a *Deodar* in my garden of nearly the same age showed similar signs of decay. A plentiful supply of water, however, for two or three summers has quite restored it to its former vigour. "Buntingford" should try this simple remedy and in due time report the result for the benefit of others.—P. NEILL FRASER, *Murrayfield, Midlothian.*

TREE PLANTING ON CHALK SOIL.

IN reply to "Medicus" as to the best trees for chalk soil, it is not difficult to make out even a long list of trees and shrubs that will thrive well on chalk soil, though the site be as exposed to strong winds as the Surrey Downs. "Medicus" does not say what depth of good soil there is on the chalk, but presuming it is not more than a foot or 18 inches, a good plantation may be reared upon it if the soil is properly prepared at the outset. Every yard of the proposed plantation must be thoroughly trenched to a depth of from 2½ feet or even 3 feet, and the trenching should be so worked that the present top spit is sandwiched between two layers of chalk, the reason of this being that the tree roots when planted will rest on this good top spit and so derive nourishment from it at once; whereas it does not matter what the finished top layer for a plantation is, except that in the case of chalk it will look glaring and dry, but a slight sprinkle of dark soil will remedy this. If the present surface is turf so much the better for the trees, for it should not be pared off previous to trenching, but should be turned, Grass downwards, at the bottom of the layer of good soil. This trenching should be done during the present month, so that in the latter half of October or November the ground will be sunk to almost its normal condition and will be ready for the trees.

Presuming that "Medicus" requires trees of ornamental aspect as well as affording shelter for buildings, I will note a few of the best kinds to plant, every one being thoroughly suitable for a chalky soil, and most of them of rapid growth. Among large growing evergreen Conifers there is none finer for forming a quick screen than the Black Austrian Pine (*P. austriaca*), and plants as high as 6 feet or 8 feet may be safely planted if obtained from a good nursery where transplanting is carried out well. Other good Conifers are the Monterey Cypress (*Cupressus macrocarpa*), which would thrive well on the Downs, *Thuja Lobbi*, called also *T. gigantea*, *Atlas Cedar* (*Cedrus atlantica*), *Lebanon Cedar*, *Picea Pinsapo*, *Abies cephalonica*, *Lawson's Cypress*, common *Juniper*, and common *Yew*. Another good Evergreen is the *Evergreen Oak*, of which there are several forms, including the *Lucombe* and *Fulham Hybrid Oaks*.

Of large deciduous trees there are the *White Poplar* (*Populus alba*), the *Canadian* and *Black Italian Poplars*, the *Sycamore*, with the purple and variegated kinds, *American Silver Maple* (*Acer dasycarpum*), *Colchic Maple* (*Acer colchicum rubrum*), *Crimean Lime* (*Tilia petiolaris*)—thrives particularly well on the chalk downs, and is very beautiful in growth and leaf—the common and *Purple Beech*, *Cut-leaved* or *Fern-leaved Beech*, the *Aspen*, and *White Beam Tree* (*Pyrus Aria*). This is a long list to choose from if the plantation is small, in which case it is best to confine the selection to a few kinds. Small undergrowth may consist of *Evergreen Barberries*, such as *B. Darwini*, *Aquifolium*, and *stenophylla*, *Box* (of which there are numerous varieties), *Laurustinus*, *Bay*, *Phillyreas*, *St. John's Wort*; and of deciduous shrubs, any of the *Spiræas*, *Leycesteria*, *Cydonia japonica*, *Brooms*, particularly *Spartium junceum*, *Deutzias*, *Weigelas*, and *Tamarisks*.

During the first winter it would be advisable to make some sort of temporary shelter on the wind-side of the plantation, and this can be made by hurdles or iron fencing, with *Furze* or other evergreen branches interwoven between the bars, and if appearances are not studied, this screen would be all the better if allowed to shelter the plantation for a year. Of course, the trees must be protected from

their enemies—rabbits, hares, and cattle. If rabbits abound, it is best to fix a wire rabbit-fence to the stronger fence used as a cattle-guard. Another small, but important matter is the staking of the trees firmly in such a windy spot, and after frosts the ground should be well rammed around the stakes and stems. With these preparations and precautions well carried out, there is no reason why "Medicus" should not see a flourishing plantation on the Downs in a very few seasons. It is best not to buy the trees too big, but it is indispensable that they be well rooted, that is, with large masses of fibrous roots.

W. GOLDRING.

THE EAGLE'S-CLAW MAPLE.

(*ACER PLATANOIDES LACINIATUM*.)

HARDLY any trees require isolation so that their perfect form and foliage may be fully revealed so much as the Maples, and the subject of this note is no exception to the rule. It will not do to plant the Maples in a mass, for then fully half of their beauty is lost, unless they be so arranged that each specimen stands independent of its neighbour.

The Eagle's-claw Maple is one of the most distinct and handsome of American trees, and only a few goodly sized specimens of it are to be found in various parts of Great Britain. To be seen to full perfection this Maple must stand alone, and all the better if on the green-sward and backed up by differently tinted foliage from that of its own. The peculiarly pleasing and distinct characteristics of the tree are then best set forth—its soft green shade, fine proportions, and claw-like foliage. From the shape assumed by the leaves the name of Eagle's-claw has been applied, they being plaited curiously, curled, and compressed until the fancied shape of a claw has been brought about. At a few yards from the tree the leaves certainly resemble claws, and the effect is interesting.

For planting by itself on the lawn or as a specimen park tree this Maple is of particular value, for apart from its ornamental qualities it is so hardy, so accommodating, and so easy of culture, that it is a general favourite with those who possess it either in large or small quantity.

Soil of the poorest quality suits this pretty tree; indeed, some of the largest and most flourishing trees I know of are planted among refuse matter, vegetable and mineral. Neither can it be said to be a particular tree so far as wet or drought is concerned, for it grows with unabated vigour where the roots must frequently, particularly in warm and dry summers, receive but a small quantity of moisture. Perhaps in such a situation the annual growth may not be so long and strong as when the tree is placed under more advantageous surroundings, but for all that the foliage is quite as ornamental, if not indeed, more so; and who will deny that the foliage of the common field Maple (*A. campestre*) is not improved and refined when the tree is found growing in some out-of-the-way field-side or hedge.

Propagation of this handsome Maple is not an easy matter, for either layering or grafting must be resorted to, that is, if the peculiarities of the tree are to be retained. Amongst the several forms of the Norway Maple there are none that can surpass the Eagle's-claw as a sturdy, hardy, ornamental tree. It stands hard cutting winds and burning suns with impunity, is liable to no disease that I know of, and is as easily established and grows as freely as a *Goat Willow* or *Silver Birch*.

A. D. W.

The Cut-leaved Alder.—I am glad to see the *Cut-leaved Alder* recommended in your paper, August 31 (p. 203). I have a splendid specimen

in the garden here close to water. The circumference of its trunk last January at 4 feet from the ground was 9 feet 2 inches. It must be considerably more than 40 feet high, and the spread of the branches is very great. "J. B. W." does not allude to one of its beauties, viz., the rich ruddy tint of the catkins at the end of the winter and beginning of spring.—WM. WICKHAM, *Binsted Wyck, Alton, Hants.*

KITCHEN GARDEN.

KITCHEN GARDEN NOTES.

CABBAGES.

THE earliest sown Cabbages ought now in most gardens to be large enough to put out, and a considerable number are already planted and established in the garden under my charge. In some instances this early planting might end badly, especially if a mild autumn should be followed by a severe winter, and in others, bolting is also liable if the plants are raised too early. The peculiarities of each garden should be discovered as quickly as possible by those who have charge of them, and Cabbages among other things be treated accordingly. A rich, yet firm root-run best suits this very serviceable crop, this causing a compact, yet sufficiently quick growth and the production of neat succulent hearts. Supposing a good breadth of ground is just cleared of Onions, this will invariably be found an excellent position for spring Cabbages, and should be utilised accordingly. The Tripoli or autumn-sown Onions being cleared off first, can be closely succeeded by a crop of Coleworts put out 1 foot apart each way, and these will heart in early or be available as greens any time during the winter. Nothing in the shape of manuring ought to be necessary or any digging attempted, but after the weeds and other rubbish are cleared away, it is advisable to lightly stir in a dressing of lime with Dutch hoes; this, in addition to destroying many slugs, will also sweeten the ground and otherwise benefit the Cabbages. If the plants have been previously pricked out they must be transplanted with a trowel, but if they are drawn from a well-moistened seed bed the dibber is the handiest and best for replanting. The stronger growing, including the Enfield Market type, Heartwell Marrow, Daniels' Defiance, Stuart and Mein's No. 1, and Veitch's Earliest of All, must not be given too much room, or they will attain greater dimensions than needed, and I consider 15 inches apart ample for all such. Ellam's Dwarf Early, Wheeler's Imperial, Reading All Heart, Veitch's Matchless, Early Paris Market, and Early Etampes are of neat, compact growth, and those grown are put out 12 inches apart in rows 15 inches asunder.

ENDIVE.

In many gardens it is hardly possible to grow too much Endive, this being especially the case where it is frequently cooked and served as a vegetable. Unlike Lettuce, it can, when fully grown, be kept for several weeks or months in various makeshift positions, such as the borders of Peach houses and vineries, rough frames, pits and sheds, and properly blanched it is invaluable for winter salads. As fast, therefore, as Cauliflowers, Beans, and other exhausted crops are cleared off the ground, Endive should take its place, and all the spaces between newly-planted Strawberries, Raspberries, and other fruit trees may also be similarly cropped with advantage. Endive, however, will not thrive on very heavy, cold soils, a light, moderately rich root-run best suiting it. The drills for the plants may be drawn from 10 inches to 12 inches apart, 9 inches dividing the plants in the row. We plant the Broad-leaved Batavian much more extensively than Green-curbed, the former being rather the best keeper and superior for cooking. The Moss-curbed requires less room than either of the preceding and blanches more quickly, but is crippled by a very light frost. It ought, therefore, to be grown for the earliest supplies only. Blanching should not be commenced till the plants are nearly or quite fully grown. There are various ways of accomplishing this, one of the simplest being to tie them up rather closely and enclose in a flower-pot, or

they may be covered just as grown with either boards, slates, or hay.

STATE OF THE CROPS.

Vegetables generally were never more abundant than they are this year, nor better in quality. In a few instances a difficulty was experienced in obtaining a good plant, this being principally due to the action of slugs and worms, but on the whole much less trouble than usual has been expended in the work of stocking a garden with all kinds of serviceable vegetables. Peas have been, and but for the small birds would still be very abundant, especially where the rows have been well separated from each other. Isolated rows are the most free from mildew and the least infested by small birds. Particularly productive are the rows of second early varieties sown on the ridges between Celery trenches, these being quite free from mildew, and promise to yield heavily till damaged by frosts. Ne Plus Ultra among tall-growing varieties fills the best at this time of year; Latest of All, a variety of medium height, is also doing well as usual, and the dwarf William Hurst is quite a gem for late sowing. A change to warm weather has put new life into some of the apparently exhausted rows of tall-growing Peas, and a good second crop will be obtained. In many gardens it is necessary to enclose late Peas with rather fine mesh fish netting, or the birds eat all the produce. Runner Beans are wonderfully productive, and will remain so till cut down by frosts. Jubilee produces very fine straight pods, the quality also being good, but we depend largely upon the old Scarlet, the plants of this variety yielding immense clusters of small straight pods, which find most favour in the kitchen. Kidney Beans remain in a productive state much longer than usual, and we shall have any amount of seed owing to the demand for young pods not equalling the supply. Late-sown rows are very promising, these just commencing to flower, and being duly protected from frosts, they will be serviceable till such times as pit and house-grown crops are available. Autumn Cauliflowers are turning in well, and are really too large, yet nothing has been done to them since they were first put out. Broccoli is far too luxuriant, and those especially who have planted rather thickly may yet regret it. The bulk of ours are not less than 30 inches apart each way, and they quite cover the ground, but the stems are unusually short; whereas those more thickly planted are much drawn, and as a consequence are far more liable to injury from frosts. In cold districts or where Broccoli are often injured by frosts, it will be advisable to practise heeling over the most overgrown breadths of plants the better to protect the stems, but this must not be done before November. Brussels Sprouts are very strong everywhere, but with these again many err in planting too thickly, much the best crops being produced by plants that are well exposed to light and air. Borecoles, Chou de Burghley, and Savoys are all growing most satisfactorily, and lovers of such vegetables ought to have a good time of it next winter. Beet and Carrots, although sown late in April, are much too coarse, and the same fault may be found with the other root crops. Celery has grown away freely from the first, and is singularly free of leaf-mining maggots. Salading generally is plentiful and good, the Lettuce and Endive being prepared for winter thriving capitally. In this district the Potato haulm has long been destroyed by disease, though the tubers are not so badly affected by it as anticipated, while the quality never was better. In the more midland and north-western counties much of the haulm is yet in a healthy state, and in all probability heavier crops will result. Although Potatoes were so much diseased, Tomatoes have escaped surprisingly, and with a few weeks of moderately favourable weather should ripen off heavy crops of fruit. On the whole, therefore, we have every reason to congratulate ourselves both upon what we have obtained in the way of vegetables this season and the present state of the crops. W. I.

Best setting Tomato.—What is the best setting Tomato, as I find the variety Perfection very shy in the early months?—T. W.

THE CHISWICK VEGETABLE CONFERENCE.

CONFERENCES have become very fashionable among horticulturists, but in no single instance that can be given can they be said to appeal more to the sympathy, or more fully merit the support of all classes than that to be held on vegetables generally at Chiswick, September 24, 25, and 26. Vegetables, even more than fruit, very few of us can dispense with, and in addition to being a necessity, they also rank, when well grown and properly served, among the cheapest and best luxuries that can be mentioned. That vegetables are now extremely popular throughout the length and breadth of Great Britain, and, it is to be hoped, in Ireland as well, few will be disposed to dispute, and, I may also safely add, there has been of late years a marked improvement observable in their cultivation, especially among the industrial classes. Undoubtedly there is still plenty of room for progress, and any means of disseminating instruction ought, therefore, to be welcomed.

The Royal Horticultural Society, in spite of any failings that may have existed, has always been popular among gardeners, and, it is to be hoped, will eventually become even more so. Now they have, from force of circumstances, or, let us charitably suppose, from a desire to extend the usefulness of the society, broken away from the old "hole-in-the-corner" meetings and gone in for what promises to be a very instructive series of conferences. Gardeners, and also their employers, ought to rally round them, this, I presume, being all that is needed to bring the old society to the front rank again.

Exhibitions are common enough, nearly every town and village now-a-days having its annual meeting. At many of these the display of vegetables is remarkably good, the progress in this department being far more marked than in any other. At some of the most important shows, among which I would include Taunton, Exeter, Shrewsbury, and Bath, the tents are overflowing with vegetables, the specimens in many instances being exceptionally good. In all probability, as far as extent and quality are concerned, the exhibition at Chiswick will not surpass, even if it equals, that at either of the shows named. But what it may lack in some respects it will gain in others. Everything of real utility in season in a garden will be represented as well as much that many may consider of fictitious worth, and it will be especially valuable as affording a means of comparison. The complaint is often made that there are too many varieties or forms of various vegetables catalogued, and all are described in such glowing colours, that those who make out the seed order are apt to select more than it is to their advantage to grow. I have frequently asserted how unwise it is to attempt the culture of a great variety of any species, much more satisfactory results attending the growth of a limited number in greater quantities. A reliable guide as to what are the best to grow would therefore prove of inestimable service to a large number of both amateur and professional growers, and this it is to be hoped will be one of the results of the conference. It is intended to appoint sub-committees to examine the several exhibits for the purpose of revising nomenclature, and of making selections of the most approved and typical examples in each class, and if this is properly carried out a very good work will have been done. I have no doubt a great number of synonyms will be found among the many presumably distinct varieties of vegetables brought together at Chiswick, and which will, I hope, be duly grouped as such. Even when this is done it will not, in many instances, be an easy matter to select the best forms, this being especially the case with Cabbages, Cucumbers, Tomatoes, Peas, Onions, and Potatoes. It is proposed to select five forms of Cabbage, these to include both large and small sections and the best red variety, but Savoys are to be grouped in two sections only; whereas four, as affording a long succession, might well be selected. The selections of Borecoles, Brussels Sprouts, Cauliflowers, or Broccoli for autumn or winter use, Globe Artichokes, Spinach, Gourds and Vegetable Marrows, Cucumbers, To-

matoes, Kidney Beans, Peas, Leeks, Turnips, Carrots, Beet, Parsnips, Endive, Lettuces, and Celery are of an equally limited character, and if not most satisfactory to all parties cannot fail to be highly instructive. So also will be the results of a careful examination and selection of the large number of Potatoes that will be submitted for the test. It is intended to select eighteen varieties of these for garden culture for autumn and winter supply, six varieties for small gardens, six varieties for market and field culture, and the best seedling varieties—these last to be cooked.

From a gardener's point of view this conference should be of greater service than any yet held, and it is to be hoped a large number of the profession will be present on each day. Plants and cut flowers are far more attractive to the sight-seeing public generally, but the greatest number of gardeners at a flower show will always be found in the fruit and vegetable tent. Gardeners ought not, however, to have Chiswick all to themselves, much as they may appreciate the luxury, but their employers, and also amateurs, should attend and judge for themselves what are the best forms of all kinds of vegetables and salading for their respective places. On the second and third days of the meeting papers will be read by experts on topics closely connected with the kitchen garden, and much valuable information may be gleaned from this source. Much that is advanced by the writers may be neither novel nor different to what has often appeared in the gardening press, but, speaking from experience, I can safely affirm that the impression gained from listening to a lecture is much deeper than the same remarks would be if merely read from the pages of a book. It is on the second and third days, therefore, that the greater number of gardeners ought to be present, and many employers will do well to give them an opportunity to further improve themselves in vegetable lore. W. IGGULDEN.

VEGETABLE JUDGING.

It is sometimes said that the hardest judging of exhibits is found when indifferent quality prevails. That may be so, as I have oftentimes found, but still high average quality presents numerous difficulties to judges, especially when found in such exhibits as large collections of vegetables. The present is peculiarly a good vegetable season. Rarely have we had a better, for there has been plenty of moisture and no lack of sunshine with little excessive heat. So far as my experience of seasons has gone I cannot remember one which has on the whole more favoured the production of high-class vegetables than the present. When the other day it was proposed to defer the holding of the vegetable conference to another year, I referred to the fact that we were favoured now with one of the best vegetable seasons on record as special reason for holding the conference this year, and evidence on the part of those visiting provincial shows generally tends to bear out the assertion. All say that vegetables are shown in wonderfully fine condition, presenting grave difficulties to judges because of the even quality of the samples, whilst the exhibitors have been more numerous than ever. For the reasons stated therefore, I anticipate, should the vegetable conference be well supported, one of the finest displays of vegetable produce ever seen in this country, and it should put British growers on their mettle when they learn that a celebrated French seed firm purpose sending over numerous examples of vegetables. That act will so far give a real international aspect to the conference. Fortunately for those engaged in the work of selecting the best samples of vegetables at Chiswick to which certificates of merit will be awarded, there will be no competitions, and hence none of that anxiety to deal justly with both exhibits and exhibitors which arises when as at ordinary shows entries are both numerous and of even quality. Without doubt it is a great advantage to judges that they do not know who the exhibitors are. It is well to have no bias towards anyone. It is better still when with absolute ignorance of exhibitors no bias is possible. It would save much heartburning on the part of un-

successful exhibitors could they realise that, as a rule, judges come to their work entirely ignorant of the ownership of the exhibits they have to judge; still further, trouble only about the quality of the respective exhibits, and have no concern for the owners, although not unnaturally curious later, perhaps, to ascertain who the winners may be. A knowledge of this fact should lead unsuccessful exhibitors to accept the decisions of impartial men with more of philosophy and respect than is sometimes found. It should also materially influence the disappointed exhibitor in one class who thinks the judgment wrong that in another class in which he has been successful he believes the judgment to be perfectly right. No consistent man can blow hot and cold in one breath. At the recent Basingstoke show, where vegetables are always seen in good form, but were exceptionally good this year, that very excellent judge, Mr. Molyneux, and myself found a difficult problem set before us in several collections of twelve kinds of vegetables, the best three of which gave remarkable evenness. Twelve kinds of vegetables, including only one variety of Potato, present to some gardeners considerable difficulty. And it may be as well to detail the nature of the exhibits in the collections. They comprised Potatoes, Peas, Runner Beans, Cauliflowers, Onions, Leeks, Tomatoes, Turnips, Beets, Carrots, Celery, and Cucumbers, but whilst Leeks, and first-rate examples too, though so early, were found in the first prize collection, Vegetable Marrows in pairs were substituted in the second and third collections. Marrows are such useful and widely grown vegetables for summer and autumn, that only the possession of exceedingly good Leeks justified the exhibitor in omitting them.

The question of how to arrive at a just estimate of the merits of the respective products was so far settled, that we determined to make the five points the maximum in apportioning value. To that end it was first noted which varieties in the respective collections showed the highest quality, and these dishes were adopted as standards of merit. As, for instance, one had wonderfully good Celery, Peas, and Runner Beans; a second superior Cauliflowers, Tomatoes, and Onions; a third had excellent Turnips, Beets, &c., so that it was easy to find a safe basis for a maximum of points. It was in the apportionment of the lesser number of points which gave most trouble, as in numerous instances the difference in merit seemed to be so infinitesimal that it was hard to determine whether half points or distinctions of one-tenth only were not sufficient to express diverse estimates of value. In the first collection five dishes took five points each, and six dishes four points each, whilst only one dish (Tomatoes) fell to three points. We made a high standard of quality, as possibly others might on the same basis have given more dishes the full number of points. The total for the twelve dishes was fifty-two. In the succeeding two collections the evenness was so remarkable that three half points only won the same place. In the third collection, Celery, the weakest dish of the dozen, fell off three points from the superb Celery in the first collection, and as it was distinctly early for Celery, the exhibitor would have been wiser to have substituted good dwarf French Beans, a vegetable well in season, than have risked defeat with one indifferent dish. Exhibitors make a great mistake whenever they beguile themselves with the assurance that any particular dish will do to win with. They should invariably select their best dishes first, and make those standards for the rest. Good judgment in selecting helps many exhibitors to win prizes, but that judgment is of value only when it is governed by a high standard of quality. Even the art of setting up vegetables tastefully, howsoever it may dazzle some judges, cannot in any case compensate for absence of good quality in respective dishes, and men worthy of respect soon make short work of tasty dressing when they find a close examination of dishes needful. A well trained judgment in selecting winning or high-class exhibits is worth a lot of taste in staging the exhibits.

Some judges are apt to give weight to exhibits which are out of season, as, for instance, very late

Asparagus, which should not have been cut, or very early Celery, which, useful enough for flavouring, would not be asked for as salading during summer weather. Really good products presenting substantial crops in season are, in my estimation, much to be preferred, although it may be found needful to strain a point when, as in the case of competitions for twelve kinds, it is difficult to make up the required quantity without bringing in something not really in season. As to the proper number of points given as a maximum, that seems to be a matter not easily agreed upon, although I have always found five to be a very serviceable number, especially as in the case of minute differences it is easy to split single points into halves. No method of point judging, however, can be infallible. Each judge will have his own standard of quality, and whilst one set of men would agree upon certain numbers as indicative of the quality before them, another set might vary them by going higher or lower. Therefore whatever course be taken it is imperative that the judges themselves should have a good knowledge of the subjects to be adjudicated upon, and then they may be trusted to take their own standards of quality with confidence. As to how far there has been improvement in vegetables, especially from the exhibition point of view, opinions will, perhaps, considerably differ. A comparison of a dozen of the finest samples of best kinds of to-day with a similar collection of some twenty years ago would, were it possible, help to settle the point. The vegetable conference may help to exhibit our undoubted advance in vegetables in a satisfactory way. I have no doubt whatever that great strides have been made in the bulk of our garden vegetables. A. D.

FLOWER GARDEN.

HYBRID TRITONIAS (?)

YOUR correspondent "D." (THE GARDEN, August 31, p. 190) writes about the above-named plants on what seems to me very insufficient acquaintance with either them or their origin. In the first place, the plants about which he writes are not Tritonias at all, but Montbretias, and have undoubtedly been all raised from seed and sent out by the well-known nurseryman and hybridist, M. Lemoine, of Nancy. There is, therefore, no ground whatever for the doubt implied in "D.'s" second line, where he says "said to have been introduced by M. Lemoine." Then as to their origin, as to which "D." seems so uncertain. The first hybrid obtained was Montbretia *crocosmiflora*, which was the result of a cross-fertilisation of Montbretia *Pottsi* and *Crocsmia aurea*, and this showed some of the characteristics of both its parents. The varieties that have been sent out by M. Lemoine, almost annually at the rate of one or two a year, being of course the best and most distinct flowers selected with great care from large numbers of seedlings, have continued to improve in size of flower and brilliancy and distinctness of colouring. The three beautiful varieties, *Gerbe d'Or*, *Etoile de Feu*, and *Bouquet Parfait*, so admirably represented in the coloured plate published in THE GARDEN, May 28, 1887, do not seem to be, any of them, known to "D."—at least he does not mention their names. The new varieties sent out at the end of last year, which have all bloomed well in my garden this year, are named respectively *Talisman*, *Rayon d'Or*, and *Transcendant*. I do not consider these to be any advance on the three fine sorts figured on your plate above referred to, as the first-named seems to me to be a curious reversion in form to one of the original parents of the race, *M. Pottsi*, of which it is a larger flowered and deeper coloured form; the second much resembles *Gerbe d'Or*, with a few reddish spots

round the throat; and the third though a fine variety and a very free bloomer, is inferior in brilliancy of colour to *Etoile de Feu*, though M. Lemoine informs me that it is a much more continuous bloomer, and that in the beds which he has filled with his plants in the gardens of the Paris Exhibition this summer it has been much admired and considered to be superior to all the other varieties. One great merit these hybrids have, and that is of blooming in a very young state from seed. I have only raised one batch of seedlings, which sown in November of one year were most of them in flower in the open border in June or July of the following year, or within eight months of the seed being sown.

W. E. GUMBLETON.

Belgrave, Queenstown.

Bugle Lilies (*Watsonias*).—The beauty of these charming plants can scarcely be over-estimated. A bunch of flowers thrust carelessly into a vase forms a more artistic arrangement than an elaborate bouquet of the most costly exotics. In the garden they are also very effective, and where a sheltered sunny border with a light, but rich soil is forthcoming they should be extensively grown. There are several varieties of them, including the white Bugle Lily (*W. alba*), which generally flowers in early summer, and the rosy Bugle Lily (*W. rosea*). *W. marginata rosea* is a lovely variety with delicate rose-coloured flowers, and is moreover deliciously fragrant.—C. L.

Zinnia elegans for exhibition.—These have become favourite exhibition flowers, but unless they are well staged they, however good, make but a poor display. When shown, as in the case of Dahlias, a dozen blooms distributed over a Dahlia stand, they have but a poor effect, but when shown as Mr. John Walker, of Thame, shows them, the blooms arranged in a stand of small dimensions, and having about 4 inches of stem with leaves, they are then highly effective. Double Zinnias are now so fine that they deserve to be shown in the most effective manner; the flowers are well formed and singularly bright in colour, full, and symmetrical, and always greatly admired. They seem to restore to us something of the florists' *Ranunculus*, and we have scarcely any other flower that can come near them in the month of August for brilliancy of colour.—R. D.

Lilies at Kew.—If anyone is in difficulties with his Lilies let him go to Kew and note how *Liliums* are treated there, how they grow, the magnificent display they make, and have made, all the summer. He can see for himself that whilst some, such as *L. auratum*, *L. lancifolium*, and *L. superbum*, are planted amongst *Rhododendrons* in peat beds, others, as *L. tigrinum*, *L. croceum*, *L. Martagon*, and *L. candidum*, are amongst shrubs which are planted in loam. The kinds here named and many more are all grand when in flower, easy to grow and quite cheap. Kew boasts now a very rich collection of kinds. We were told that it is only within the last five years or so that Lily culture has been a success at Kew, and that success only came when the coddling system of treatment was abandoned. It is plain enough to anyone that Lilies are plants for every garden, and that when once they get into happy quarters as regards soil, moisture, and protection in spring, they will grow and multiply like Artichokes. There has not been a feature in out-door gardening in the public gardens of London so striking and delightful to the public as the Lilies at Kew.

Helenium autumnale and H. pumilum.—*Heleniums* are free-flowering, useful perennials, as from August until frost appears they keep up a succession of yellow flowers which somewhat resemble those of a Sunflower. *H. autumnale* grows about 1 yard high, but *H. pumilum* hardly exceeds 1 foot in height; consequently it can be grown in many places where the taller kind is out of place. All through the autumn it is charming and very effective, so profusely does it flower. As with the *Coreopsis*, so with these *Heleniums*; by practising

annual or biennial division of the tufts and transplanting into fresh ground the flowers are finer and their season is considerably prolonged. Both kinds are useful for cutting, as the flowers last well in water.—A. H.

RHEUMS AS ORNAMENTAL FOLIAGED PLANTS.

ALTHOUGH we are much richer both in good species and varieties of the Rhubarb family than we were a score of years ago, it is still a rare sight to see more than one or two in the average garden, and these usually in the portion



Rhubarb (*Rheum officinale*) as an ornamental plant.

set apart for the kitchen. But besides filling a large gap in the vegetable garden, which we by no means wish to reduce, many of these common Rheums together with the species take a first place in the hardy flower garden as ornamental foliaged plants. We do not mean to ignore the fact that this mode of gardening is comparatively at a discount so far at least as hardy subjects are concerned, public taste, or at any rate the tastes of those chiefly concerned, being in favour of such delicate exotics as *Castor-oil*, *Solanums* of various kinds, *Palms*, &c., which are doubtless very beautiful, but at the same time very troublesome, and cer-

tainly not nearly so picturesque or so able to cope with our ever changing climate as many of the plants that could be selected from the hardy flower border. Beautiful effects, combinations of form and colour, and complete harmony of tone may be had without the aid of tropical plants, and the Rhubarbs can be left to themselves even in our most severe winters and grow perfectly in almost any soil or aspect. An interesting colony in a quiet glade in the park could be formed with such plants as *Hera-cleums*, *Rhubarbs*, *Ferulas*, *Eryngiums*, *Yuccas*, *Acauthuses*, *Gunnera scabra* and *manicata*,

Polygonums, *Artichokes*, and many plants similar in beauty and vigour. Few groups could be more novel, certainly none more interesting or more in accord with the surrounding landscape. The Rhubarbs alone, numbering about two dozen, present a wonderful variety both in form and colour, and though it will be necessary to make a selection where space is limited in the flower garden proper, the more vigorous growing kinds may be grouped in the wild garden or wood where luxuriant vegetation is desired and where they may be left entirely to themselves. They are not at all particular as to soil, though the richer and deeper it is made, the more vigorous they will grow. Perhaps the rarest and certainly the most remarkable of this family at present known is the Sikkim Rhubarb (*R. nobile*). Unfortunately, so far, unless in the north, the efforts made to cultivate it have been futile. In THE GARDEN for October 23, 1880, we are told in the text accompanying a coloured plate that every conceivable mode had been tried at Kew, but all to no purpose, the plants dying as soon as they developed a few large leaves; while in the Edinburgh garden, for the first time in Europe, it produced its very remarkable flower-stem, not unlike a miniature Chinese pagoda with all its trappings. Sir J. D. Hooker, in his Himalayan journal, tells us that *R. nobile* is one of the most striking plants of the Sikkim Mountains, and again, that it is the handsomest herbaceous plant in Sikkim; it is called "Tchuka," and the acid stems are eaten both raw and boiled. What a misfortune that we in the south have to confess to failure in growing such a magnificent and striking plant! It yet seems strange, that while other Sikkim plants can be grown with ease in the south, that this, the best of the batch, should fail. Let us hope there is still a way out of the difficulty. It is found on the black cliffs of the Lacher Valley at 14,000 feet, and will stand any amount of cold.

R. OFFICINALE, of which the accompanying illustration will give our readers an idea of its habit, is unmistakably a grand plant, and, if we err not, the handsomest of all the Rheums, excepting *R. nobile*. It is a native of Eastern and South-east Thibet, where it is also largely cultivated, producing much, if not all, the Rhubarb of commerce. Its chief characteristic is the stout and very distinct leafy stems, which are at last determined to be the source of the Rhubarb of the *Pharmacopoeia*, and not the roots. The leaves are 1 foot to 3 feet in diameter, round, oval, or caudate, hairy, and usually three to seven-lobed, the lobes pointed acutely and irregularly toothed; stem much branched, flowers feathery, greenish, followed by most beautiful bright red-winged fruit.

R. ACUMINATUM is the common Rhubarb of the Himalayan Mountains, and is a near ally of the well-known *R. Emodi*. It is, however, dwarfer, of more slender habit, and rarely exceeds a yard high. Its flowers, which are very much larger, are reddish or purple-brown. It is usually found in rocky places, and amongst brushwood in the alpine regions of Sikkim and East Nepal; the stems are pleasantly acid, and though drier and more stringy than those of *Emodi*, are used in tarts.

R. EMODI is a charming herbaceous and large-foliaged plant, a handsome subject for grouping in the pleasure garden or open lawn. The stems grow from 6 feet to 10 feet high, are paniculately branched, and bear innumerable deep blood-red coloured flowers. A native of Emodus, a mountainous district of the Gossam Than Himalayas, and introduced about 1828.

R. UNDULATUM is a pretty little species, and along with *R. spiciforme* will be found useful for rockeries where the more robust kinds would occupy too much space. The leaves are oval, caudate, pointed, with pretty wavy margins, appearing much earlier than *R. Rhaponticum*. Flowers in graceful panicles, whitish; the stem 4 feet to 6 feet high, smooth and green. A native of Siberia.

R. SPICIFORME is a very dwarf and rare species from the Himalayas, with large white flowers, formed in a dense spike, never exceeding 2 feet in height. As the seed ripens it presents the most lovely tints of purple and red. The leaves are rough and crinkled, like those of *R. Ribes*, oval or elliptic, very blunt, with blood-red stems. A species, from its neat dwarf habit, most suitable for the rockery.

R. PALMATUM and its variety *tanghaticum* are two very handsome kinds from Eastern and North Asia, remarkable for their large, boldly incised foliage and pretty flower-stems.

Amongst others equally desirable are *Collinianum*, *Rhaponticum*, *Webbium*, *Pichoni*, &c., and among garden kinds, *hybridum*, *compactum*, *Victoria*, *Prince Albert*, *Scott's Monarch*, &c.

D. K.

Tiger Lilies.—These have been magnificent this season, more especially the variety *splendens* or *Leopoldi*, which should be planted instead of the ordinary form, from which it differs in the leaves being broader, less woolly, and of a deeper green, while the flowers are larger and more brightly coloured. The spots are also somewhat fewer, but larger than in the common kind, while the stem is almost black. This Lily is of a very accommodating nature, and can be depended upon to flower well the first season after planting, and, what is more, under anything like favourable conditions the plants will continue to improve. The principal varieties of the Tiger Lily other than the above are *flore-pleno*, which is really the only good double Lily we have in our gardens. The leaves and stems of this are very woolly. Another kind in which this last feature is very pronounced is *Fortunei*, a tall-growing, pale-flowered form. A distinct Lily usually regarded as a variety of *tigrinum* is *Maximowiczii*, or *juvundum*, which bears a certain amount of resemblance to both *tigrinum* and *Leichtlinii*, the slender growth and shape of the bloom suggesting an affinity to the last named; while the absence of bulbils in the axils of the leaves is another point in which it differs from the Tiger Lily.—H. P.

Two fine British plants.—Our native Sea Holly (*Eryngium maritimum*) and the Horned Poppy (*Glaucium luteum*) are abundant and beautiful in the sandy wastes upon the Suffolk coast. It may have been that their beauty was intensified by the aridity of their surroundings, but in any case these two plants made a feature as interesting and beautiful as anything I have seen this year either wild or in the garden. The Sea Holly occurred in large scattered groups, and it was in full flower, filling all the air with a pleasant sweetness and the hum of bees. The Horned Poppy was handsome in foliage, flower, and fruit, or rather the characteristic horn-like seed-pods. Its large

tufts of deeply lobed, woolly, glaucous leaves would constitute it a valuable plant for beauty of foliage alone. Although native plants, both are worthy of cultivation in gardens. Through being coast plants they are not often seen in a wild state. They can be highly recommended to those whose soil is of a light sandy nature, as it is in sand alone that they thrive naturally. I brought away with me about three dozen specimens of each. The Sea Holly roots to a great depth. I scratched away the sand from its roots to a depth of from 12 inches to 18 inches, and then had to break them. The Horned Poppy has a long, tapering tap root, but it was easily pulled up, and there were thousands of strong seedling plants just right to transplant for flowering next year. Whilst we are searching for novelties we might with advantage give a little attention to the good things that grow at home, for it is certain that our native Sea Holly is not less beautiful than those kinds we have in gardens; in fact, it is far prettier than some of the more recent additions to this interesting class.—A. H.

CALIFORNIAN LILIES.

EIGHT distinct species besides varieties of Lilies are natives of California. They are *Lilium columbianum*, *L. Humboldti*, *L. pardalinum*, *L. parvum*, *L. Parryi*, *L. maritimum*, *L. Washingtonianum*, and *L. rubescens*. No other country in the world, except Japan, is so rich in these plants. Their range is from the sea-coast of Mendocino County to the edge of perpetual snow in the Sierras. Old Shasta's sides are the home of several species.

I have found *L. Humboldti* in the rich alluvium of the Upper Sacramento Valley, and *L. Parryi*, one of the most beautiful, is a native of the high mountains of San Bernardino and San Diego Counties.

As a collector I have taken many thousands of the bulbs of six of these species from their native homes, and have grown all but *L. Parryi*. In the soil in which they flourish and the manner of root-growth they vary greatly. Briefly it may be said that *L. maritimum*, *L. pardalinum*, *L. parvum*, and *L. Parryi* are bog Lilies with running or rhizomatous roots; that *L. Humboldti* and *L. columbianum* are found in rich, clayey soils, and that *L. Washingtonianum* and *L. rubescens* rot easily in cold or wet soils, that they are true bulbs, and that they thrive in well-drained soil of leaf-mould mixed with disintegrated sandstone or gravel.

L. PARDALINUM,

often called Tiger Lily by the country people, is the most easily grown of all. It has an erect stem with many long, lanceolate, pale green leaves, in whorls. The flower is large and showy; the petals bright crimson at the tips, orange dotted or blotched with black at the centre, and recurved to the stem. There are few more brilliant sights than a well bloomed plant of this Lily. The root is hardy and little subject to rot. It prefers a rich sandy mould, but adapts itself to varying conditions. In a shaded pond I saw fine specimens on the mould on old logs, the fibrous root running down into the water. The plants were 6 feet to 7 feet high, with the finest of blossoms. In the rich mould below mountain springs, or in the alluvium on the banks of small streams, they grow to perfection. I have seen them doing well in sandy soil which in midsummer was as dry as a brick. In cultivation I have seen the best results from planting in a sunken barrel filled with sand well mixed with leaf-mould or bog soil. The plants should be kept moist, not wet, and are better in the shade. The bulbs should be planted about 4 inches deep. Under such conditions strong plants grow 5 feet to 7 feet high, with an abundance of bloom. Once planted, the roots should be left undisturbed. They spread rapidly, increasing in geometrical ratio. The bulb of this year throws out two growing roots this autumn, each of these throws out two next autumn, &c. When the clump gets too thick, the soil can be taken off and the smaller roots removed without disturbing the ones to be left. I have seen clumps of 400 or 500 in the wild state, the produce of one bulb. Both leaf and flower of *L. pardalinum* have

wide variations, and three or four varieties are named, but it is hard to lay down a dividing line, as the varieties run into each other.

L. CALIFORNICUM

is a variety with narrow leaves, and bears a brilliant flower; the tips of the petals a rich crimson and the dots small. The variety *puberulum* has paler flowers and broad leaves. The English florists have found a clear yellow form which they call *L. Warei*, but I have never been able to secure a specimen.

L. MARITIMUM

is one of the rarest in cultivation; this is for a double reason. The bulb is difficult to handle, being particularly liable to decay when disturbed. Then, too, its range of growth is limited. It grows in and around peat bogs on the coast of Mendocino County—rarely farther north or south. It is seldom seen farther than two miles from the ocean. The surface of these bogs is dotted with clumps of Ferns and Azaleas. Around the bogs is a waste of grey, ashy-looking sand, densely covered with Heath, Cypress and Pines. On the edges of the bogs the Lily is a dwarf, often blooming at 3 inches or 4 inches. In the bogs it roots itself in the tufts, and becomes a lovely plant, 5 feet high with ten or fifteen fine blossoms. The leaves are dark glossy green, and the flowers crimson. At Ukiah I have grown it easily in a reclaimed swamp in the shade. The soil is of vegetable matter and always moist. In the same situation *L. parvum*, *L. pardalinum*, *L. columbianum*, and *L. Humboldti*, as well as the Japanese *L. auratum* make a vigorous growth, and, what is unusual for the last, strong bulbs. At Ukiah there is little fog, and there are days in the summer when the thermometer will register more than 100°.

L. PARRYI

is similar to *L. pardalinum* in leaf and bulb, but the bloom is lemon-yellow and very fragrant. Of its cultivation I cannot speak, but believe it easy of culture under the same conditions as *L. pardalinum*.

L. COLUMBIANUM

is *L. Humboldti* in miniature. The bulb is small and compact. The stalk is 2 feet or so high, and the flowers are true Lily-shaped, the petals recurved. In colour it is a light orange-yellow dotted with dark spots. This Lily has for its native home the plains of the Columbia River. It is easy to grow in cultivation, only needing a well-drained loam and ordinary moisture.

L. HUMBOLDTI.

The bulb of this is often 1 lb. in weight and very compact. The stalk is strong and stiff. The leaves are arranged in circles or whorls and are many in number. Eight or ten blossoms to the stalk are not unusual. These are of a reddish-orange with round dark spots. Ordinarily this Lily will grow to a height of 3 feet or 4 feet. The finest specimen it has been my fortune to meet grew in the debris by the side of a Sierra stream. It was over 8 feet high and had an enormous bulb. This Lily increases by seed only in its native state, and where the natural conditions happen to be exactly suitable it is found in great numbers. I took over 8000 good bulbs from one place some years ago. It was on a hillside in volcanic soil, where years ago the gold miners had cut the timber. I had spent the previous week in hard travelling to find five hundred. I once found fine bulbs of *L. Humboldti* in an Oak grove near Chico. They were doing splendidly in the black adobe of that section. In cultivation, this Lily will thrive in clay loam or sandy loam. In hot sections it does better planted in the shade. It needs to be planted 6 inches to a foot deep. High up in the Sierras above the Pine timber on those grand slopes covered with a mixed growth of wild Cherry, Manzanita, and Ceanothus, *L. Washingtonianum* finds its most congenial home. The soil is loose decomposed granite and mould. The snow lies very deep in the winter and is late in melting. It keeps the bulbs moist in their early growth, and when it is gone they make a very rapid growth, often blooming six or eight weeks after the snow has melted. The stalk grows up from 3 feet to 5 feet, and has whorls of from five to twenty-five flowers, pure white and with a most delicious fragrance. I have seen places fairly white with

this Lily and the air heavy with perfume. The bulb is large. I have bloomed it at Ukiah, but find it rather harder to bloom than any of the other native Lilies. I believe, however, that it is grown quite successfully in England. It should be given a loose soil and abundant moisture during the growing season.

L. RUBESCENS

is like *L. Washingtonianum* in every particular excepting that the flower opens pure white blotched with purple, and gradually gets darker till it is of rich ruby colour, hence its name. Similar as the two Lilies are in habit, their native home is very different. *L. Washingtonianum* is a Lily of the high Sierras, *L. rubescens* of the Coast Range. It is found in the Redwoods close to the coast, on shaded hillsides in sandstone gravel, and on high ridges in the chapparal. The finest I have ever seen in numbers were on a chapparal ridge in a soil of gravel mixed with mould, the ordinary chapparal soil. The bulbs grow deep and have abundant moisture in winter and spring, but in the summer such places get very dry. A friend of mine grows and blooms them readily in half barrels filled with sand and mould and placed in the shade. The first essentials with them is perfect drainage and a loose porous soil. Of all our California Lilies it is the most beautiful, and of all Lilies it is the most deliciously fragrant. A flower will perfume the leaves of a book for months, and a well-grown plant is the admiration of all beholders.—CARL PURDY, in *California Florist*.

PIN EYES.

FLORISTS who have their floral fads and somehow cherish them very firmly are always being chastised by superior persons for their faithful adherence to the thrum eye in spring flowers, especially in Auriculas and Polyanthuses. Last spring a lady called to see the Polyanthuses here when in great beauty. After admiring their infinite variety of colour, she said, "Will you give me a clear explanation of the difference between thrum and pin eyes about which so much has been written?" I at once gave from pin-eyed and thrum-eyed flowers the needful ocular demonstration of the difference. "Ah," she said, "I have thought the distinction made in favour of thrum eyes very silly, but then I had never properly noticed the difference as pointed out by you. Now I see that a thrum eye in a flower is a distinctly beautiful feature." This lady's case is typical of that of many others who refer to the favour shown to thrum eyes as silly. They do not understand the properties of flowers, and therefore their criticism is as that of the connoisseur in art who knows nothing of perspective. But I will give an illustration of the difference between the two forms in flowers, which I hope may prove conclusive. In Auriculas, Polyanthuses, and Primroses the very soul of the flower is found in the eye. Now a pin-eyed flower is one having a style, whilst the perfect eye is in the thrum. Those who despise thrums probably have never observed that whilst in pin-eyed flowers the throat is narrow and tubular throughout, in the thrum, so as to give to the anthers that area which is needed for their proper development, Nature has fashioned a cup-shaped throat, and this is of itself an object of beauty, because it adds charm to the flower, and is more pleasing than is the rigidly tubular throat. The element of beauty, of indeed much greater beauty, found in thrum-eyed flowers, as compared with those having only a pin-headed style projecting from the throat, is so much more refined, that florists have been amply justified in making it a prominent feature in these flowers. Then Nature, by placing the style below the anthers in the tube or throat of the flower, distinctly favours fertilisation, either by air motion or by insects, as the pollen grains fall and fertilise the style with assured certainty and ease. In the case of projecting styles, the pollen anthers are almost invariably low down in the tube, and the flowers must depend for fertilisation upon insect or air-borne pollen from other flowers.

Yes, says the botanist, and wisely so; because then Nature is recuperated and helped by the

addition of the pollen from other flowers. That notion may be taken for what it is worth in relation to the flowers in question. In any case, I challenge comparison in proper season with the Primroses and Polyanthuses I have here, all raised from naturally fertilised flowers, and again all from thrum-eyed flowers. I save seed only from these because I desire to perpetuate the best properties of the flowers, and yet a stouter, more robust, or more beautiful strain of either class of spring flowers does not exist; in fact only very robust strains could live in our stiff clay, baked as it often is in summer under burning heat or saturated with water as it too often is in winter. The next time we read a criticism on thrum and pin-eyed flowers let us have new observations, for the old ones are valueless. A. D.

FLOWER GARDEN NOTES.

DAHLIAS.—I grow a few varieties of each section of Dahlias, but from a flower gardening point of view, award the palm to the singles of the reflexed type, as these do not drop their petals nearly so soon as do the loose star-shaped flowers. Next to these the Cactus type are the most telling, being so free-flowering. They are also of a branching habit of growth, and, therefore, suitable both for planting as single specimens or in groups. Some of the dwarf-growing kinds will also bear pegging down, and all may have the points of the leading shoots pinched out when young, because they throw flowers just as fine from the side lateral growths, and, as a matter of course, flowers are produced in greater abundance than on unstopped plants. The flowers of the small bouquet section are, I think, far too stiff and formal to be used other than very sparingly in the flower beds. They are most useful in a cut state; in fact, are invaluable to those having much autumn cut-flower work to do, their formal character being advantageous rather than otherwise when mixed with other less formal flowers and an abundance of greenery. The show section are of little use for purely flower garden purposes, and as they bloom so late and succumb to the first frost, I should exclude them from the flower garden proper, only that many of them are so beautiful that a place should be found for them, some spot where constant floral effect is not required, and yet sufficiently open to ensure the production of fine flowers, this being an easy matter, provided there is good soil and a sunny aspect.

VIOLETS.—Our stock of plants for winter and early spring flowering has just been planted in frames. The plants are from runners taken off in spring, and planted on a border having a north aspect. I am aware that in all this there is nothing new, but I think there is in the fact that the plants are now full of flowers, and frequent gatherings of the same have been made for many weeks past. The varieties are Marie Louise, double light blue, and Queen Victoria, single dark blue. To have them in abundance now is, I venture to think, rare, and I have been trying to find out the reasons why, and one of them, I fancy, is that more than usual care has been taken to keep off runners; and, secondly, the soil is deep, but by no means rich, which means that the roots have struck down deep, so deep that there has been no check to growth from drought, and the poor nature of the soil has conduced to free flowering. In rich soil the plants would have been larger and the flowers less numerous. When Mr. Crump, now of Madresfield, was gardener at Blenheim, I learnt, when on a visit to him, my best lesson in Violet culture. My visit took place in early spring, and the one feature of all others (to me) was the Violets. One could scarcely get away from them; they seemed to be everywhere. Wherever there was a foot of space under a wall, no matter what aspect, there were Violets to be found. "Why all these Violets, Mr. Crump?" I asked. "Because they are wanted." "But what trouble," I said. "None at all," was the answer. "I put in good stout runners; they grow and flower, are pulled up as soon as the season is past, new runners take their place, and the result is what you see." No more old plants of Violets after this, was my resolve. I wish I had been able

to keep that resolve. I have not always, but I have sufficiently often to be able to command the annual runner system under all conditions of soil, aspect, and variety. A two-year-old plant should have no place in any garden.

SEEDLING BEDDING PLANTS.—On the grand old-fashioned terrace garden at Dropmore the beds are so numerous and of such an immense size, that to fill them out with plants with the limited means at command requires all the energy of Mr. Herrin, the successor to the late Mr. Frost. That he has exercised these traits successfully, everybody favoured with a sight of the terrace garden at the present time will readily admit. I cannot describe it other than as gay beyond description—gay, too, with plants that we are apt to consider common, but not so arranged in mixture as Mr. Herrin has done. Take, for instance a huge bed, at least 12 feet by 12 feet, that is quite filled with seedling Verbenas of every hue of colour. The plants are at least 30 inches in height, the only fault being that they are too well flowered, there being literally no greenery to set off the flowers. I suggested the introduction of a central and four other foliage plants as standards in the mass of flowers. The desirability of the additional ornamentation was admitted, but lack of both plants and labour prevented this being done. A similar sized bed is filled with double Zinnias in the richest mixture of colours I have ever seen, and the bulk of the flowers would be creditable on any exhibition table. Gaillardias furnish a bed of the same size, and except that they are a little too irregular in height to be uniform with the other beds, they are equally pleasing and beautiful. There are a couple of beds of seedling Petunias, the growth of which is of abnormal height and proportionately well flowered. These are well backed up with a shrubby bank and this adds greatly to their effectiveness. Besides the above, Mr. Herrin makes good use of Stocks, Asters, Indian Pinks, and Mignonette, and, without wishing in any degree to disparage the arrangements of ordinary bedding plants that are also to be seen here, the annuals make the grandest display. W. W.

A good way of destroying slugs.—So far as I know, the simple plan I have now to explain has not been made known before, and I have found it out by accident as much as anything, but it is by several weeks' observation that I have been able to attest its effectiveness. By discovering that slugs resorted to the holes left by the stakes pulled up from around Delphiniums, Pyrethrums, and such things as are past, it occurred to me that holes might be formed near other plants with the ordinary wooden dibber where the slugs abound. To destroy those that go into the holes so made, it is only needful to push down the dibber and they are crushed instantly, cleanly, and without the remains being visible. The other advantages of this simple plan are that there need be no collecting, and the work can be done at any convenient hour during the daytime. I find by way of an additional temptation to the slugs to enter the holes or traps, that a morsel of fresh bran will lure them to stay in the holes during the day, when, of course, the dibber should be used to press them to death.—J. WOOD, Woodville, Kirkcaldy.

Mixed climbers.—Very beautiful mixtures, in many cases more the result of accident than design, are frequently met with at this season of the year amongst climbing plants. They have either become mingled and interlaced with plants of a similar nature, or they have been overrun by sturdier growing subjects. In looking over a large collection of climbing plants that had received but little pruning for some years, I was particularly struck with the following, viz.: Clematis Jackmani, that had become mixed with the variegated Honeysuckle, both now in their richest dress, the large masses of purple blooms, backed up by a groundwork of golden leaves, looking very beautiful. Clematis lanuginosa and Wistaria sinensis looked very charming, but in more subdued colours; the Wistaria is flowering again now for the second time. The flowers are almost equal to those first pro-

duced, only that the individual blooms are not so large. The contrast is even more effective now than it would have been when the first bloom was out, as the foliage of the *Wistaria* is now not only plentiful, but has its late summer lemon-yellow tinge. *Gloire de Dijon* Rose with *Clematis* Star of India make a fine combination; the stiff branches of the Rose, covered with an abundance of its lovely cream-coloured flowers, were wreathed with graceful sprays of the *Clematis* blooms. *Clematis flammula* looked lovely running up into the sombre Fir trees, and hanging in graceful festoons that swayed with the slightest breeze; the blooms of this sort are very small, but they make up in numbers what they lack in size. White *Jessamine*, covering a large fence, full of snowy blossoms, looked charming, and a few climbing *Nasturtiums* had run up amongst it, making a pretty picture.—*J. G., Gosport.*

HELLEBORUS NIGER LACTEUS.

SOME years ago when collecting *Hellebores* I got from a nursery at Wiesbaden a plant under the name of *H. n. laxus*, but as nothing about the plant was of lax appearance and the flowers had a peculiar warm tone, I gave it the name of *lacteus*. I could not trace its history, being told on inquiry that they had sent me their last plant and did not know where it came from. I suppose Mr. Burbidge's plant, owing to change of country and climate, has produced its blossoms prematurely; here the regular time is October to February, being best in January. By the kindness of Baron St. Paul, I got from his country seat at Fischbach, in Silesia, a peculiar variety of *H. altifolius* flowering from November to March, the flowers being of the purest white; the only drawback it has is that the petals are narrow, not up to the form which florists require, but I think seedlings which are to flower this year will show an improvement in that direction. Several years ago I brought home from Vienna another form of *altifolius* collected in the Val di Ledro, and was very pleased with the particular warm tone of its flowers. Seedlings of this flowering last year for the first time showed a great change and improvement, flowers as large as the *altifolius* of English gardens, not pure white, but white with a mixture of a rosy flesh tint, very lovely indeed. One day another niger variety arrived which was called *pumilifolius*; it was very poor and stunted, the leaves close to the ground and in shape like those of a very ordinary niger. It showed its real character last February when some thick flower-stalks rose above the foliage and developed shapely, well-formed blossoms. In size the flowers are the largest of all the niger section; this I consider one of the best, if not the best. Of course, *Hellebores* must be seen when well established before they can be fairly judged, and this is the only reason why I did not give publicity about the expected novelties.

Baden-Baden.

MAX LEICHTLIN.

SHORT NOTES.—FLOWER.

Michauxia campanuloides.—This stately-growing plant is so seldom seen in gardens that probably one-tenth of hardy plant growers are not aware of its existence. A few weeks ago I saw a remarkably fine specimen of it in a cottage garden in Lincolnshire. The plant was growing in a sheltered position, and had attained a height of nearly 6 feet, and bore an immense quantity of flowers. It thrives best in a moist rich loam and sheltered position.—*C. L.*

Chilian Glory Flower (*Eccremocarpus scaber*).—I recently saw a fine mass of this growing on a trellis. The plants were raised from seed this spring, and being in a good position had made fine growth, which was literally covered with orange-red flowers. By placing a covering of litter over the roots in winter I have kept plants alive for several years.—*C. L.*

Aster Comet.—This is one of the best *Asters* of recent introduction. Grown in a mass it is very effective, the lovely, delicate pink blooms being quite equal, as far as beauty is concerned, to the best Japanese *Chrysanthemums* grown. The petals are very long, and in many cases twisted, which rather

adds to its charm than otherwise. Like most of the annual *Asters*, it thrives best on a rich sandy loam and in a good position.—*C. L.*

Daffodils from Ireland.—A paragraph in the current Daffodil list of Mr. W. B. Hartland, of Cork, requires a brief contradiction. At one of the Royal Horticultural Society's meetings last spring, three Irish forms of white *Ajax* were submitted for an opinion and failed to find favour in the eyes of the Narcissus Committee. Their names were Countess of Desmond, Silver Bar, and Robert Boyle. Mr. Hartland states that the specimens were not Irish, but inferior varieties substituted under these names on purpose to obtain an adverse verdict from the committee. These statements of Mr. Hartland are entirely unfounded and incorrect. As to the merits of the said varieties, my own opinion coincides with that of the committee at large: The flowers are pretty enough, but scarcely worth growing by those who wish to confine their attention to really first-class kinds, of which we now have so many.—*G. H. ENGLEHEART.*

Zephyranthes Treatise.—For the last two months there has been a good display of flowers on a border filled with this plant at Kew. The border is on the south side of a greenhouse, and owing to the nature of the roof the soil is kept saturated by rain, &c., all winter. This evidently suits the *Zephyranthes*. There have been hundreds of its flowers expanded at one time, and as each flower is 3 inches across and pure white, the effect has been particularly striking. The foliage is Rush-like, a foot or so long, and it is plentiful enough to completely hide the soil from view. This border has been made and planted three years, and the plants have thriven since then without any protection or attention whatever. As a plant for narrow borders in front of houses or at the foot of walls this *Zephyranthes* should prove useful. It certainly may rank with such hardy bulbs as *Schizostylis*, the *Belladonna Lily*, &c. It was introduced in 1883 from Florida, where it is said to flourish in damp ground.

Tritomas.—No good garden should be without some fine tufts of the different Flame Flowers. In late summer and early autumn they produce a brilliant effect which no other flower can equal. They may be associated with shrubs provided they are not robbed thereby, or grown in large beds or borders with other fine hardy perennials. To have and enjoy their highest effect, they should be boldly grouped or massed, and to see several hundred spikes standing in one group is indeed a brilliant sight, and a noble feature in the garden landscape. The common *Tritoma Uvaria* has been in this country more than 150 years, and although in recent years there have been a number of new additions to the genus, the first known kind is still indispensable, and will long remain so. Much more might be done in gardens by paying attention to the finer families of hardy plants, and growing in quantity such things as the soil and situation are suitable for. In Mr. Thomson's garden at Ipswich recently *Tritoma Saundersi* and *T. nobilis* were gorgeous, both being extensively grown. They are large forms of the common *T. Uvaria*; *nobilis* has very long, broad leaves, and the flower-spikes sometimes attain the height of 8 feet. All of these flower at the same time, but there is a kind called *T. praeox* which is often in bloom in May. In habit it exactly resembles *T. Uvaria*, of which it may be but a variety. It was introduced from South Africa in 1862. *T. grandis* is sometimes called *Uvaria major*; it is the last to bloom of all, and is sometimes very fine in November and December, but sharp frosts considerably damage the spikes. In mild and favoured districts, however, this fine kind will greatly enliven the early winter aspect of the garden. Two very pretty, but smaller-growing kinds are *corallina* and *Macowani*. The first-named has a neat tapering spike of apricot-coloured flowers, but those of *Macowani* are brighter in colour and the spike is larger. These kinds rarely exceed 2 feet in height. *T. caulescens* is a handsome foliage plant, with its large tufts of broad glaucous leaves borne upon a stem, but the tips of the leaves are very apt to wither, and this fault greatly detracts from the

beauty of the plant. *T. Leichtlini* is a distinct and beautiful kind of comparatively recent origin, and the catalogues contain quite a long list of new kinds which I have not seen; but doubtless they are well worthy of a trial, as we can hardly know too much of such a fine hardy flower.—*A. H.*

GARDEN FLORA.

PLATE 718.

JAPANESE CAMELLIAS.

(WITH A COLOURED PLATE OF TWO NEW VARIETIES.*)

THE accompanying plate represents two varieties of Japanese Camellias, a class of plants which has been imported from Japan by Mr. Gerald Waller, and the gentleman named has kindly sent me a set of twenty-two water-colour drawings, many of which have not yet been offered to the public. Mr. Waller says the Japanese are keen florists, and they are very averse to selling new plants to foreigners, as they prefer to keep them amongst themselves. The Camellias were purchased from a florist at Tokio. Mr. Waller mentions that they are constantly competing with each other at flower shows, and when he was in Tokio the exhibitions of Lilies and Irises were numerous and most interesting. It would be a great treat for our old veterans in flower shows in England to see some of those held by the Japanese. There is little doubt that some very interesting details of management could be obtained. My informant also adds that the single red Camellia grows wild in Japan, and assumes the proportions of large trees. This is a point which deserves the attention of planters in many parts of our own country where these would thrive and make handsome plants; the single-flowered kinds would doubtless be more suitable for the open air than the double kinds. I remember seeing some years ago many plants flowering in the open in Mrs. Crabb's garden near Southampton. It was the beginning of March, and snow covered most of the blossoms, which were doubtless spoilt by the weather, but I do not think single-flowered kinds would suffer to anything like the extent that double ones do; the kinds therefore here portrayed will be very valuable planted outdoors in our southern and western counties. I had hoped that Mr. Waller would have said something respecting the grafting of the Camellia in Japan. We know the Japanese are great grafters, and by this method we in England generally propagate them, usually grafting upon the single red or the kind which was imported from China. The very best plants which I have seen were obtained in this manner; indeed, the finest specimens which are to be found in England and Belgium have been plants that have been grafted upon old stems, about three scions being put into one stem. They make denser and more shapely bushes treated in this manner than in any other system I have seen adopted. Inarching the Camellia is another system which used to be adopted in my young days, and many days I have spent preparing plants and assisting in inarching Camellias. This system, however, for the increase of young plants has long gone out of fashion, and a very good thing, too, for it was a troublesome task compared with the style of grafting of the present day. The kinds here figured are from a set of these plants introduced by Mr. Waller, and have passed into the hands of Mr. Williams, of Holloway, in whose nursery they flowered early

* Drawn for THE GARDEN in Mr. B. S. Williams' nursery at Upper Holloway by H. G. Moon, Jan. 20, 1889. Lithographed and printed by Guillaume Severeys.



TWO NEW JAPANESE CAMELLIAS

in the present season, and very beautiful they are.

GERALD WALLER, the one figured at the bottom of the plate, is a beautiful semi-double kind, with flowers some 3 inches across, petals broad and round and of good substance, light, broadly flaked with rosy carmine, and speckled with the same colour. The flowers are marked much in the same manner as a Carnation, whilst in our illustration, probably on account of the plant having been severely cut for propagating purposes, the flaking is not so distinct as in the original drawing now before me, the anthers being golden yellow. The upper figure is a beautiful cupped flower.

Amongst others of this set of ten kinds being distributed by Mr. Williams particularly noticeable is the variety named

MRS. LADE; it has neat and compact flowers of exquisite form, petals small and pointed, well reflexed. It forms a beautiful double flower, which from its size is well adapted for cutting.

LADY ARDILAUN has flowers about $2\frac{1}{2}$ inches



Camellia japonica.

across, having a row of broad guard petals of the purest white; the Anemone centre is also pure white, with a tinge of primrose at the base.

LADY McCULLOCH.—This is a pretty double form and of good shape, white, slightly flaked with rosy carmine near the centre.

ADELINA PATTI.—This has a somewhat cup-shaped flower; it is a very handsome single form with very round petals, which are bright rosy pink, flushed with carmine towards the base and netted with veins of the same colour, and broadly bordered with white on the margin; anthers golden yellow.

MRS. J. BUCHANAN.—This is a beautiful single variety with the petals blush, suffused and flaked with carmine, anthers primrose-yellow.

NAGASAKI.—A semi-double flower about 3 inches across, colour bright rosy carmine.

NIPHON.—In this variety the flowers are about 5 inches across, the light petals flaked and striped with rosy purple, golden anthers.

TAKAYAMA.—A small-flowered kind, which would be exceedingly pretty as a flowering shrub, and I hope to see it plentiful in such a position. It has

but a single row of petals, which are crimson-scarlet, the centre being full of anthers.

THE MIKADO.—This is a semi-double form, with flowers of a rosy crimson, with a flaked border of white, anthers yellow.

All these Camellias have small deep green foliage, and would make grand additions to the early flowering shrubs in our borders, and as such will prove to be invaluable in many parts of this country. W. H. G.

ORCHIDS.

W. H. GOWER.

DENDROBIUM HOOKERIANUM.

FLOWERS of this species have come to me during the past week or two, and remind me of this glorious plant, which had been nearly forgotten. It appears to have become scarce, notwithstanding the quantities which I as well as others imported, and that, too, not so very long ago, as it is only nineteen years ago this month since it first flowered in this country. The plant, which was named *D. chrysotis* by Reichenbach, may be described as the largest-flowered in the section to which it belongs, and was described by Lindley under the name we here adopt in 1859, which was some ten or eleven years before it was known in this country. It is named in honour of its first discoverer, the present Sir Joseph Hooker, who during his earlier times was so well known as the discoverer and introducer into this country of many of the grand Rhododendrons of Sikkim and its surroundings. I myself imported it from Assam, and so also did others. Sir Joseph Hooker says "he found this plant in 1848 in the province of Sikkim, growing on trees in hot valleys at an elevation of from 1000 feet to 5000 feet above the sea." It was originally introduced, I believe, by Mr. John Day, and some two years afterwards it flowered in Messrs. Brooks' establishment at Manchester. It was in demand by growers for some years, but I have not heard it named of late, so that, independent of its great beauty, I am glad to see it again. The plant under cultivation thrives well in a pot, and in this manner (notwithstanding its epiphytal habit in a state of nature) its pendulous spikes of bloom are seen to great advantage. Its stems are slender and leafy towards the upper part, some 4 feet or 5 feet long, I believe more in my imported specimens. It is nearly allied to *D. fimbriatum oculatum*, but it is more slender in its growth, and it does not require its bulbs to ripen and become leafless, as in that plant, but its richly-coloured flowers are borne on the leafy stems of the same year. Although I cannot say that it does not sometimes, like *fimbriatum oculatum*, bloom from the old as well as the new growth, it must be observed that the last-named plant never does produce its flowers from the growth of the season. The scape is slender, pendent from the weight of its flowers, which are from six to nine in number and from 3 inches to 4 inches across, thick and fleshy in texture, and of a deep apricot-yellow, the lip in addition being marked with two feathery blotches of deep maroon at the base, which is velvety in appearance, whilst the edge is deeply bordered with a Moss-like fringe, which adds materially to its beauty. The plant is very free in its habit of growth and also profuse in flowering. It requires to be potted in fibrous peat and Sphagnum Moss, the pots to be thoroughly well drained, but I prefer to keep it in as small a pot as possible, as I believe the plant does not like over much room or too much soil about its

roots. It likes an abundance of heat and moisture during the growing season, and whilst the flowers are upon it and afterwards the chief care should be given to the proper ripening up of the bulbs, and then the plant must be kept dormant until spring. Care must be taken to syringe daily through the growing season in order to keep thrips away; these spoil the rich greenery of its leaves and thus destroy much of its beauty.

Dendrobium Dearei.—This beautiful species is now delighting the growers of Orchids with its pure white flowers, with just a stain of Pea green at the base of the lip. We have before urged the cultivation of this plant upon market growers, so will say nothing more on the subject here, but to remind them that the flowers that are open now will still be good at the end of November. Any one having a stock of these plants can get a steady supply of flowers for three months. It likes a considerable amount of heat and moisture during the growing season.

Lycaste Smeana.—This is an exceedingly interesting species which Prof. Reichenbach, who named it, said was of hybrid origin. Whether that is so or no, it is a pretty plant with flowers in the shape of, but smaller than those of *L. Skinneri*, and, as in most of the forms of the last-named plant, the sepals and petals are ivory-white, the lip also white in the ground colour, but profusely spotted or dotted over the whole surface with purple. It succeeds with *L. Skinneri* and other species of the genus, and it always blooms during the late summer and autumn months, lasting long in full beauty. It is just now very beautiful in Mr. Horsman's establishment at Colchester.

Scuticaria Hadweni.—A beautiful specimen of this little-known plant came recently to my notice bearing a dozen flowers, and it was by far the finest of its kind which I have ever seen. Its leaves are terete, not nearly so long as those of the better-known Shoe-lace Plant (*S. Steeli*), and the flowers have a longer peduncle, the sepals and petals being nearly equal, spreading, yellowish-green with brown blotches; lip somewhat cucullate, freely mottled with spots of deep flesh colour over its entire surface, rendering it very effective. This plant is a native of the warm parts of Brazil, and in our plant houses it requires to be grown at the warm end of the Cattleya house. It should have but little material about its roots and good drainage, whilst a shallow basket is best for it, in order that it may be hung near the roof-glass, as it appears to enjoy full exposure to the sun.—W. H. G.

Masdevallia Roezli rubra.—"J. D. A." sends me a flower of the above-named plant for name and my opinion of it. It is very beautiful, the flowers resembling those of *M. Chimera* in shape, and measure over a foot across from tip to tip of the tail-like points into which the sepals are lengthened. Like the majority of these plants, it is the sepals only which make the display, the ground colour of these being creamy-yellow, heavily mottled with deep brownish-purple, which is carried in a transverse manner, and it leaves the surface rough, the tails of the sepals for some 4 inches being of a deep shining brown; lip pink, small with inflexed edges. It is a beautiful variety, and as it stands on the table before me looks like a huge spider. These plants require to be kept in the cool house and the sun should not be allowed to shine upon them, neither should their roots be disturbed in repotting. A fine collection of this section of the genus was nearly destroyed through neglect in this matter.—W. H. G.

Odontoglossum Harryanum.—This plant is now very fine in Mr. Horsman's garden at Colchester. It was through this gentleman's hands the first plants came into cultivation, and he is maintaining its reputation in a marked degree. There are numerous richly coloured forms, and it bids fair to soon develop as grand spikes as we see on the imported plants. I am still of opinion that the one fault the plant has will be overcome by culture and selection, as I observe some of the plants beginning

to spread their petals in a natural manner, and this materially adds to the beauty of the flower, whilst in most of the plants the petals readily yield to the slightest pressure, that it really does not appear to be of so much importance. Some of the forms now flowering with Mr. Horsman are of great depth of colour.—W. H. G.

Odontoglossum grande.—This fine old species seems to be now better appreciated and to be more grown in quantity than was the case a short time since. A very fine plant is now flowering with Mr. Smith in his gardens at Arddarroch. Its flowers are large in size, and there are twenty-six blooms upon the specimen, which forms a gorgeous show in the plant house. Fine as this plant is, however, I had myself when growing the Orchids in the Messrs. Jackson's collection at Kingston, in Surrey, a plant which bore the enormous quantity of thirty-seven large and very highly coloured blooms. It was about the second year after I had commenced the cool Orchid growing, and it was one of the plants that drew the attention of growers to my system of culture. Small examples of this plant are just now very fine with Mr. Bonny at Swanley.—W.

Cattleyas at Colchester.—These are exceptionally well grown in Mr. Horsman's establishment at Colchester, and also the allied genus, *Laelia*, especially the Mexican forms. Of these latter we were glad to see that the white-flowered *L. anceps* is showing many flower-spikes, whilst the growths in almost all instances are finer than the imported bulbs, but yet many of these growths are destitute of flower-spikes. There is yet some peculiarity in this plant to find out, and happy will be the man who discovers it. *Cattleyas* in flower now are some fine examples of *Gaskelliana* in good variety, and also an excellent form of *Harrisonia violacea* in quantity. We are glad to observe the increasing popularity of this fine old species. There is no peculiarity in Mr. Horsman's treatment, except that he gives full exposure to sun and light and a free circulation of air, this latter being indispensable to good cultivation.

SHORT NOTES.—ORCHIDS.

Miltonia candida is one of the best autumn-flowering plants, and its blooms last a long time in perfection. It is now particularly fine with Mr. Bonny at Swanley.

Oncidium Lanceanum.—Fine flowers of this superb old species come from Mr. Smith, gardener to Mr. Moss, of Weston Grove, Southampton. The flowers, besides the beauty of their colouring, have a sweet aromatic odour, which renders them very delightful, and they remain long in beauty.

Miltonia Moreliana atrovirens.—This, the finest of all the very dark forms of this species, is flowering finely in Mr. Bonny's establishment, and is well deserving notice, the colour being so rich and rare. These plants appear to have been grown well, as they are not of such a yellow hue, as is so frequently the case.

Epidendrum prismatocarpum.—This delightful plant is now flowering in great beauty with Mr. Horsman at Colchester. Its flowers are very charming, and they last long in full beauty. It is one of the species of this genus which thrives best with good heat and moisture, and the very finest plant of it which we ever saw was in Mr. Buchan's garden at Southampton, where it was grown in the East Indian house.

Oncidium luridum guttatum.—This is a very beautiful plant recently imported by Mr. O'Brien. In growth it is little different from the type, and, like it, thrives best in the intermediate house. It produces very long and many-coloured spikes of bloom, the ground colour of which is yellow, freely spotted with orange-red, the lip at the base being of a crimson hue. There used formerly to exist in the Kew collection a fine example of this variety, which flowered annually and produced a fine effect.

Odontoglossum Humeanum.—This is a form of *O. Rossi*, and it is somewhat uncommon to see this plant in flower now, as I did recently in Mr. Horsman's establishment. It is a pretty plant, with light yellow sepals, barred at the base with cinnamon-brown, the petals white, blotched with brown; lip white and

broadly cordate. *O. Rossi* and all its varieties are deservedly popular, being very free growers and blooming most abundantly. The flowers, moreover, last a very long time in full beauty. The plants require the very coolest treatment.—W. H. G.

ORCHID CULTURE PAST AND PRESENT.*

IN accordance with the request of the council that I should to-day treat about Orchids, I propose to review, as concisely as the subject admits, the progress of the cultivation of the epiphytal Orchids from their first introduction into British gardens up to the present time. In the course of this retrospect I shall point out some of the difficulties which our predecessors had to contend with in this branch of horticulture, and how they succeeded, at least in part, in overcoming them, and thence from their successes and failures to derive, if possible, some practical hints for our own guidance.

The first tropical Orchid that became established in the hothouses of Great Britain seems to have been the *Vanilla*, which was known to Miller, the second edition of whose "Dictionary of Gardening" was published in 1768. Miller also enumerates several species of *Epidendrum*, some of which must have been known to him in a living state, for he says: "The plants cannot by any art yet known be cultivated in the ground, though could they be brought to thrive, many of them produce very fine flowers of uncommon form." Three species sent from America, which he planted with care in pots and placed in a stove produced flowers, but the plants soon after perished.

A few years later Dr. John Fothergill brought home from China, among other plants introduced for the first time into British gardens, some Orchids, including *Phaius grandifolius* (*Bletia Tankervilleæ*) and *Cymbidium ensifolium*; these were cultivated by him prior to 1780. In 1787 *Epidendrum cochleatum* flowered for the first time in this country in the Royal Gardens at Kew, and *E. fragrans* in October of the following year. Seven years later, fifteen species, chiefly West Indian *Epidendras*, are recorded as being cultivated in the Royal Gardens "in very great heat, and with fragments of half-rotten bark at their roots."

As a consequence of the political circumstances of the times, the first epiphytal Orchids received in England were brought from the West Indies, chiefly from Jamaica, by naval officers and by captains in the merchant service, who gave no certain information respecting the habits of the plants and their environment in their native country beyond the bare fact that they grew on trees. They were thence believed to be parasites, like the *Mistletoe* of our woods and orchards, a belief that became so firmly rooted that it held its sway for many years even after their true character had been determined by Dr. Robert Brown and Dr. Lindley. The prevalence of this belief was prejudicial to the progress of Orchid culture, for it induced attempts at cultivation that were necessarily futile. The editor of the *Botanical Register*, under tab. 17, *Epidendrum nutans*, which was first brought to England from the West Indies by Admiral Bligh in 1793, quaintly remarks that—

The cultivation of tropical parasites was long regarded as hopeless; it appeared a vain attempt to find substitutes for the various trees each species might affect, within the limits of a hothouse.

Nevertheless, Orchids continued to be imported, and even in those days, when a voyage to or from the West Indies occupied two months, their extraordinary tenacity of life after removal from the trees on which they were found growing was observed.

Of the treatment the plants received we can only here and there catch a glimpse from the occasional notes that appeared from time to time in the *Botanical Magazine*, which had been founded by William Curtis in 1793. Thus, under tab. 387, *Cymbidium aloifolium*, which had been received from India by Mr. Vere, of Kensington, a few years

previously, it is stated that this plant was placed in a pot of earth and plunged into the tan bed of the stove, where it grew, but did not flower. This species was also cultivated at the same by Messrs. Greenwood and Wyke, nurserymen, at Kensington, who, instead of plunging the pot into the tan, placed it on the floor of the stove; it then flowered. From other notes we gather that the usual treatment of Orchids at this period was to pot them in a mixture of loam and peat, and keep them constantly plunged in the tan bed of the stove. That they should soon succumb to such treatment seems to us but a very natural consequence; nevertheless, it seems to have been generally persisted in for many years.

The first fifteen years of the present century were overshadowed by the Napoleonic wars, which retarded every art that can only flourish in times of peace. Nevertheless, in the very throes of that tremendous struggle the Horticultural Society of London was founded, and obtained its charter of incorporation in 1809. From that time horticulture may be said to have entered into public life, and to have received an impetus it never could have had from the isolated efforts of private individuals. Orchids, till then regarded more as curiosities than as subjects to be seriously taken in hand culturally, began to come more to the front, for the Messrs. Loddiges began to cultivate them for sale in their Hackney nursery about the year 1812; and about that time, too, or a little later, Dr. Roxburgh sent from India the first *Vanda*, the first *Aerides*, and the first *Dendrobium* that were seen alive in England. In the same year, too, Messrs. Loddiges received a plant of *Oncidium bifolium* from a gentleman who brought it from Monte Video, and who informed them that "it was hung up in the cabin without earth, and continued to flower during a great part of the voyage home;" a statement that was then regarded as a traveller's tale and beyond the limits of credulity.

The "air plants," as the *Vandas*, *Aerides*, and *Saccolabiums* were then called, were a puzzle to the horticulturists of that time, and how profound was the prevailing ignorance of their true character may be judged from the following extract from the *Botanical Register* for 1817, under tab. 220, *Aerides* (*Sarcanthus*) *paniculatum*:—

Air plants possess the faculty of growing when suspended so as to be cut off from all sustenance but that derived immediately from the atmosphere. Plants of other genera of this tribe, and even of a different tribe, are endowed with a like faculty; in none, however, can such insulation be considered as the state of existence which suits them best, but merely as one they are enabled to endure, as a carp is known to do, that of being suspended out of water in a damp cellar.

To keep alive an air plant for any length of time, and to flower it, was regarded as a feat of extraordinary interest. The first who seems to have accomplished it was Mr. Fairbairn, the gardener at Claremont, who flowered *Aerides odoratum* in 1813. How he succeeded may be related in his own words:—

I put the plant when first received into a basket of old tan and Moss and hung it up in the Pine house, where it was exposed to the summer sun and to the fire-heat in winter. A tub of water was placed near it, so that I could plunge the basket six or seven times a day, or as often as I passed it.

Some years later the same excellent gardener flowered *Renanthera coccinea* for the first time in this country.

Towards the end of the second decade of this century, Sir Joseph Banks had devised one of the most successful modes of treating epiphytal Orchids then known, and which he practised in his hothouse at Isleworth:—

He placed the plants separately in light cylindrical wicker baskets or cages of suitable width, of which the framework was of long slender twigs wattled together at the bottom, the upper portion being left open that the plant might extend its growth in any direction and yet be kept steady in its station, the ends of the twigs having been tied together by the twine that suspends the whole to the woodwork of the stove. A thin layer of vegetable mould was strewed on the floor of the basket

* A paper read before the Royal Horticultural Society, June 11, 1889, by Mr. H. J. Veitch, F.L.S., F.R.H.S.

on which the rootstock was placed, and then covered slightly over with a sufficiency of Moss to shade it and preserve a due degree of moisture.

This was the first rude forerunner of our modern Orchid basket, and the first instance I find recorded of Moss being used for surfacing.

Loddiges at this time made their compost of rotten wood and Moss, with a small quantity of sand. Their Orchid stove was heated by brick-flues to as high a temperature as could be obtained by that means, and by a tan bed in the middle kept constantly moist by watering, and from which a steamy evaporation was rising at all times without any ventilation from without. This method was, of course, imitated by probably all cultivators. To these hot steamy places Orchids were consigned as soon as received, and into which, it was occasionally remarked, it was as dangerous to health and comfort to enter as it was into the damp close jungle in which all tropical Orchids were then supposed to have their home.

The want of success that attended the preservation of the plants in such places for any length of time was supposed to be due to some peculiar difficulty in their cultivation, and it was resolved that an attempt should be made in the garden of the Horticultural Society to overcome it. A stove was accordingly set apart for their exclusive culture, and when subsequently Mr. (afterwards Dr.) John Lindley was appointed assistant secretary to the society, the chief direction of it fell into his hands. "The first experiments were unsuccessful; the plants were lost as quickly as they were received." This led Lindley to inquire more closely into the conditions under which Orchids grow in their native countries, and which if accurately ascertained, would, he believed, supply data for a more successful cultivation of them. The results of his inquiry, and the inferences he drew from them, are contained in a paper which he read before the society in May, 1830. It is evident from this paper that the information he obtained was far too restricted, and held good only for a limited area; hence from such imperfect premises the conclusions could scarcely be otherwise than fallacious.

For example, Mr. William Harrison, a merchant residing at Rio de Janeiro, and who for some years previously had sent many fine Orchids to his brothers at Liverpool, informed him that in Brazil "they exclusively occupy damp woods and rich valleys among vegetation of a most luxuriant description by which they are embowered." The word *exclusively* was unfortunate, for we now know that most of the finest of the Brazilian Cattleyas and Lælias occur at considerable elevations, and often in exposed situations. And Dr. Wallich, to whom we owe the first introduction of many fine Dendrobies, told him that "In Nepaul, the thicker the forest, the more shady the trees, the richer and blacker the natural soil, the more profuse are the Orchids." From such data Lindley concluded that high temperature, deep shade, and excessive humidity are the conditions essential to the well-being of the plants, and he framed his cultural recommendations accordingly, including among them good drainage for the plants, which appears hitherto to have been generally neglected, but making no mention of ventilation.

So predominant had Lindley's influence at that time become in all matters pertaining to Orchids, whether as the chief botanical authority on them, or from the position he held in the society, that the unhealthy regime of cultural treatment approved by him became, as it were, the only orthodox one, and was generally persisted in in all its essential points for upwards of thirty years after the publication of the paper just now mentioned, so that when thirteen years later Mr. Bateman formulated a course of cultural treatment for tropical Orchids in the introduction to his "Orchidaceæ of Mexico and Guatemala," it differed but little from Dr. Lindley's recommendations, except the important direction to give the plants a season of rest. It is, however, only just to the memory of Dr. Lindley to add that, when later, as more correct information came to hand respecting the habitats of Orchids

and their environment *in situ*, he was one of the first to note the fact, and to give cultivators a friendly warning—thus, in the *Botanical Register* for 1835, under tab. 1697 (*Oncidium ampliatum*), we find the following remarks:—

It is well known that the most considerable part of the epiphytal Orchids is found in the greatest vigour in damp, sultry woods in tropical countries, and accordingly we endeavour, in our artificial cultivation, to form an atmosphere for them as nearly as possible that which they would naturally breathe in such stations. That this is attended with very great success is obvious from the numerous splendid specimens which are from time to time appearing in various collections. But it is sufficiently evident that, although this kind of treatment is admirably suited to a considerable number, there are others that grow most unwillingly, or scarcely survive, under such circumstances. If a great majority of epiphytal Orchids swarm in damp tropical forests, there is a considerable minority which live in an entirely different climate.

And during his long editorship of the *Gardeners' Chronicle* he constantly published such items of information as came to hand that he believed would afford useful hints to cultivators.

But what were the splendid specimens he speaks of? Chiefly Brazilian Maxillarias, West Indian Epidendra, Cataseta, Mormodes, and the like; not the grand Cattleyas, elegant Odontoglots, and brilliant Masdevallias of our time; for such of these as were then imported were doomed to certain destruction in the hot, steamy, unventilated stoves to which they were consigned on their arrival in England, and to the temperature of which they were as great strangers as to our severest winter frosts. And thus perished, within a few months, most of the earliest introduced Cattleyas, Lælias, Odontoglots, and Oncids, but not without a protest from men who had seen them and other subtropical Orchids in their native wilds. So early as 1835 Allan Cunningham reported to Dr. Lindley how different were the conditions under which Australian Orchids grew in their native country from those to which they were subjected in the hothouses of England, and that they should soon perish in them seemed to him but a very natural consequence. Then followed Gibson, who had collected Orchids on the Khasya Hills for the Duke of Devonshire, Gardner on the Organ Mountains, William Lobb on the Peruvian Andes, Mr. Ure Skinner on the Cordilleras of Guatemala, Mr. Motley on the mountains of Java. These, one and all, gave utterance to monitory warnings against the folly of subjecting Orchids which naturally grew in a temperate climate to the stifling heat of an Indian jungle. In fact, it was high time that such warnings should be given, for, as private collections were being formed and multiplied, and as high prices were being paid for the choicer kinds, epiphytal Orchids were poured into the country in a continually increasing stream, only too often to tantalise the purchasers with a sight of their lovely flowers and curious forms, and then to languish and die. For more than half a century England was, as Sir Joseph Hooker once observed, "the grave of tropical Orchids."

But a change of system was at length approaching, not brought about so much by the remonstrance of the travellers just mentioned as by the intelligence and sagacity of a few practical gardeners on whom had been laid the responsibility of cultivating the costly collections of their employers. One of the first of these was Joseph Cooper, gardener to Earl Fitzwilliam at Wentworth. Dr. (afterwards Sir William) Hooker, who visited the Orchid house at Wentworth in 1835, was surprised at the degree of success with which the plants were cultivated there, and adds:—

I must confess that the sight of this collection, whether the vigorous growth and beauty of the foliage, or the number of splendid specimens blooming at one time, be considered, far exceeded my warmest anticipations. (*Botanical Magazine*, sub tab. 3395.)

Cooper's chief deviations from the established practice consisted in a lower mean temperature and the admission of fresh air into the house. A still bolder innovation was adopted shortly afterwards by Paxton at Chatsworth, which caused as

much surprise to Dr. Lindley as Cooper's treatment had to Dr. Hooker. Under tab. 5 (*Stanhopea quadricornis*), in the *Botanical Register* for 1838, Dr. Lindley writes:—

The success with which epiphytes are cultivated by Mr. Paxton is wonderful, and the climate in which this is effected, instead of being so hot and damp that the plants can only be seen with as much peril as if one had to visit them in an Indian jungle, is as mild and delightful as that of Madeira.

The salient points of Paxton's treatment may be thus summarised—a lower temperature with a purer atmosphere; an improved method of potting with especial regard to efficient drainage; the maintaining of a moist atmosphere by occasionally watering the paths and stages of the house, and greater attention to root development. We here see an approach to the cultural routine of the present day; but twenty years had yet to elapse before the prevailing notions respecting Orchid culture finally gave way.

Close upon Paxton followed Donald Beaton, who for a few years had charge of Mr. Harris's collection of Orchids at Kingsbury. Beaton insisted upon more attention being paid than hitherto to the climatic conditions under which Orchids grow at high altitudes within the tropics, and the consequent necessity of adapting their cultural treatment accordingly. In proof of his assertions he sent to Sir William Hooker, who characterised Beaton "as one of the ablest and most scientific gardeners in this country," the details of his successful management of a consignment of Orchids his employer had received from Mexico, and which had been collected by Galeotti at 7500–9000 feet elevation. These details are published in the *Botanical Magazine* for 1841, under tab. 3804 (*Lælia anceps*).

Long, however, before the period at which I have now arrived, a revolution had been slowly, but surely effected which had an enormous influence on the cultivation of plants under glass, and contributed in no small degree to the improvement in Orchid culture that subsequently followed. This was the heating of glasshouses by means of hot-water pipes, which were first used for this purpose on a small scale by Mr. Anthony Bacon at Aberaman, in Glamorganshire, and afterwards by the same gentleman at Elcot, near Newbury. The inventor of the process is said to have been a Mr. Atkinson. The change from the brick flue with the tan bed to heating by hot water was nothing less than the substitution of the power of regulating the equality of the temperature for too great inequality; the obtaining of almost perfect control over the heating power, with a great diminution of the labour of attending to the fires, in the place of a very imperfect control with unremitting attention day and night; the admission of fresh warmed air in lieu of no ventilation at all, to say nothing of the smoke and noxious vapours that were constantly escaping through the cracks and fissures of the flue.

Such a combination of circumstances could scarcely fail sooner or later to bring about a change in the cultural methods that had been in vogue so long—a change that was to result not only in a more rational treatment of Orchids coming from high altitudes, but also in a modification of that applied to purely tropical kinds. And so it happened; but the change was so slow and so gradual in taking place, that, looking back upon the state of Orchid culture forty years ago, and upon what we are now accustomed to see daily, one can scarcely suppress a feeling of astonishment that its history should present to us the phase it does. During the twenty years that elapsed between 1840 and 1860, that is to say, from about the time that Mr. Barker, of Birmingham, sent Ross to Mexico, and when Linden began to make known to science and to horticulture the surprising wealth of Cattleyas and Odontoglots inhabiting the Cordilleras of New Granada—these plants perished under the barbarous treatment they received in the hothouses of this country almost as fast as they were imported. To such an extent were the losses felt, that Lindley, in a remarkable article published in the *Gardeners' Chronicle* towards the end of 1859,

pronounced their treatment "a deplorable failure," and which Mr. Bateman also some years later characterised as "incredible folly." But the spell which had held Orchid culture in thralldom for half a century was at length broken, and with the despatch of Weir by the Horticultural Society of London; of Blunt, by Messrs. Low and Co., of Clapton; and of Schlim, by M. Linden, of Brussels, to collect Cattleyas and Odontoglossos in New Granada, was inaugurated a new era in Orchid culture.

I have now arrived at an epoch within the memory of most living cultivators, and which may not be inaptly regarded as the commencement of the period of modern Orchid culture. Into the details of the practice of the present time it is not my purpose to enter; it is sufficient to note that among the most obvious improvements of recent times must be included—larger and more airy structures with separate compartments for different climates (for large collections even separate houses); a lower average temperature; the admission of more light and air, and a better system of heating, shading, and ventilation. Of the advantages that have accrued from these improvements we have innumerable proofs; but shall we regard our present Orchid culture, so far as ourselves are concerned, as practically perfect, and, resting satisfied with our achievements, leave to our successors the task of making a further advance if they can? Such a course is surely unworthy of our calling and of ourselves. Let us rather bring to the front some of the defects that remain and try to discover a remedy for them. To cite instances: How many can yet boast of growing successfully for half a dozen consecutive years such Orchids as *Cattleya citrina*, *Lælia albida*, *L. majalis*, *L. autumnalis*, *Epidendrum vitellinum*, *E. nemorale*, and others from the Mexican highlands? Who has yet cultivated the *Barkerias* and the group of Brazilian *Oncids* represented by *Oncidium crispum*, *O. Forbesi*, *O. Marshallianum*, *O. sarcodes*, *O. varicosum* and their allies for any length of time, and has not had to deplore the gradual decline of the plants till they died outright? How is it that such fine *Dendrobies* as *Dendrobium formosum*, *D. Bensoniæ*, *D. MacCarthiae*, *D. Parishii*, *D. bigibbum*, and others are still refractory subjects? That the noble group of *Zygopetalæ* known as *Bolleas*, *Huntleyas*, *Pescatoreas*, &c., refuse to thrive for any length of time in our houses? And why, moreover, are we still obliged to regard as difficult plants to cultivate such fine Orchids as *Cattleya Aclandiae*, *C. superba*, *Chysis bracteensis*, *Colax jugosus*, *Grammatophyllum Ellisi*, *Diacrium bicornutum*, and others that can be named? Doubtless the impossibility of exactly, or even approximately imitating in our houses the climatic conditions under which these Orchids grow in their native countries, together with our still imperfect acquaintance with their surroundings *in situ*, has much to do with the failure to cultivate them satisfactorily. But ought we to be content with such crude empiricisms as hanging them up first in one place, then in another, then in a third, and finally leaving them to their fate?

I invite discussion on these points.

There is another subject to be mooted, one that has an important bearing on Orchid culture in the immediate future. The large and constantly increasing number of Orchid collections in this country, as well as in America and on the continent of Europe, has called into existence a class of gardeners whose sole occupation is the cultivation of Orchids, than which no branch of horticulture exacts a greater amount of intelligence, of careful and accurate observation, with ability to collate and to compare the facts observed, and to deduce practical conclusions from them. The Orchid gardeners of the present day unquestionably possess intelligence; they have also within their reach educational advantages to which their predecessors were strangers, as to them Educational Codes and School Boards were unknown. The simplest truths are often slow in making their way, and the history of Orchid culture bears painful testimony to this fact as regards the horticultural mind. Will it be

so in the immediate future as it was in the past? Will the generality of Orchid growers go on in the same groove year after year, performing mechanically rather than intelligently the routine they have learned, and thence perpetuate indefinitely the culture now practised with all its excellences and with all its defects, as their predecessors did that which they had learned till the force of circumstances compelled them to alter it? Seeing how greatly Orchid culture was retarded from geographical and other important details being disregarded by the Orchid gardeners of the past, will those of to-day still show the same indifference to an elementary knowledge of so important a subject when high-class text books are within their reach? Will they show too the same indifference to correct nomenclature, that they cannot in many instances be relied upon for the right names of the plants they cultivate? The consideration of such questions as these certainly comes within the scope of the Royal Horticultural Society, and let us hope that occasional discussions upon them may lead to useful results.

Masdevallia ignea Massangeana.—"J.D.A." sends flowers of this charming variety of *M. ignea*. The flowers are 2 inches across, and the colour is an intense deep orange-scarlet, veined with a deeper hue, the deflexed upper sepal being of lighter orange. Like all this section, the petals and the lip are quite hidden. The plants enjoy the very coolest position.

Oncidium Jonesianum.—This plant is now flowering well both with Mr. Horsman and Mr. Bonny. To the first named we are indebted for its first introduction, and very beautiful it is. The plant has obtained a bad name through not growing freely, but this comes about through being treated too cool; the best style of growing it is in Mr. Tautz's garden at Shepherd's Bush, where it is grown in the East Indian house.

Aerides mitratum.—This is a rare species, and one that I have not seen flowering for some years. It is now in bloom in Mr. Bonny's nursery at Swanley, and has long, slender, terete leaves, and the flowers are produced in erect racemes; these are many-flowered and sweet-scented, the sepals and petals waxy-white, and the lip bright rose-purple. It comes from Moulmein and likes warmth, and is curious as being one of the few species of this genus which has terete leaves.—W. H. G.

Lælia elegans Mossiæ.—A flower of a most superb form of this plant comes from Mr. Smith, gardener to Mr. Moss, Weston Grove, Southampton. It measures 7 inches across, the sepals and petals being of an intense rich purple throughout, freckled a little at the tips with crimson. Lip deep crimson-lake, this colour being continued round the side lobes. It is one of the very finest coloured varieties of *elegans* I have ever seen.—W. H. G.

Cypripedium Godefroyæ.—This is a charming species which is now in great beauty in various gardens where these plants are favourites. It is a plant for which we are indebted to M. Godefroy-Lebeuf, of Paris, and he most worthily named it in honour of Mme. Godefroy. It is a dwarf-growing plant belonging to the niveum group, but a much freer plant in its habit of growth, with larger flowers, which are white, profusely spotted with chocolate; it likes plenty of heat, and limestone in the soil.

Dendrobium bigibbum.—I have just been shown the finest variety by far I have ever seen of this beautiful species. The spikes were long and the flowers round and full, of a good deep colour, and fully twice the size of those of any form I have seen previously. This is not due to extra strong growth, for the plants, although healthy, were not strong. It is evidently a local form, and it should be again sought for in this same locality, for it is a remarkably fine variety. *D. bigibbum* requires strong sunlight and moisture.—W. H. G.

Pescatorea Lehmanni.—"P. J. W." sends me a flower of this plant for name, and a very grand and charming kind it is. I am glad to see this species and hope the family will again become popular, for they really deserve every attention from Orchid growers. Naturally they grow upon trees in very moist places, and as they have no pseudobulbs care must be taken through the winter months that they do not become dry, although of course

during that season much less water is necessary. The flowers are produced soon after growth is finished, several proceeding from one growth. The scape is much shorter than the leaves, and bears a single flower which is round and full, measuring $3\frac{1}{2}$ inches across in the specimen before me; the ground is white suffused with light purple and ribbed with purple of a deeper hue; lip deep mauve-purple, covered with purple hairs, with a ridge of brown at the base. I have seen these plants grown in the East Indian house, and also in the cool house, but I have seen them grown best in a house intermediate between the latter and the *Cattleya* house, and this was with Mr. Salter when he had charge of the celebrated collection formed by the late Mr. Southgate at Streatham.—W. H. G.

FERNS.

W. H. GOWER.

DANÆAS.

THIS is a curious and remarkable genus of Ferns, one species of which, viz., *D. alata*, was sent me a short time ago for a name by "J. W." It is now a long time since I saw any of the *Danæas* growing, and they appear to be most plentiful in the islands of the West Indian group, some also being found in South America, and they are useless for anything but stove ornaments. They have pinnate fronds, these rising from between short stipuliform growths, and the stems in most of the species have one or more gouty joints; the fertile fronds are also pinnate, but contracted, and the sori are very remarkable; they occupy the whole length of the veins, and are so crowded together as to cover the whole of the under sides of the fronds. The finest examples of these plants which I ever saw were gathered in Jamaica by a captain in the 5th West India Regiment, who had a great love for Ferns, although without much knowledge of them, and one species, *D. nodosa*, was extremely fine and handsome, the fronds 2 feet long, with broadly lanceolate pinnæ, these being opposite, some 9 inches long, and serrated at the extreme points, bright light green, and with swollen nodes at the base; the fertile fronds similar, but the pinnæ much narrower and wholly covered with the sori. *D. alata* is a similar plant, with a narrow wing on the main stem connecting the pinnæ. I have also received from the island of Martinique a curious plant, which I cannot but think is a *Danæa*, in which the lower pinnæ are pinnate, and some of the upper ones furcate and trifurcate, which give it a very pretty appearance, and I should imagine it would be an interesting plant could we get it in a growing state in this country. There are a few other species known, and I have little doubt more undiscovered. How to grow them is therefore the great desiderata. That they love an abundance of water is certain, but it is usually given them to stand in and allowed to become green and decomposed. Into this the roots refuse to grow and they die, and plants as a result have a miserable appearance. This has been the conditions under which *Danæas* have been presented to the public in England, and it is no wonder that the Fern growers have become disgusted with them. The plants should be potted in fair sized pots, which should be well drained, and the soil should be good turfy light loam pressed down firmly. They should be kept well supplied with water, and may be stood in pans of water, but this should not be allowed to remain about them more than a single day. It may then be emptied away, the plants watered thoroughly, and they should stand without water about their roots for a day. Treated in this way I have had *Danæas* in very good condition, but I

must admit never so good as in the specimens noted above. This genus, I think, deserves the attention of Fern growers, and will repay them for any extra labour by their distinct characters and novel features, which are certainly distinct from the common run of Ferns.

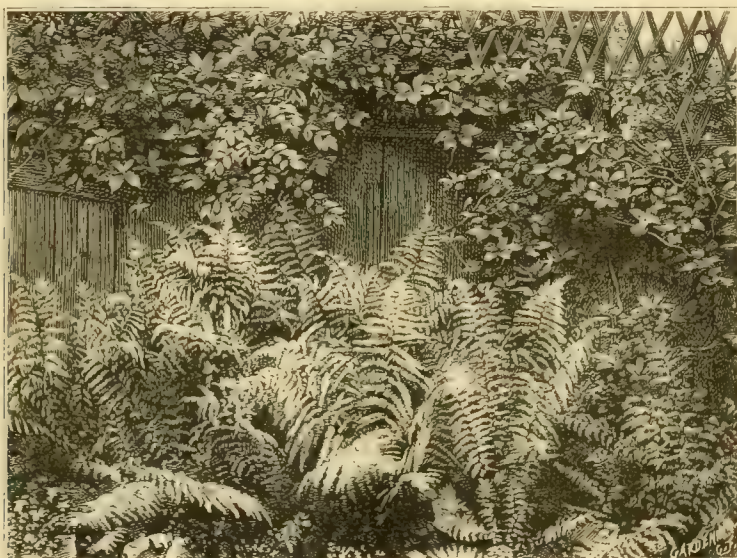
HARDY FERNS IN LONDON GARDENS.

A PROMINENT feature of many small, shady London gardens and areas in summer is the abundance of native Ferns, principally of the Male Fern (*Lastrea Filix-mas*), which they often contain, and which appear to thrive amid the dust and smoke almost as well as in the country; this fact is probably owing to their shady, cool position, and to the copious supplies of water they get. I know several streets in the heart of London, notably in Finsbury Circus, in the City, where the Male Fern thrives amazingly in the area gardens, and also in such a densely-populated neighbourhood as the Walworth Road, in the south of London, a Fern garden in this locality forming the subject

and a load or two of good soil, make irregular mounds here and there, and on these plant the Ferns, intermix with them a few dwarf trailing plants, keep them well watered, and they will soon produce a striking effect. T. W.

PTERIS TREMULA.

IN private establishments this species is generally considered too common to be worthy of attention, yet as a commercial plant it is one of the most popular Ferns we have, and deservedly so, too, for when well grown it forms a light and elegant specimen. It also has the recommendation of being of free growth and lasting well in a cool atmosphere. As this, like many other Ferns of rapid growth, loses much of its beauty with age, it is necessary to have a stock of young plants. Spores germinate freely enough, but they require some care in the initial stage, as the seedlings generally come up very thickly, and being soft and fleshy are liable to damp off. As soon as the small green prothallia have covered the surface of the pots they should be taken out in little patches and pricked off into pans or pots. They will require dividing again a little



Hardy Ferns in a London garden.

of the annexed illustration. One frequently hears the remark made that plants will not succeed in certain town gardens; but on inquiry, it nearly always turns out that the plants selected have not been suited to the generally shaded positions they have to occupy. Flowering plants that delight in abundant sunshine cannot be expected to thrive in the shady nooks and corners of area and other gardens. So in all such cases nothing can possibly be better than to have some of the hardy British Ferns, such as the kind before mentioned, and some of the common Hart's-tongues (*Scolopendrium vulgare*), the broad, prickly-toothed Buckler Fern (*Lastrea dilatata*), the common Polypody (*Polypodium vulgare*), and the common Prickly Shield Fern (*Polystichum Lonchitis*). When well established, it is surprising how effective even the commonest of our native Ferns are planted in the shade, and how beautiful they make an otherwise uninteresting corner look; even little borders by hard-paved yards or ground beneath large trees where nothing else will grow may be made cheerful by means of Ferns. Get together a few of the largest and roughest stones that can be obtained

later on. In case of damping making its appearance, the affected parts should be removed and a little dry sand applied. This will often prevent its spreading. The seedlings should be potted off singly as soon as they have made about two small fronds. *Pteris tremula* succeeds best in rather a cool atmosphere, and even in a young state it will do much better where there is little or no artificial heat, but it must not be exposed to a draught. Pot the plants in good open loamy soil, keeping the crowns down low enough so that the roots which start from the base of the fronds may readily take hold of the soil. Give the plants plenty of room so that the fronds may spread out and not become drawn up, as being of rapid growth they are very liable to run up weakly if a little crowded. Attend regularly to the watering, and after the pots are well filled with roots a little liquid manure may be used occasionally with good effect. With ordinary care good useful plants may be established in a very short time.

VARIETIES.—Considerable variation is found in this species as it is grown in the ordinary way, besides which there are several named varieties. In some varieties the fronds are long and rather narrow, the pinnules narrow and somewhat distant; in others the fronds are much broader, the pinnules also broader, sometimes overlapping each other.

The most useful variety is that with the broad fronds. A distinct variety of this type is that which was sent out by Messrs. Veitch and Sons some time ago, and for which a first-class certificate was awarded under the name of *P. tremula foliosa*. This has broad, spreading fronds of a light fresh green shade of colour. *P. tremula flaccida* is another very distinct variety, with rather long bright green fronds, which terminate in a long twisted elongation, the side pinnæ terminating in a similar manner. Seedlings of this variety vary considerably, while *P. tremula foliosa* comes remarkably true from spores. There are several crested varieties, of which *P. t. elegans* is one of the best. This has rather slender spreading fronds, the side pinnæ being lightly tasselled at the extremities, and the fronds terminating in rather a heavier crest. *P. t. grandiceps* is of more erect growth, whilst the fronds are much narrower in all their parts than those of the type, and terminate in a branching crest of multifid growths. The latest addition to the crested varieties is *P. t. Smithiana*, which has erect fronds, each about a foot high, and which begin to branch out from near the base, forming separate frondules, which are again branched, and terminate in a dense corymb of finely cut multifid growths. This variety was exhibited on the 13th inst. by Messrs. R. Smith and Co., of Worcester, and a first-class certificate awarded. *P. t. flaccida* and *P. t. elegans*, both of which originated with Mr. H. B. May, of Edmonton, have also obtained the same awards from the floral committee of the Royal Horticultural Society. It has been suggested that some of these crested varieties do not properly belong to *Pteris tremula*, but from careful observation I have no doubt as to their parentage. A.

PROPAGATING.

CONIFERS.—Most of the Conifers may be propagated by seeds, and this is undoubtedly the best method. It is, however, difficult to obtain good seed of some sorts, and there are others which do not come true from seeds. This applies to garden varieties, especially the variegated forms, most of which may be propagated from cuttings. Early in the autumn is the best time for putting these in. The time will depend a little on the condition of the plants, the stock of which has to be increased. The cuttings should not be taken until the summer growth is well matured and the wood firm at the base. Plants on light sandy soil in an exposed position produce the best wood for the purpose, that from plants in richer soil or in shady places being generally too sappy. I have found that the very best cuttings are those from plants grown in pots, as they do not grow so vigorously and ripen their wood earlier. The cuttings should be selected from the lateral shoots and taken off with a sharp knife, cutting hard into the stem so as to secure a firm base. A great deal depends upon making the cuttings well. Six-inch pots, which should be quite clean, well drained and filled with a compost of peat and sand in equal parts and surfaced over with clean sand, should be used. It is a good plan to wash the sand before using it for the surface. The cuttings must be made quite firm when they are put into the pots and well watered. The best position for rooting them in is one where a moderate bottom heat can be maintained and the surface kept as cool as possible; under these conditions a good deal of moisture will condense on the cuttings, and while the surface of the soil may appear moist it may be dry underneath. The propagating pit should be opened regularly every morning and the pots examined. When water is required sufficient should be given to thoroughly penetrate through the soil. If any signs of decay or damping appear they must be at once removed. The damping caused by fungus, which I have previously alluded to, is often very destructive among Conifer cuttings. I have seen instances where the cuttings have appeared quite fresh and healthy, and on examination they have been found to be blackened and dead close to the surface of the soil. It is only

by careful and regular attention that this evil can be guarded against, and when it once gets a start the only remedy is to take the cuttings out, well wash them and put them into fresh soil, and thoroughly cleanse the pit before putting them back again. A.

FRUIT GARDEN.

W. COLEMAN.

WORK IN FRUIT HOUSES.

THE ORCHARD HOUSE.

WHERE choice Pears and Plums as well as Peaches and Nectarines are grown, this house will now be invaluable to those whose out-door supplies are limited. In this case a steady succession being of more importance than gluts, late varieties should be retarded by placing the trees facing different aspects or where they will receive an abundance of air and light, whilst some few in good localities may be removed to sheltered nooks against south and west walls in the open air. In such positions it will be necessary to protect the fruit from birds by the use of nets, also to pack the pots with litter or Fern to maintain a uniform degree of moisture at the roots. Years ago when we grew pot trees rather extensively such varieties as Elruge, Napier, and the yellow-fleshed Nectarines, Bellegarde, Barrington, and the Nectarine Peaches were arranged against the east and west sides of a lofty span-roofed vinery whence they gave a long succession of the cream of the cream of the stone fruits, rich in colour and quality. These trees, it is hardly necessary for me to say, should be taken back to their glass shelter as soon as the fruit is gathered, and in the event of any of them requiring potting, not one day should be lost, as the ripening leaves make new roots, and pots well filled with these must be ensured before the trees are again excited into growth. The potting of fruit trees being so well understood, I will not enter into details, but one thing I must repeat, and that is the importance of making the balls thoroughly moist by watering or soaking before they are turned out of the pots. September potted trees should have one good soaking at once and light syringing to keep the foliage fresh until all the flower-buds are perfect. These and trees potted some weeks ago will do best under glass until they are bare of foliage, when a couple of months in the open air will give them that settled and decided rest so essential to future fertility. If last year's maiden trees in 9-inch pots have not been shifted, the flower-buds being well set, they should go into others 2 inches larger at once. Old trees, too, which require reducing also should be taken in hand. We sometimes turn them out of the pots or tubs, wash the latter, pick out a quantity of the inert soil, using a sharp-pointed iron pin for the purpose, shorten the strongest roots, and repot as soon as the original pots are quite dry. A better plan which I have practised of late is immersion of the balls in tubs of tepid water, and working out the old soil with the fingers and picks until the balls resemble mops of fibres. We then repot, using the compost in a dry state, and working the trees up and down as in ordinary planting until the roots are well divided from each other. The compost in this case is well pressed down with the hands, and finally rammed with a broad-headed rammer, room being left for a thorough soaking of water, which washes home the soil amongst the rootlets. This mode of dealing with old trees may seem severe, but really it is not so, as the new, sweet compost acts like magic upon the old and languid roots, which at once set about refurnishing with fibres capable of feeding upon the excellent food in which they are imbedded. Early Plums and Pears may require a shift into larger pots, but of two evils it is better to have medium-sized pots full of roots than large ones containing compost which is not occupied. The same may be said of Cherries, as all these varieties or species set best when pot-bound, and swell magnificent fruit provided they are properly top-dressed and fed throughout their season of activity. The last

and most untractable trees we have to manage are those planted out in elevated borders. The wood of the current year being perfect—neither too strong nor too weak—annual root-pruning is sometimes allowed to stand over. The crop the following season may be satisfactory, nay, very fine, but the roots having gained the lead, the young growths become gross and almost unmanageable. To prevent this and ensure good crops throughout a long series of years, a trench should be thrown out round each tree soon after the fruit is gathered. All strong roots, in fact, all the roots, may then be shortened back to within 3 inches of the cut of the preceding year, when, the original balls being dry, the trench may be filled with water preliminary to refilling with a compost consisting of sound calcareous loam and lime rubble. As all stone fruit trees enjoy a strong resisting staple, the compost in a dry state cannot easily be made too firm by ramming, and when all is finished the whole of these inside borders will require copious watering. Readers of the early books upon hot-house culture were advised to keep the roots dry in winter, but this advice was wrong, as drought after the leaves fall is one of the most common causes of bud-dropping. Roots, on the other hand, kept constantly moist are always progressing, and giving to the flower-buds the food so essential to perfect development.

POT VINES

intended for starting in November should now be quite ripe and resting with their roots well packed in some non-conducting material to prevent injury from drought. They do not require much water after the foliage is ripe, but the balls should not be allowed to shrink from the sides of the pots, as sometimes happens when the Vines are out of sight and left to shift for themselves. As the canes cannot be too well hardened and ripened, this part of the business should be properly performed before the leaves fall, but once they are off all excitement must cease, and the season of perfect rest must be secured by keeping the canes dry and cool. These conditions can always be produced in the house in which they are grown; but considering that the houses may require painting, most certainly cleansing, and the pits emptying, now is the time to give the Vines a short spell in the open air. A wall facing west is the best place for them, but lacking this site any other aspect save full south will answer very well, always provided the pots are well packed and the canes are secured with ties or shreds and nails. All the laterals having been removed close in to the fruiting buds, shortening back to the proper length for the present may well be delayed. If thoroughly ripe the strongest and shortest-jointed canes with prominent buds are to be preferred, but so important is perfect maturity, not only of wood and buds, but also of roots, that Vines a size or two smaller and answering the above conditions almost invariably give the most compact clusters of Grapes. Years ago pot Vine fruiterers invariably gave preference to canes of home growth, but cheap glass and plenty of it having enabled the trade to make this part of their business a speciality, superb canes can now be bought cheaper than they can be grown.

Young canes from eyes of the current year also will be ripe and fit for removal to light airy places in early vineries, or they will do equally well against brick walls. Like the preceding, they must not be allowed to feel the want of water; hence the extra importance of plunging the smaller pots in some light material which will not hold cold water in suspension. Old tan, now a scarce article, is invaluable for protecting the roots of pot Vines during the time they are in the open air, and where within reach Cocoa-nut fibre is still better. The young canes should be securely fastened up to the wall not only to prevent injury by wind, but also to give the buds the fullest benefit of absorbed and reflected sun heat.

WINTER CUCUMBERS.

Where a steady supply of fruit throughout the winter is important, the month of September must be devoted to the preparation not only of the plants, but also of the pits in which they are to be grown,

for one may as well throw away the seeds as attempt the culture of this tender exotic where the relics of filth or insects are allowed to remain. In my own practice winter Cucumbers invariably follow the second crop of Melons, not from the same plants, but from two distinct sets, and as these generally leave a legacy of spider and other abominations behind them, the first step is the removal of the soil and bed. Boiling water, quicklime, and sulphur must then be used over the brickwork. Warm soapy water will then put matters right upon the glass and paint. And moist heat from some fermenting material being so essential as an aid, indeed for a time a substitute for hot water, the tan or Oak leaves must be placed under preparation soon after the seeds are sown. No one puts out all his winter plants at once; but this fact does not prevent him from keeping a good stock of well-turned fermenting material in reserve. The same may be said of compost, which, by the way, should be dry, free from common worms and wireworm, and somewhat lighter than that recommended for use in summer. Light fibry turf forms the staple, but lacking this heavier soils may be corrected by the addition of rough charcoal, lime rubbish, not too fine, and possibly a little peat. In all cases a liberal dressing of soot should be used for the destruction of worms, and the compost being too poor it may be enriched by bone-dust in preference to manure. The mode of culture in pots or pits is a matter which each grower must decide upon for himself, his guide being the adaptability of the structure and the amount of fire-heat at command. In the Cucumber house proper the pits, right and left, are very narrow, not more than 2 feet in width, with hot-water pipes lying in chambers or rubble, also near the floor on either side of the centre path. Heat from these being equal to the maintenance of an air and bottom-heat of 80°, in ordinary winter weather the plants may be turned out upon small conical hills, to which additions can be made as the roots extend. Broader pits in larger houses once used for Pines are best adapted to pot culture, as there is plenty of room for a good body of fermenting material, which should be introduced some little time before the plants are ready for turning out. The pots, of course, will be fixed first, not too near the drying influence of the top-heat pipes, and in the event of the pits being too deep, they must be elevated on pedestals formed of dry bricks or glazed drain pipes capped with sods of fibry turf for catching the roots and filtering the liquid on its way downwards. Although the plants will travel any reasonable distance from the pots to the trellis, they should not be started much below the ground ventilating line; indeed, the higher they are kept the deeper will be the body of fermenting material placed about them. When in position, each pot must be well crocked and filled to within a few inches of the rim with the roughest of the compost, and when thoroughly warm the young plants may be turned out, staked, and watered. In the smaller pit, minus fermenting material, fire-heat must be applied at once, even in September, as the proper temperature cannot be maintained without it; but in the larger structure, the bottom-heat from fermenting leaves will render the stoker's services a sinecure certainly for some time to come, and the plants, by the colour and texture of their foliage, will show that they are in a moist atmosphere which just suits them.

MELONS.

As usual, the majority of the Melons met with at shows have been most decidedly inferior, and so they will continue until more bottom-heat is applied to the roots from the time the fruits finish swelling until they begin to change for ripening. Late fruits now in various stages of growth should be fairly well fed until they have attained full size, when pure water only, a very important factor in the production of quality, must be given in moderate quantity. Direct syringing also must be discontinued, that is, if it has been practised, as moisture from damping the surface of the bed, floors, and walls will be found ample. Under this treatment the fruit will not exceed the normal size, but it will be sound and deep in the flesh, with a small

cavity. An overfed Melon is never good, neither is it for ordinary use half so acceptable as two small ones. A moderate supply of air should be admitted early on fine mornings, and gradually increased as the day temperature rises, when gentle warmth on the top and bottom-heat pipes will expel superfluous moisture and prevent sudden depressions.

WORK AMONGST HARDY FRUITS.

The ingathering of Apples and Pears will now require daily attention. Some few samples of the latter are fine, as they should be, considering the small quantity; but Apples of some sorts, notably the Suffield section, are rough, distorted, and out of character. A correspondent, well known in the exhibition tent, thinks Apples still clinging to the trees must have set properly, otherwise they would have fallen in their infancy, but careful examination will prove that the majority of the small distorted fruits are carrying one germless pip, and not a few are seedless. Seedless Grapes do not drop, neither do they swell properly, and the splitting of stones in stone fruits which attain full size and ripen is set down to imperfect fertilisation. A thoroughly dry day should always be chosen for the gathering of all kinds of fruits, and when taken in, they should be carefully sized and sorted, otherwise imperfect samples, which cannot be expected to keep, will soon rot and destroy the few good ones.

Peach trees, from which the fruit has been gathered, may be pruned, regulated, and washed with pure water to prevent the spread of spider. Other trees which bear fruit on the shoots of the preceding year may be treated in the same way, and root-lifting forming a heavy task, preparations must be made for carrying out the whole of the work in October. The planting of young trees, especially those of home growth, may follow close upon the heels of root-pruning; indeed in many gardens they will be quite fit for removal by the end of September. Nurserymen's trees may require a little more time, especially where they have to travel long distances and some days must elapse before they can be replanted. This delay, however, will not prevent an early selection, the trenching, or other preparation of the ground, and other work which will facilitate replanting upon arrival. All home-grown trees should be prepared for lifting by copious watering, and being more or less in full leaf, the roots should be settled home by the application of more water.

Having for some time past laid great stress upon the importance of checking gross growth by means of root-lifting and root-pruning, and knowing how ruthlessly this work, when entrusted to unskilled hands, is performed, I feel that I must protect myself and my amateur friends by reminding them that it is possible to go too far with these operations. In my time I have seen handsome young trees completely ruined by the clumsy removal of nearly all their roots, when careful lifting and relaying near the surface would have rendered them fruitful and profitable for years afterwards. Young trees, indeed, upon the modern dwarfing stocks rarely require lifting more than once, and this operation is performed more for the purpose of raising the roots from a downward to a horizontal position than to check, much less destroy, their fruit-bearing and fruit-maturing power in dry seasons. With these remarks, I hope to warn those who trust to my theory and the ordinary workman's practice before it is too late, and to remind them that they should make themselves thoroughly acquainted with the why, the wherefore, and every detail, also that if possible they should superintend this important and interesting work personally. In many instances renovation by the application of top-dressing may be more appropriate than root-pruning, and this work, I may say, should be performed in the following manner: Having loosened all inert surface soil by pointing up with a fork, rake it off, see that the bulk of the ball with surface-roots exposed is not dry, and if it is, thoroughly water before covering up again. Then without loss of time replace with the best compost at command, including good maiden loam, burnt refuse, burnt clay saturated some time pre-

vously with liquid manure, wood ashes (a most excellent stimulant), a little soot, and a sprinkling of bone-dust. Make very firm by beating or even treading, and cover up with fresh stable litter for the winter. No one uses all the materials I have just enumerated, but all of them are suitable, and may be used with excellent effect upon debilitated fruit trees generally.

Orchard planting cannot well be performed until picking is over and the leaves are falling. But here again the work may be facilitated by the preparation of the compost and keeping it dry until wanted. The trees being mostly upon free stocks, strong ordinary soils, enriched by road scrapings and sweepings, burnt refuse and the like—anything, in fact, fresh and fertile may be used, the earlier in October and not later than November the better. Drainage, of course, is the first operation, as planting upon good or bad land, rendered cold by stagnant water, is simply ruinous. Half the orchards in the United Kingdom have been ruined by bad drainage, and the sooner they are swept away the better. A moderate supply of second or third-rate fruit, no doubt, is better than none; but taken over a long series of years, this climate is favourable to the growth of Apples superior to any yet introduced if growers will only go the right way about preparation of the soil, selection of stocks and sorts, and intelligent cultivation. Mr. Gladstone may spur up the nation by humorous remarks to the cottagers at Hawarden, but the waning generation of farmers will never get out of the rut, and young ones who would learn should visit the gardens so intelligently managed by growers for market in the home and some other counties in England. The hope that Wheat farmers who plough 4 inches deep can be converted to trenching 2 feet deep in a few cases may be realised, but in nine instances out of ten these men who have assiduously buried the wealth of the land beneath the hard plough pan would vote their instructors mad; and how many, it might be interesting to learn, know anything about the Paradise, the Doucin, and the Quince stocks from which markets in this reputed year of failure are supplied with plenty. A gardener may make a good farmer, but very few farmers make good fruit growers, and yet sensationalists lead or try to lead them astray by asserting that they may realise fabulous profits. Where there is a will there is a way; let agricultural and horticultural societies and chambers composed of the owners of the land combine in forming practical schools for the rising generation, as the assumption that anyone can make fruit growing on unsuitable soils and sites pay is about as feasible as setting a blacksmith to watchmaking.

Fasciated Vine rods.—I should be obliged if you would tell me what is the reason that my young two-year-old planted Vines are making flat mean rods, especially Black Hamburg. The house is a lean-to, and there is a well-drained border made up of turf, charcoal, bone-meal, horn shavings, lime rubbish, &c. Some of the Vines when I bought them were one year and some two years old, and planted them at the end of April, 1888. The house was not ready sooner, and the young canes just now cover the whole of the roof and ripen splendidly. I gave a layer of cow manure on the surface of the border inside, and sometimes give a little Cross's Vine and plant manure, sometimes a little of Thomson's Vine and plant manure, and soot-water, but not much. I should be thankful if you could tell me why it is that Vines make such spiral rods.—A. G., *Perth*.

* * When Vines are too deeply planted in cold, crude, over-rich soil, they sometimes produce semiblack or imperfect buds from which fasciated growths proceed the following season, but without seeing the shoots in question, it is impossible to say whether these broke wrong, or have become deformed by a too free use of additional stimulants this season. In either case there exists but little doubt that the Vines have been half poisoned by a multiplicity of powerful manures so recklessly and needlessly given them. Had "Correspondent" con-

finned himself to his turf, bones, charcoal, and lime rubble, his Vines planted in April, 1888, might have been satisfactory enough, but these good and suitable materials composed not more than half the *menu*, as we find horn shavings (a dangerous article), Cross's manure, whatever that may be, Thomson's well-known Vine manure, cow manure, and soot water going to the support of infants eighteen months old, and now bearing small maiden bunches. If used separately and moderately the whole of these materials are invaluable to the Grape grower, but when thrown together and treated occasionally to soot water, the wonder is how the poor Vines have survived the ordeal. The question as to whether these flat canes will produce flat shoots and bunches may be answered in the affirmative, that is, unless "Correspondent" reduces the supplies, and then the Vines will require one or two years to right themselves. In the worst case which ever came under my notice, young rods trained up from an old and previously healthy Vine buried beneath the surface of a new border commenced producing fasciated shoots which turned completely round until the points touched the spurs from which they emanated. All the bunches were more or less fasciated and distorted, and although the best were thinned, they continued useless until the rods were detached from the parent and the roots were raised to the surface. "Correspondent" has overlooked the fact that the border may be in fault, but knowing that the wood and fruit cannot be good so long as the border is too full of strong food, I must volunteer a remedy. When the wood is ripe and the leaves begin to show signs of changing colour, remove the cow manure and fork down the extremities of the border, working inwards towards the stems to ascertain if the roots have gone down into the drainage. If this be the case, raise and relay them, using a little fresh soil minus artificial and animal manure of any kind. Cover the surface with fresh stable litter, give plenty of water when needful, avoiding the use of stimulants certainly until after the next crop of fruit is set, thinned, and swelling freely. In dealing with the flat canes at the winter pruning get rid of the worst, or if the Vines are closely planted reduce their number, and train those retained upon the extension principle, laying in young wood wherever there is room for the full development of foliage.—W. C.

Early Apples at the Taunton Flower Show.—Beauty of Kent Apple, distributed a few years since by Messrs. Geo. Cooling and Son, of Bath, was in fine character at the Taunton Flower Show; large in size for the variety, handsome, of a bright red colour, with streaks and spots of white; perfect in shape, and with a brisk, sweet flavour. I cannot help thinking this will make a very useful market variety when it becomes better known, for it is a heavy and certain cropper, and its handsome appearance is all in its favour. I believe it was a chance seedling which came up in a market garden. I think that a dish of the Red or Devonshire Quarrenden was placed before it in the class for a dish of dessert Apples, but it was a remarkably good dish of fruit, large, well finished and beautifully coloured. In some districts Devon-hire Quarrenden does well, and it seems best suited for the western and southern coasts of the country, where it is warm and there is a light rich soil. I can remember when I was a schoolboy it was largely grown in the neighbourhood of Southampton. In one market garden there were a considerable number of old standard trees, and they seemed to always bear a crop of very fine fruit, better indeed than I think I have seen since. It was the representative early Apple in that particular district. The Red Astrachan and the Irish Peach were also well shown; the former had taken on a very bright colour. Like the Quarrenden, this appears to do best on a warm light soil. I think it is one of the best early exhibition Apples grown, but those who want fruit of fine character should thin them out. The Irish Peach is a small, but excellent early sort, and it is said to be most piquant and possessing a delicious aromatic flavour when gathered from the tree. But some careful pruning is necessary, as it bears best at the points of the shoots, and a careless pruner might risk the chance of a crop. The

Juneating was also shown, but it could not compare with the varieties already named.—R. D.

A new Fig.—Messrs. Veitch and Sons, Chelsea, had at the recent Crystal Palace show a distinctly new Fig of compact, free-fruited habit, and carrying medium-sized foliage, and it seems to be exceptionally suited for pot and bush modes of culture. It is the best selected from a batch sent over from Spain, and has the merit of being exceptionally high flavoured. The fruits, which are profusely borne on the plants, are of medium size, when ripe of a clean greenish hue rather than brown, and very smooth and handsome. It presents the appearance of being not only a good kind, but is also very tempting as a dessert fruit. To many, Figs when ripe have a dead, dull look, which is far from being pleasing. The new variety, which is named *Violette Sepor*, is altogether the reverse, as the fruits are both pretty and delicious.—A. D.

NOTES ON PEACHES.

The following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

—Peaches, with the exception of *Alexander Noblesse*, are scarcer here than for many years past. After testing many varieties on the open walls for the last thirteen years I find the variety named to be the hardiest and most productive of any I have grown. The fruit is of fairly good flavour, though I must admit wanting in colour compared with such as *Royal George* or *Noblesse*. The two latter varieties here at present require much attention to keep mildew in check. *Alexander Noblesse*, though growing on the same wall, never suffers in the least. The Peaches here are either budded or grafted on the Plum stock. I have some small trees budded on stocks raised from the white *Magnum Bonum* Plum, and on which the Peach seems to thrive. I lift my Peaches every three years (by annually lifting one-third), and as far as experience serves me, I am of the opinion that the latter operation, not only with Peaches, but with most fruit (especially those on walls) is one of the chief secrets of success. I believe the inferior flavour so often met with in market Peaches is due to a great extent to the long time the Peaches are gathered, and in many cases their close confinement during transit.—THOS. S. CANNING, *Aldenham Park, Bridgnorth, Salop.*

—Our best sorts of Peaches are *Royal George*, *Alexandra Noblesse*, *Stirling Castle*, *Dagmar*, *Grosse Mignonne*, *Belle Beauce*, *Red Magdalen*, *Bellegarde*, *A Bec*, *Early Alfred*, *Early Silver*, and *Nectarine Peach*. The cause of inferior flavour I attribute to the fruit being gathered before being perfectly ripe. A great many sorts are grown for market which are more pleasing to the eye than the taste, such as *Goshawk*, *Early Crawford*, and *Lord Palmerston*, which I consider are not worth growing. The Plum stock is the best, and I have had no experience with any other. Trees always do well on it and canker very little. Outside culture in this district is seldom met with. In these gardens we have a south wall planted and trees do fairly well, but we suffer a great deal from blister on the foliage, and this with fixed protection during March, April, and May. Our garden is in an exposed position, this, I conclude, being the

cause of blistering from cold winds, but taking one season with the other we manage to get fair returns for labour.—J. H. ROSE, *Lockinge, Wantage, Herts.*

—In my opinion the best Peaches for flavour are *Royal George*, *Noblesse*, and *Dymond*; *Nectarines*, *Violette Hâtive*, *Lord Napier*, and *Pineapple*. None of the new kinds that I am acquainted with are equal to the above, and many of them are worthless as regards flavour. In most cases the inferior flavour found in market Peaches is due to the fruit being picked and packed before ripe. I think the most reliable stock for the Peach is the *St. Julien*, and the most unsatisfactory the *Mussel*. In the gardens here the outside culture of the Peach is very uncertain; consequently we grow them largely under glass. A short distance from here, however, in some cases they do remarkably well—EDWIN BECKETT, *Aldenham House, Elstree, Herts.*

—Peaches and Nectarines are full crops, thanks to the washings given the trees on every mild day. With regard to your queries, the best for flavour are *Alexander Noblesse*, *Bellegarde*, and *Peach Nectarine*. Of new kinds, the only really good one for flavour is the *Alexander*. The most common cause of want of flavour in Peaches is over-watering. The trees do equally well here on their own and Plum stocks. In this district outdoor culture is successful, a fact that I think is due more to the character of the soil—deep light loam with a gravel and sand subsoil—than to climate.—W. WILDSMITH, *Heckfield, Hants.*

—The best flavoured Peaches are *Alexander* as an early variety; *Royal George* has no superior; *A Bec* and *Early Grosse Mignonne* are good, also *Bellegarde*, and for a late one, *Violette Hâtive*. The cause of inferior flavour is the conditions under which the trees are grown, viz., absence of light, being grown far from glass, and the fruit shaded probably by leaves, with (still more important) hot, close atmosphere, instead of more time and gentle currents of warm, dry air, with exposure to the sun and light. Generally, the *Mussel* Plum, but the stock does not long keep pace with the scion; hence the gouty excrescences so often met with, and consequent debility. Several kinds of Peaches will only succeed on certain kinds of stocks, facts not sufficiently understood. Personally, I object to all worked stocks under 3-feet stems. Outdoor culture is a success in this district. I liberally feed the roots each year, and bring them near to the surface.—W. CRUMP, *Madresfield Court, Worcester.*

—We still grow the older varieties of Peaches for flavour, and as most cultivators well know, some kinds are better suited to the position they occupy than others, and the different nature of the soils have to be taken into consideration. Such kinds as *Grosse Mignonne*, *Royal George*, *Noblesse*, *Violette Hâtive*, *Barrington*, and *Alexander Noblesse* are still our best Peaches for flavour. *Thames Bank Peach*, though rarely seen, is, I consider, a good Peach, and should be grown more extensively. Of newer kinds I prefer *Alexander*, *Waterloo*, and *Hale's Early* for early work, and as late kinds *Gladstone* and *Nectarine Peach* are good. No doubt the reason that market Peaches are often found deficient in flavour is that the fruits are gathered before they are ripe, and therefore lack the rich flavour they have when allowed to remain on the trees till quite ripe. As Peaches travel so badly, it would be impossible to allow fruit to remain to the last, as it would be ruinous to the grower. The fruit would not be presentable at the end of a journey in such a case. Much difference of opinion exists as to the best stock, and many growers have their own special stocks and know which suits their different localities best. The *Mussel*, no doubt, is one of the most useful, and for some kinds the *Brompton* is used. The Peach stock is not hardy enough in some parts of the country. The kinds named are not so liable to canker as others, and, of course, the growth of some Peaches is far more vigorous than others, and should be taken into consideration when choosing a stock. Outdoor culture in this district is generally successful

on south walls. *Hale's Early*, *Alexander*, and *Early Louise* are good, but I should not advise extensive planting of the last-named, as it is too tender for culture in the open. *Royal George*, one of our best Peaches, is so subject to mildew, that outdoor culture does not suit it, except in a very favoured position. *Princess of Wales* is a good bearer and does well in this district, though rather late, and it should be given a warm corner and the wood kept well thinned to allow it to ripen up well. We mulch our borders early and syringe daily, keeping the wood well thinned, and have very little trouble with insect pests through the summer months. I also find that too much protection when in bloom is very bad, as it encourages a weakly growth and the spread of green and black fly; with a good coping to the wall and some double fish nets ample protection will be secured when the trees are in bloom.—G. WYTHES, *Syon House Gardens, Brentford.*

—We do not grow any Peaches in the open and only a few of the standard sorts inside, such as *Noblesse*, *Alexandra Noblesse*, *Grosse Mignonne*, *Royal George*, *Barrington*, and *Early Louise*. The fruit of the last-named will keep but a very short time after it is ripe. The reason of the flavour in market Peaches being poor is because the fruits are probably gathered before they are ripe and badly packed.—THOS. DENNY, *Down House, Blandford.*

—The best Peaches for flavour outdoors are of early kinds *Hale's Early* and *Early Rivers*. The great disadvantage of this excellent flavoured Peach is that the fruit so often cracks at the stone, and for that reason I have, though reluctantly, had to discard it. Next early, *Dr. Hogg*, *Grosse Mignonne*, *Bellegarde*; later, *Nectarine Peach*, *Barrington*. The foregoing I have found to be remarkably well here, and this season I have a good average crop. I have one named *Falcon*, which I find to be of good constitution, good flavour, and of a beautiful colour. For indoors I like *Hale's Early*, though *Alexander* is much earlier; nevertheless, its extra earliness does not recoup one for the loss of flavour which is to be found in the former. *Early Louise* I find very good; also *Rivers' Early York*, *Grosse Mignonne*, *Royal George*, which must not be left out, though it is liable to mildew, *Bellegarde*, *Nectarine Peach*, *Princess of Wales*, *Barrington*. I am afraid I have given too many names, but still I have found the foregoing to be the best out of the twenty or more varieties we grow here. I have not tried all the new kinds, but the very few I have had have not struck me very much, except for earliness and colour. Causes of inferior flavour: This may arise from several, such as overcropping, hard forcing with little air, so as to get them in the market as soon as possible, and last, but not least, a lack of good drenchings of liquid manure in some shape or form to the roots in the last stages of swelling in the fruit. Of course, I take it for granted that aphids and spider are not to be found. Now I think of it, I would like to mention *Crimson Galande* as being a good Peach, of beautiful appearance, good flavour, and excellent constitution. Stock that gives the healthiest tree: Upon this one point I am as yet undecided, but later on, if you care to have my opinion, I shall be pleased to give it. There is no stock that I know of that promotes disease or canker. We seem to be very successful in this district, as we have good crops on all our trees, and that is a great deal to say, considering the wet and sunless season we had last year.—G. WOODWARD, *Barham Court, Teston.*

—We have a very good crop of Peaches and the trees are healthy. *Hale's Early* is our best early sort; some years I have gathered fruit of it in the end of July. I consider it superior to *Early Beatrice* (which is now ripe) both as a bearer and in size and quality. Our best flavoured sorts are *Dymond*, *Noblesse*, *Royal George*, *Dr. Hogg*, *Grosse Mignonne*, *Barrington*, *Bellegarde*, *Alexandra Noblesse*, *Violette Hâtive*, and *Walburton* Admirable. The reason of the want of flavour in market Peaches is because the fruits are probably gathered before they are well ripened, to avoid damage in packing and travelling. Outdoor culture in this

district is very successful, probably owing to the favourable climate. All the Peaches and Nectarines here are grown on an E.S.E. aspect, and do better than on a south aspect. The sun is quite off them by 2 p.m., when they are well washed by the hand engine in hot weather.—JOHN GARLAND, *Killerton, Exeter.*

SOCIETIES AND EXHIBITIONS.

CRYSTAL PALACE FRUIT SHOW.

SEPTEMBER 6 AND 7.

THE general impression of this autumn exhibition of garden fruits was that it was one of the finest seen at the Palace for several years. In some classes the competitions were thin, but in all the prominent sections excellent, and much of the material shown was wonderfully good. This was specially the case with Grapes, the large collections of twenty bunches and the smaller ones of ten bunches bringing some grand samples, whilst there was hardly an indifferent one in the entire lot. In some of the special Grape classes, notably in those for Gros Maroc and Alicante, the samples were in the prize lots superb. Many grand bunches were left unplaced which would in the provinces have taken prizes easily. The large collections of fruits comprising, as the best did, some two dozen of dishes of all kinds of fruits, in season, the samples were not only wonderfully good, but were staged with admirable effect. The capacity of gardeners to place not only good, but varied dessert on their employers' tables was well illustrated in these collections, and the winner of the first prize, Mr. Ward, was a frequent winner in other classes, whilst Mr. Goodacre, who ran Mr. Ward hard, was the champion in the Grape class with twenty bunches, all first rate. Gardeners who can accomplish such great effects must be good growers indeed. In the stone fruit classes Mr. H. W. Divers may be singled out as worthy of all praise for his superbly coloured and finished Peaches and Nectarines, the dishes of which were as numerous as they were fine. In the Apple and Pear classes, the introduction of house-grown fruit largely, especially in one case, that of a well-known Yorkshire gardener, opens up the question as to how far such samples should be admitted into competitions which are presumably limited to outdoor fruits. Either special classes should be allotted to glass-grown samples so that the public be not deceived, or they should be excluded from classes intended solely for outdoor fruits. That the public are deceived by the presentation of samples of this kind of deceit, in which some of the trade in their collections share, seems to be specially a reason why the method of culture should be clearly indicated.

COLLECTIONS OF FRUIT.—There were three collections in the big class for not less than twenty dishes, and nearly eighty dishes were staged, Mr. H. W. Ward, of Longford Castle, having twenty-seven; Mr. Goodacre, Elvaston, who came second, had twenty-two; and Mr. McIndoe's collection comprised twenty-eight dishes. The Grapes in each case comprised four kinds in pairs of bunches, Gros Maroc and Alnwick Seedling being Mr. Ward's blacks, and large clusters of Muscat of Alexandria and Foster's Seedling his whites. Mr. Goodacre had for blacks Madresfield Court and Alnwick Seedling, and Foster's and Muscat of Alexandria for whites. Mr. McIndoe had Gros Colman and Gros Maroc, Buckland Sweetwater, and Golden Champion, all excellent and well varied. The other dishes were made up of Pines, chiefly Smooth Cayenne and Queen, various Melons, Gold Hawk, Sea Eagle, and other Peaches, Nectarines, Apricots, Figs, Cherries, Apples, Pears, Plums, &c., all in fine form and variety. The next class for twelve dishes brought seven collections, but generally the quality, which it was expected would have been better, seemed to be inferior. Mr. Parker, of Impney, had White Muscat and Black Alicante Grapes, Blenheim Orange Melon, Black Ischia Figs, Royal George Peaches, good Nectarines, Plums, &c. Mr. Miller, of Rood Ashton, and Mr. Coomber, of Monmouth, showed excellent

samples, both including fine Muscat of Alexandria Grapes, but the former had Alicante for black, and the other Gros Maroc. Only three entries were found in the class for eight dishes, a very fair lot, the prizes going to Mr. J. Dawes, of Ledbury Park, Mr. C. J. Goldsmith, of Beckenham, and Mr. Ocock, of Havering Park. The Grapes and other fruits were very much a repetition of the kinds found in the other classes.

GRAPES.—These after the collections comprised the chief feature of the show. In the class for twenty bunches in ten kinds there were four competitors, a total entry of eighty bunches, and an immense weight of Grapes. Mr. Goodacre was a strong first in the class, having in blacks Madresfield Court, Muscat Hamburg, Lady Downe's, Gros Maroc, Alnwick Seedling, Alicante, Black Hamburg, and Mrs. Pince's Muscat; and for whites, two only, Muscat of Alexandria and Foster's Seedling. The collection from Ledbury Park, which came next, included Gros Colman, Black Morocco, rather like small Madresfields, with other kinds previously named; whilst Mr. Ward's collection, placed third, was very representative, having Mrs. Pearson, Foster's, Buckland Sweetwater, Muscat of Alexandria, and superb Golden Queen, with good blacks, although not quite up to the quality found in other lots. The class for five kinds in pairs brought six collections, Mr. Chaffin, of Bath, standing to the front with his superbly finished samples of Muscat of Alexandria, Gros Maroc, Madresfield Court, Alicante, and Alnwick Seedling. Hard thinning and finish allied to size of berry helped to win in this case.

VARIETY CLASSES.—These began with the favourite Black Hamburg, seven lots of three bunches each being staged. The best samples from Mr. Bury, Forest Hill, and Mr. Gibson, of Draycot Gardens, were fine finished clusters, but some other lots were indifferent. Mr. Chaffin had no difficulty in coming first in the Muscat of Alexandria class with superb samples. Mr. Goldsmith's bunches, if smaller, were finely berried. Some of the rest were green, but the entries were few. Gros Maroc is a very popular Grape now, but only five lots competed in the class, the best coming from Woodseat, Uttoxeter, shown by Mr. Hollingworth, large bunches, finely coloured, but the other bunches gave much finer berries, especially those from Gunton Park, shown by Mr. Allan, and from Keele Hall, sent by Mr. Wallis. There were nine stands of Madresfield Court set up, Mr. Gibson having the finest, but the bunches were not shapely, whilst the smaller bunches from Woolmer Forest, sent by Mr. Taverner, were finely berried and finished. The Alicante formed the premier class for single varieties, as the nine lots showed here were so fine, that not only were four prizes awarded, but some others well merited recognition. Mr. Chaffin, Mr. Hollingworth, and Mr. Wright, of Glewston Court, all had superb bunches, as fine, indeed, as may be seen at any show. The class for any other white Grape brought ten exhibits, Foster's Seedling taking first and second for Mr. Allan and Mr. Ward, whilst the British Fruit Growing Company scored their first success on the show table by taking the third place with very fine Trebbiano. Golden Queen and Mrs. Pearson, both good, did not find favour with the judges in this class. With any other black Grape Gros Colman seemed to be the favourite, as that huge berried variety took the several prizes. There were nine lots here also. Turning to the 12 lbs. or basket class for whites, there being seven entries, Cannon Hall Muscat, from Mr. McKay, Finchley, was placed first, the berries large and well coloured, a superbly finished sample of the Duke of Buccleuch, from Mr. McIndoe, being second, and Muscat of Alexandria third. There were eleven baskets of black Grapes, a terrible waste as thus shown, Gros Maroc coming first and third, with fine clusters of Black Hamburg in a heaped form being second. It is a pity gardeners should encourage these wasteful and useless classes by showing in them. The judging in them rarely gives satisfaction.

PEACHES.—There were sixteen dishes in the class for four kinds and twelve single dishes. Mr.

H. W. Divers, of Ketton Hall, was in fine form, his four kinds comprising Prince of Wales, Princess of Wales, Dymond, and Crimson Galande, all richly coloured. Mr. McIndoe and Mr. Goldsmith both had the brilliant coloured, but not highly flavoured Golden Eagle. Barrington, Violette Hâtive, and Stirling Castle were excellent. In the single dish class, Barrington, Crimson Galande, and Golden Eagle were the prize-winners.

NECTARINES.—Mr. Divers was again in fine form with four dishes of these, having beautiful samples of Victoria, Pine-apple, Dryden, and Spencer; Mr. McIndoe's lot comprising Elruge, Pitmaston Orange, Humboldt, and Dryden. Pine-apple was first and second in the single dish class, with Rivers' Orange third. Only one entry was found in the class for six Peaches and six Nectarines, Mr. Divers showing fine fruits of kinds already named.

MELONS.—No less than twenty-four fruits were staged in the class for white and green flesh, Mr. Wright being the fortunate first with Golden Perfection, richly flavoured; Nutting's Green Flesh and Dell's Hybrid (very small) coming second and third. Then there were twenty fruits of scarlet flesh kinds, Blenheim Orange coming first and second, and Bloxholm Hall third. Both these large classes showed plainly, by the ultimate selections of the judges after tasting all the fruits, what absurd results would have followed had the prizes been awarded by smell and appearance.

PLUMS were not a strong feature, the best reds being Goliath, Pond's Seedling, Red Magnum Bonum, Sultan, Cox's Emperor, and Victoria; whilst in greens and yellows, White Magnum Bonum, poor in flavour; Washington, Green Gage, Jefferson's, Coe's Golden Drop, and Reine Claude de Bavay were the best. In purples, Goliath was again found; also Kirke's, Prince Engleheart, Black Belgian, Mitchelson's, and Black Diamond. Figs were not an interesting class.

The class for ten kinds of Pears brought seven lots, all good samples, Mr. Jas. Butler, of Sittingbourne, having the best. Doyenné Boussoch, Dunmore, Brockworth Park, Beurré d'Amanlis, Pitmaston Duchess, Durondeau, Clapp's Favourite, Doyenné du Comice, &c., were specially excellent. Mr. Butler was again first in the class for three dishes ripe, Mr. Waterman, of Aylesford, coming second. These had Doyenné Boussoch, Williams' Bon Chrétien, Beurré d'Amanlis, Theodore Eyre, rich colour not unlike Trout and others as named.

APPLES.—In the class for twelve kinds Mr. Waterman took first place with kitchen varieties, Grenadier, Ecklinville, Stone's, Stirling Castle, Lord Suffolk, and Warner's King, all fine; and for dessert, Washington, Ribston Pippin, Gravenstein, Duchess of Oldenburg, Cellini, &c. Messrs. J. & R. Lane, of St. Mary Cray, had fine New Hawthornden, General Gordon, like Alfriston, Waltham Abbey Seedling, Dutch Codlin, &c. Mr. McIndoe came third with very handsome glass-grown samples. In the class for three dishes of ripe fruits the best were Gravenstein, Worcester Pearmain, Duchess of Oldenburg, Yorkshire Beauty, and Ribston Pippin. Finally, of the competitive classes there remain the Tomatoes, of which no less than sixty-six dishes were shown in half dozens. The names of the respective sorts will show how kinds may be duplicated: Carter's Perfection, Sutton's Perfection, Laing's Perfection, Livingstone's Favourite, Hackwood Park, all same strain, Trophy, Stamfordian, Empress, New Jersey. We had a very coarse Dedham Favourite, Acme, and Monarch. A very fine lot of fruits, including Ham Green Favourite and Optimus, came from the British Fruit Growing Company, Grosvenor Square, but were disqualified through the unfortunate absence of the ninth fruit in one dish.

MISCELLANEOUS COLLECTIONS must be briefly summarised, Messrs. James Veitch and Sons having a wonderfully fine collection of 150 dishes of Apples and fifty dishes of Pears, all grown outdoors. As this lot comprised all the best kinds in cultivation, selection is superfluous, especially as opportunity will be given a little later on to refer to this firm's fruit again. Mr. William Taylor,

Hampton, had a dozen dishes of Apples of good samples. Mr. Bunyard, Maidstone, showed fifty dishes of Apples and some twenty dishes of Pears, all good, many of the Apples from his greenhouse being especially so. Messrs. Cheal & Sons, Crawley, had 100 dishes of Apples. Still in the case of outdoor fruits the fine colour looked for is yet lacking, and will be found richer on later gathered samples. Messrs. J. Laing and Sons, Messrs. Peed, of Norwood, and others showed collections of fruits of diverse varieties, but naturally at an exhibition of this kind these were eclipsed by the superior merit of the competing samples.

A full list of prizes is given in our advertising columns.

NATIONAL DAHLIA SOCIETY.

SEPT. 6 AND 7.

THE exhibition of the National Dahlia Society this year had an additional interest from the fact that this is the hundredth anniversary of the introduction of the flower into England. It must be said that the society has worthily celebrated the auspicious event by a show of Dahlias that was thoroughly representative and of the greatest interest. Though the plants during the past season have had many trials, the flowers throughout were marked by a finish, freshness, and colour that came as a welcome surprise. Many declare such shows as that of the Dahlia stereotyped, and so they are to a certain degree, but each year sees some change, the rise and fall of a particular class of flower. There is a perceptible increase in the culture of the Cactus varieties, and a slight falling off in regard to the single kinds, but the popularity of the Cactus division is most marked. Three years ago there were but few kinds, now there are many, and with the increase in quantity has also come a desirable improvement in habit. The great centenary class was the most interesting in the exhibition, apart from its association with the introduction of the flower, as it gave exhibitors an opportunity of displaying the flowers in a different way from the formal stereotyped fashion in vogue at such exhibitions, and from which there seems no relief. It was for a collection of Dahlia blooms, no restriction as to varieties or types, nor as to the method of staging or grouping, quality and general effect to be the leading features. Those who conceived the idea must have been gratified by the result, as the winners of the first and second prizes had arrangements that showed how extremely beautiful and informal cut flowers of Dahlias, when arranged with skill and taste, may be presented at exhibitions. To Messrs. Cheal and Sons, of Crawley, Sussex, belong the honour of winning the first prize for a group tastefully arranged and consisting of the finest blooms. The Cactus varieties were exceedingly good, and included such varieties as Charming Bride, a beautiful flower, richly coloured with rose on a white ground; Empress of India, maroon; Gen. Gordon, bright scarlet; and Henry Patrick, white; while of the single types there were good blooms, beautifully set up, of Sunningdale White, one of Mr. Girdlestone's acquisitions, and Amos Perry, which is like a very fine Paragon; and of bouquet kinds, Fair Helen, white tipped lilac, and Guiding Star, white, were particularly fine. We can give Mr. T. S. Ware, of Tottenham, great credit for his arrangement in which the flowers were shown in groups. The central bank of Cactus varieties was remarkably happy in effect, the outer edge consisting of flowers of Mrs. G. Reid, a distinct and pretty variety, the flowers of a soft shade of lilac. The blooms of Henry Patrick, Empress of India, Mrs. Hawkins, Panthea, brilliant scarlet; Honoria, rich yellow; and Sidney Hollings, deep maroon; were worth of remark. The single, show, and stellate types were all represented, and formed the outer groups to the display.

The whole of the classes were well filled with one or two exceptions, and in the nurserymen's division the great class was for seventy-two varieties, not less than thirty-six varieties. Here Mr. C. Turner, of Slough, was at the top, and it need scarcely be said that as an exhibit of show flowers

it left little to be desired. There was the characteristic freshness and quality in the flowers, all fairly even as regards merit, and comprising such kinds as Eclipse, Charles Wyatt, Diadem (rich red), Prince of Denmark, Mrs. Gladstone—which was exquisitely tender in colouring throughout the show—Crimson King, a seedling of promise, the flower white, tipped with lilac; John Bennett, Herbert Turner, and Mrs. Henshaw. The second prize went to Messrs. Keynes, Williams and Co., of Salisbury, who had the leading varieties, and the flowers were of commendable quality. The order of things was reversed in the class for forty-eight flowers, as here the Salisbury flowers were before those from Slough. Mr. John Walker, Thame, Oxon, came first in the class for thirty-six flowers, and Mr. G. Humphries, Chippenham, second, both showing well. The last-named exhibitor was first for twenty-four blooms. Messrs. Cheal and Sons were first for twelve blooms, distinct.

Amateurs exhibited show and fancy flowers remarkably well. In some of the classes there was not much to choose between the two sets of growers. Mr. J. T. West, The Gardens, Cornwall, Brentwood, was a great prize-winner throughout, and he was first in the class for twenty-four with superb flowers of Prince Bismarck, deep maroon; Willie Garratt, red; George Rawlings, R. T. Rawlings, Rev. J. Godday, maroon; and the beautifully coloured Ethel Britton. The second prize went to Mr. Hobbs, Lower Easton, Bristol. The winner of the first prize for twelve flowers of show varieties was Mr. Ocock, Havering Park, Romford, for blooms of rare finish, as they need to have been in such a large competition. Such varieties as G. Rawlings, R. T. Rawlings, Shirley Hibberd, Maud Fellows, Prince of Denmark, Mrs. Gladstone, Harry Keith, Sunbeam, Rev. J. B. M. Camm, and Ethel Britton were well worth a note. Mr. Heere-mans, junr., was first for six blooms.

The excellent flowers in the fancy classes showed that this section still retains its hold, though we regard it as the least interesting. Good blooms were put up by Mr. H. Glasscock, Bishop's Stortford, in the class for twelve, comprising such kinds as Mrs. Saunders Peacock, Frank Pearce. Mr. J. T. West was second. Mr. Ocock had the best six flowers of fancy types.

Open classes were well filled, and they include those for flowers of distinct shade, which always make a delightful display of colour and bring out not only the most popular kinds, but those in the finest forms during the present season. For six blooms of any two dark-coloured Dahlias, Mr. J. Walker, Thame, was first, showing James Cocker and William Rawlings; Messrs. Keynes and Co. coming second. In the class for two light-coloured Dahlias, Mr. J. T. West showed those beautiful shaded flowers, Mrs. Gladstone and Queen of the Belgians, in their full freshness and delicacy of colouring. Messrs. Keynes, Williams and Co. were first for any two tipped Dahlias, having excellent blooms of Mrs. Saunders and Peacock, while in the class for striped flowers the same firm were the most successful. The blooms staged were Mrs. John Downie, buff striped and flaked with rose, and Rebecca, rose-purple flaked deep maroon.

The bunches of decorative or Cactus flowers relieved the show from some of its formality, and there was considerable taste shown in staging the flowers, while their individual quality was of a high order of merit. Messrs. Keynes, Williams and Co. were first with excellent blooms of Honoria, Prince of Wales (scarlet), Henry Patrick, Panthea, Amphion, and William Darville, a superb flower of a rich maroon colour. Mr. H. Glasscock was first for six bunches.

The Pompon varieties were well represented. The class for twenty-four kinds, to be shown in bunches, was well filled, and here Mr. Turner was first with excellent blooms of Juno, crimson-tipped lilac; Darkness, almost black; Mabel, rose-lilac; Lady Blanche, white; Little Duchess, White Aster, Isabel, scarlet; Little Ethel, white-tipped lilac; Cleopatra, purplish maroon, shaded with a light

tint. Mr. J. Gilbert, Ipswich, was to the front for twelve distinct kinds.

There was good competition in the classes for single Dahlias, and Messrs. Cheal and Sons showed remarkably well. They are especially successful with this type, and on the present occasion exhibited superb blooms of the varieties New Year, purplish rose; James Scobie, yellow splashed with red; Victoria, white edged with crimson; Miss Ramsbottom, rose; Cetewayo, deep colour, almost black; Queen of Singles, purplish rose, very pretty; and Amos Perry. Mr. Seale, The Nurseries, Sevenoaks, was first for twelve varieties. For six (amateurs) the most successful was Mr. T. W. Girdlestone, Sunningdale, Ascot, who had bold, handsome flowers, well arranged, of Marie Linden, deep red, edged with a brighter shade; Cyclops, rose; Sixpenny, rose, white in the centre; Lady Helen, yellow and pure white; and Gruppo, brick red.

First-class certificates went to Messrs. Keynes and Co. for show Dahlias Majestic, Alice Emily, and Duke of Fife; to Mr. C. Turner for Pompon Dahlia Cleopatra, purplish maroon shaded lighter tint; to Messrs. H. Cannell and Sons for Cactus variety Mrs. Douglas; to Mr. T. S. Ware for single variety Miss Jefferies; and to Mr. T. W. Girdlestone for single Dahlias Lady Helen, Yellow Perfection, and Gruppo, the two latter described above.

There were several miscellaneous exhibits. A large collection of annual flowers came from Mr. E. F. Such, Maidenhead, and hardy flowers from Messrs. Paul and Son, Cheshunt. Messrs. John Peed and Sons, Roupell Park, Norwood, showed Chrysanthemums, Asters, and Messrs. Bunyard and Co., Maidstone, French Marigolds, Dahlias, Gladioli, &c. Messrs. H. Cannell and Sons had tuberous Begonias in excellent variety, Dahlias, &c.; and Mr. W. Gordon, Twickenham, a splendid group of Lilium auratum, the plants in the finest flower and representing excellent varieties. Messrs. John Laing and Sons, Forest Hill, exhibited tuberous Begonias; and Messrs. J. Burrell & Co., Cambridge, had excellent spikes of Gladioli.

There was a class for a group of early-flowering Chrysanthemums, and the first prize was won by Messrs. J. Laing and Sons for a superb arrangement, the plants densely flowered; two new varieties, viz., Grace Altick, white, thin-petalled flowers, and Comtesse Foucher de Cariel (an absurd name), bronzy, were noticeable. Both are of the Japanese type and valuable for their earliness, as there are few of this character in bloom now. Messrs. Davis and Jones, Camberwell, were second. There were also classes for other florists' flowers. The Gladioli spikes from Mr. G. S. Walters, Calne, Wilts, and Messrs. Burrell & Co., Rev. H. H. d'Ombain, Kent, the Cockscombs from Mr. C. Osman, South Metropolitan District Schools, Sutton, and the China Asters from Mr. Walters and Mr. W. J. Jones Bath, must not be passed over without comment they were remarkably fine.

Full list of prizes is given in our advertising columns.

The Dahlia Conference.—It was a happy thought on the part of Mr. T. W. Girdlestone, the secretary to the National Dahlia Society, that a conference of persons interested in the Dahlia should be held in connection with the annual exhibition of the society in celebration of the undoubted centenary of the introduction of the plant into this country by the Countess of Bute in 1789. This conference took place at the Palace on Friday afternoon last. Mr. Shirley Hibberd presided, and gave an interesting address upon the history and development of the Dahlia. The address was illustrated by numerous drawings of old and more recent Dahlia flowers, also by an enlarged diagram which showed the development of the flower from its original single form to the wonderful doubles of to-day. Mr. H. Turner followed with a paper upon "Show Dahlias," in which reference was made to the gradual production of named flowers, the culture of the Dahlia for the production of exhibition blooms, and a selection of show and fancy varieties given. Mr. West, of Brentwood, read an excellent paper upon the cultivation of the Dahlia

from an amateur's standpoint, a paper which should be widely read. Mr. Cheal, of Crawley, followed with a capital paper upon "Cactus, Pompon and Single Dahlias," in which the claims of these beautiful forms for popular support were maintained. Mr. Girdlestone, in proposing a vote of thanks to the chairman, referred to the kindness of the Marquis of Bate in sending a handsome donation in honour of his ancestress of 100 years ago. Mr. H. Cannell referred to the revival of Paragon and the introduction of the Cactus form Juarezi. The votes of thanks proposed to the respective readers of papers were heartily adopted.

ROYAL HORTICULTURAL SOCIETY.

Floral Committee.

A MEETING of this committee was held in the Gardens at Chiswick on Thursday, September 5. The collections of Heliotropes, Ageratums, Pelargoniums, Asters, and Dahlias were inspected, and awards were made for the following, three marks being equivalent to a first-class certificate, and two indicating an award of merit:—

ASTERS.—These constitute a fine display, a large space of ground being occupied with them, the trials of strains and varieties being numerous and thoroughly representative. Certificates were awarded for Hedgehog, imbricated pompon, half dwarf pompon, Victoria, New Liliput, Victoria Needle, Cocardeau or Crown, dwarf pyramidal, large-flowered dwarf Queen, and Improved Rose. Awards of merit were granted for dwarf Chrysanthemum, dwarf Queen Victoria, dwarf bouquet, and New Victoria (Barr), most of those named being grown from seed supplied by Messrs. Putz and Dippe respectively.

AFRICAN MARIGOLDS.—Certificates were awarded for the following: *Prince of Orange*.—A compact-growing variety, 2 feet high, large, well formed, richly-coloured flowers. *Lemon Queen*.—Similar height to the above, very even, flowers good shape, soft clear lemon tint. *Dwarf Orange*.—About 20 inches high, and would probably be less in an open situation; good habit, flowers, and colour *Dwarf Golden*.—Compact, free, and useful variety.

FRENCH MARIGOLDS.—*Electric Light*.—Dwarf, free, and good, flowers pale lemon. *Dobbie's French Selected*.—Tall, flowers yellow with a few stripes, excellent shape; awarded a certificate for its floral quality.

DAHLIAS.—A large number of Dahlias came under notice, and certificates were awarded for the under-mentioned: *Single*—Florrie Fisher (Ware), Chilwell Beauty (Ware), Miss L. Pryor (Ware), Kate (Ware), Paragon (Turner), Amos Perry (Turner), Mr. Kennett (Turner), Fashion (Cheal), Victory (Cheal), Magpie (Cheal), and Mrs. Kennett (Cheal). Awards of merit were adjudged for Duchess of Westminster (Ware), Miss Gordon (Turner), Guardsman (Turner), Hugo (Cheal), Negro (Cheal), and Edith (Cheal). A certificate was also awarded for Empress of India (Turner), a crimson Cactus Dahlia; and awards of merit for Professor Baldwin (Ware), a scarlet Cactus Dahlia, and North Light (Turner), a brilliant scarlet pompon.

HELIOTROPE.—First-class certificates were adjudged for the following: *Capus* (Lemoine).—A remarkable variety with deep purple flowers, large truss, and good habit. *Fleur d'Étê* (Lemoine).—Light colour, large flowers and truss, dwarf compact habit; free and useful. *Victor Durny* (Lemoine).—A tall, strong-growing variety, having an enormous truss of purplish flowers. Effective and useful for training against a wall.

ZONAL PELARGONIUMS.—*Souvenir de Mirande* (Lemoine).—Single, white centre, cerise edge, finely formed flower and truss, very distinct. *Opal* (Pearson).—Single, dark salmon, darker centre, fine bold flower, good habit, free. *Charbon Ardent* (Lemoine).—Double, brilliant orange-scarlet, a dazzling and distinct shade. *Seedling 137* (Lemoine).—Single, very large truss, of a peculiar rosy tint. *Semis* (Lemoine).—Purplish crimson, rich colour, large semi-globular truss, one of the Nosegay type (award of merit).

SCABIOUS.—*Half Dwarf Blood Red* (Vilmorin).—An excellent strain, of an intensely light, yet rich crimson colour. Fine compact habit.

A capital strain of Zinnias (Putz) was also commended.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE summer exhibition of the National Chrysanthemum Society took place at the Royal Aquarium on Wednesday and Thursday last, and both in the extent and quality of the exhibits surpassed the best expectations of the promoters. The Chrysanthemums were a marked improvement upon those shown last year, illustrating the impetus given to the culture of the early-flowering Chrysanthemums. Some remarkable blooms of Mme. C. Desgrange and Gustave Wermig were shown, marvels of high-class culture that astonished some of the best Chrysanthemum cultivators of the day.

PLANTS.—The classes for Chrysanthemums comprised a group of plants of any varieties to fill a given space. These were neatly and boldly arranged in semi-circles against collections of foliaged plants, the first prize being awarded to Messrs. John Laing and Sons, Stanstead Park Nursery, Forest Hill, who had some well-grown plants admirably bloomed and arranged with considerable taste, and representing some of the very best of the early varieties in cultivation. Mr. J. R. Chard, Brunswick Nursery, Stoke Newington, was second.

CUT FLOWERS.—The leading class was for a collection of cut Chrysanthemums in bunches, quality and number of varieties to be the leading feature. Mr. R. Owen, Castle Hill Nursery, Maidenhead, was first, with fifty-four bunches in forty varieties, large and well set up and of excellent quality, including such varieties as Gustave Wermig, Mons. P. Van Geert, Mme. Desgrange, Mrs. J. R. Pitcher, Mlle. L. Lassali, Flora, Alice Butcher, Canary, Anastasio, W. Piercy, Blushing Bride, Précocité, Fred. Pélé, Fiberta, W. Crounts, Mrs. Cullingford (excellent), Surprise (very pretty, salmon-pink), Fanchette, Toreador, &c. Second, Messrs. J. Laing and Sons. The best twelve blooms of Mme. Desgrange were of large size and grandly developed and came from Mr. J. Blackburn, Elmshead Grange, Chislehurst. Mr. James Hudd, Garden House, Blackheath Park, was second. In the class for twelve blooms, any varieties except Mme. Desgrange, Mr. Blackburn was first with blooms of Gustave Wermig.

In the class for twelve Pompon varieties, three blooms of each, Mr. D. B. Crane, Archway Road, Highgate, was first with very good flowers; second, Mr. H. Neary, Holy Innocent's, Hornsey. The best six bunches of Mme. Desgrange, three blooms in each, came also from Mr. Blackburn, and very fine they were; Mr. James Pratt, 42, Gloucester Place, Hyde Park, was second. Mr. H. Heard had the best six bunches of any yellow variety of Mme. Desgrange, staging capital blooms of Gustave Wermig. Mr. D. B. Crane had the best twelve bunches in the amateur class—a very good collection indeed; second, Mr. A. R. Rundell, Archway Road, Highgate.

GLADIOLI.—Prizes were offered for an unlimited collection, and Messrs. J. Burrell and Co., Howe House Nurseries, Cambridge, set up a superb lot of something like 120 spikes, all of very fine quality, and some of them of unusual size.

DAHLIAS were a remarkably good feature, and they were numerous and finely shown. The best collection of sixty blooms, not less than thirty-six varieties, came from Mr. Charles Turner, Royal Nursery, Slough, who staged Burgundy, R. T. Rawlings, Seraph, Prince Bismarck, Clara, James Cocker, Mrs. Gladstone, Mr. G. Harris, Charles Wyatt, Prince of Denmark, Goldfinder, Harry Turner, Miss Cannell, Glow-worm, T. J. Saltmarsh, Sunrise, Mrs. J. Downie, T. S. Ware, Ethel Britton, Queen of the Belgians, Royal Queen, George Rawlings, Perfection, Mrs. Saunders, Agnes, William Rawlings, Mrs. H. Halls, Joseph Green, Chrs. Ridley, Ruby Gem. Second, Messrs. Keynes, Williams and Co., nurserymen, Salisbury. In the class for thirty-six blooms, distinct, Messrs. Keynes, Williams and Co. were placed first. Second, Mr. Charles Turner.

In the class for twenty-four varieties, Mr. John Walker, nurseryman, Thame, was first with admirable blooms, Mr. George Humphries, Kingston Langley, Chippenham, being second. In the class for twelve blooms, Mr. John Walker was again first.

In the amateurs' division the best twenty-four blooms came from Mr. J. T. West, gardener to Mr. W. Keith, Cornwalls, Brentwood, who had excellent flowers of the Rev. J. Godday, Mrs. Gladstone, Mrs. Langtry, Miss Cannell, Willie Garratt, R. T. Rawlings, Matthew Campbell, Mrs. Shirley Hibberd, Prince of Denmark, William Keith, Geo. Barnes, Jas. Stephen, Queen of the Belgians, T. J. West, Mrs. West, Mrs. Geo. Rawlings, T. J. Saltmarsh, Frank Pearce, Shirley Hibberd. Second, Mr. Henry Glasscock, Bishop's Stortford. Mr. West also had the best eighteen blooms, Mr. Glasscock being second. With twelve blooms, Mr. S. Cooper, Chippenham, was first. In the class for six blooms Mr. Cooper was again placed first.

THE POMPON VARIETIES, as is usual, made a charming display, set up in elegant bunches backed by their own foliage. Messrs. Keynes and Co. were first with an admirable selection, including such fine varieties as Dove, White Aster, Leila, Red Indian, Sappho, Isabel, E. F. Jungker, Whisper, Eden, Darkness, Favourite, Little Ethel, Eurydice, Gem, Little Darkie, Grace, Rosalie, Janet, Little Duchess, and Admiration. Second, Mr. Charles Turner. Messrs. Burrell and Sons had the best twelve bunches. Second, Mr. George Humphries. The best six bunches, open to amateurs only, came from Mr. G. M. Crabbe. Second, Mr. H. Heeremans, junr.

SINGLE DAHLIAS were also numerous, and very well shown indeed. Messrs. Cheal and Sons were first with a very fine lot, Mr. F. W. Seale being second. Messrs. J. Burrell and Co. had the best twelve bunches, though they were somewhat large and coarse. Second, Mr. T. W. Girdlestone, Sunningdale, with a very good and well-arranged collection. Mr. Girdlestone also had the best six bunches.

CACTUS AND DECORATIVE DAHLIAS were finely shown also. Messrs. Keynes and Co. had a superb stand admirably staged of the following varieties: Amphion, Empress of India, Henry Patrick, Panthea, Mr. Tait, Mrs. Hawkins, Lady Marham, Juarezi, Honoria, Wm. Darvill, Asia, and Prince of Wales. Second, Messrs. Paul and Son, Old Nurseries, Cheshunt. The best six bunches came from Mr. Heeremans.

In the way of miscellaneous collections, there were large and representative collections of cut blooms of Dahlias of all the types from Messrs. T. S. Ware, Hale Farm Nurseries, Tottenham, and H. Cannell and Sons, nurserymen, Swanley; the latter also had Cockscombs and flowers of Begonias, and Mr. Ware had in addition a collection of flowering plants of Mrs. Hawkins, the new yellow sport firm Gustave Wermig. Mr. Rowen had a collection of cut blooms of Begonias. Mr. George Braid, florist, Winchmore Hill, had a very fine lot of dwarf crimson Cockscombs. Mr. E. F. Such had a large collection of Dahlias and cut blooms of hardy flowers, and the medals of the National Chrysanthemum Society were awarded to some of the foregoing.

Chrysanthemum law case.—The litigation between Messrs. Hawkins and Bennett, of Twickenham, and Mr. T. S. Ware, of Tottenham, respecting the Chrysanthemum Mrs. Hawkins has been referred to arbitration. The decision is not yet announced.

H. B. P.—Certainly not; the object now is to rest the Vines.

Hades.—Hobday's "Villa Gardener," Macmillan & Co. A botany book will give you hints on the fertilization of flowers. We suppose that is what you mean.

Names of plants.—Common Japan Asparagus (*Polygonum cuspidatum*).—Mr. *Sanguin*.—*Lycopodium Billardieri*.—*Anon*.—1, *Veronica Teucrium*; 2, *Epimedium alpinum*; 3, *Saponaria officinalis* alba. — *Chislehurst*.—*Picea Morinda*.

Names of fruit.—A. B. Pear is *Souvenir du Congrès*; Peach, Red Magdalen; and Plum, Magnum Bonum.

WOODS & FORESTS.

WHAT SHALL WE PLANT?

THE planting season is at hand, and the above important question is now being occasionally asked by those who contemplate forming new plantations either for ornament, shelter, or utility, or perhaps all combined. Practical experience and observation tell us that this important question should be thoroughly solved before planting operations are commenced at all. In the formation of plantations for utility and profit, there are three points in particular that the planter should always keep in view, namely, to plant the species of trees that are known to thrive and attain a profitable size on the particular class and texture of the soil to be planted; always insert the hardiest sorts on the most exposed points of the ground, and also as far as possible plant the particular species of trees that are most likely to be looked after and command a ready sale in the locality. If these points are attended to and the after management properly conducted, there is no great risk of failure. Good, honest, money-making forestry is the true arboriculture of the present day, and not mere theories based upon the views of some writers and others who wish to adopt foreign methods and novelties that are not in keeping with the capabilities and requirements of the country. Among hard-wooded trees there is perhaps none that can be turned to better account at all stages of its growth than the common Ash (*Fraxinus excelsior*), and it is not only capable of growing and attaining a useful size of timber on a great variety of soils and situations, but likewise extends itself by natural reproduction; its merits on this score alone are of a very high order. Few, if any other trees are so well adapted for forming a profitable coppice as the Ash. When the young suckers have attained a height of from 20 inches to 30 inches I have sold them in quantity at the rate of 5s. per 100, and sometimes more, according to quality and demand. After four years' growth they are generally of a suitable size for stakes and walking-sticks, and realise 1s. per dozen. Large quantities of young stuff are likewise used at potteries for crate-making and other purposes, and after a growth of some eight or ten years they are generally of a suitable size for making handles for a great variety of tools and implements. When they attain a diameter of 3 inches they are equally as valuable as the finest matured trees in the forest. Good Ash wood is more flexible than that of any other European tree, and for this reason it is used by coachbuilders, cartwrights, and farmers for the making of all kinds of agricultural implements. The Ash thrives best and produces the finest class of timber on soft alluvial soil that is not apt to suffer by drought in summer or the presence of stagnant water in winter, although, at the same time, it is by no means confined to this class of soil, as I have grown good profitable timber on soil of a very opposite texture. To grow the tree to the best advantage, it should be planted in blocks by itself, and at such a distance apart that the side branches gradually lose their vitality and fall to the ground, by which means the stems exhibit fine clean shafts, free of knots or blemish of any kind when they reach the years of maturity. The roots and lower part of the stems of old trees occasionally exhibit a blackish and sometimes a reddish colour, on account of which the wood when cut up is highly prized by the cabinet-maker and others for fancy work, and commands a high price. Except to form a coppice, the Ash should never be planted on stiff, retentive

clay soils, nor on dry, gravelly ground, for although the composition and texture of these soils are very different, yet it is a curious fact that both promote the same class of disease, viz., that of heart-rot and pumping. To grow the best class of Ash timber, the trees should be in a rapid state of growth from the time of planting until they are felled for use, otherwise the wood is apt to become short in the grain, brittle, and shaky. Rank peat-bog, unless well mixed with clay, is unsuitable for growing a profitable crop of timber, as the Ash is always of a dry nature and short in the grain when produced upon this class of ground. I have, however, grown fine Ash coppice upon this class of ground, and have no hesitation in recommending it to the notice of planters. Few other trees do more harm to vegetation than the Ash. It throws out its roots in a horizontal direction below the surface sward, and thus robs other plants in its vicinity of their food, from which cause it is unsuitable for planting in hedgerows and arable ground, although, at the same time, it does not absolutely kill Grass and other plants beneath its shade. Many years ago, when assisting to renovate and carry out extensive improvements on one of the Duke of Fife's estates in the north, I found the roots of this tree at a distance of upwards of 100 yards from the stem. When planted on good soil on the lawn it forms a fine specimen.

J. B. WEBSTER.

Remarkable American trees.—A Pine tree in Irwin County, Georgia, has two distinct bodies, but only one top. The trunks grew out of the ground about 5 feet from each other, but at 40 feet grew into each other, forming one tree with one top. The Walnut tree which served as a whipping-post where deserters and Tories were punished during the Revolution still stands near Fishkill. The iron rings to which the culprits were tied whilst being whipped are hidden by the bark which has grown over them. A Buttonwood (Plane) that was a vigorous tree during the Revolution still stands on the farm of George Sanger, Canterbury, Conn. It is 70 feet high, the trunk measuring 16 feet in circumference 2 feet from the ground, and it is the same size around 25 feet above, where the branches first project. Probably the largest tree in Florida is between Longwood and Soldier Creek, in Orange County. It is a Cypress, which by actual measurement is 14 feet in diameter just above the ground. This is solid wood. There is none of the inverted funnel shape so common in the Cypress, but it comes out of the ground straight as a candle, and at 60 feet from the ground the diameter is estimated at 10 feet.

The Western Plane (*Platanus occidentalis*).—The Western Plane is a larger tree than its relative in the East, and of more rapid growth, and has broader and less deeply-cut leaves, and the fruit is smooth and much larger. It is found in a vast tract of land in North America, and goes by the name of Buttonwood. The Western Plane delights to grow along the great rivers of the Ohio and the Mississippi, and in the fertile valleys watered by those mighty streams. The lower parts of these valleys are covered with thick dark forests composed of gigantic trees. The leaves that fall every year decay and form a rich vegetable mould that contributes to the amazing growth of the trees. Here the Buttonwood flourishes in great luxuriance, and is loftier and larger than any of its neighbours. It has a variety of names besides those we have mentioned. Sometimes it is called the Water Beech, or the Sycamore; and often it is named the Cotton tree, because of the thick down which covers the inner surface of the leaves when they first expand. In the course of the summer the down becomes detached, and floats in the air in such quantities as to be unpleasant and injurious. When the tree is very abundant, persons in the neighbourhood greatly dread the floating down, which irritates the lungs and has a tendency

to produce consumption. The wood of the Western Plane has a fine grain, and can take a high polish; but though it is sometimes used for bedsteads, yet the cabinet-maker rather avoids it on account of its tendency to shrink.

THINNING OF YOUNG PLANTATIONS.

EARLY thinning, or, in other words, the weeding out of the small, weakly, badly-shaped, or unhealthy trees that are encroaching on better ones is a matter which should always have early attention if a healthy crop of timber be expected. It is a too common practice to put off the thinning of young plantations during their early stages of growth from time to time until the trees are drawn up and crowded to such an extent that, when they are eventually thinned, the sudden change in the temperature of the plantation, occasioned by allowing a free circulation of air, causes a check in the growth of the trees, and in many cases injures the health of the crop, hastening on premature decay and disease; and if in an exposed situation, in all probability the growth will be stunted. A great many of the trees also will be uprooted or blown to one side by strong gales of wind.

If young plantations be periodically and systematically thinned as soon as their branches interlace and interfere with the free growth of one another, they will sustain no check; on the contrary, they will be stimulated to renewed vigour and healthy growth. When a plantation has been systematically and judiciously thinned, and the trees have attained a height of upwards of 30 feet, the subsequent thinning will have to be done very cautiously and sparingly, the trees being allowed to grow close enough to draw one another up somewhat in order to attain lengthy timber. After each successive thinning the hardwoods will require some attention to pruning, or, more strictly speaking, foreshortening of lateral branches and contending leaders that require restraining so as to balance the heads of the trees. Stem or close pruning should only be done with the pruning knife when the trees are young in the nursery, preparatory to planting out.

The pernicious practice of mutilating trees by amputating live limbs close to the bole is pregnant with evil results. It tends to check the growth of even healthy timber, and although the wound may be overgrown by bark, and to all external appearances the stem looks clean and the timber sound, such is not the case, for when the tree is cut up a blemish will be found, rendering the timber where the branch was cut off useless. The injudicious practice of stem-pruning trees after they have acquired the size of timber cannot be too strongly deprecated; the old adage that "a little knowledge is a dangerous thing" is strictly *apropos* in the case of pruning forest trees.

It is a common practice on some estates to saw off live branches close to the stem, with the professed object of making a clean butt of timber; it is, however, a gross mistake and a delusion to saw off live branches close to the bole with a view to assist Nature in making clean, sound timber. After a live branch has been sawn off larger than 1 inch or so in diameter, or when the red or heartwood has been fairly formed, the wound and the aftergrowth of woody layers will never unite; the knot will remain a piece of dead or decaying wood; and, of course, the larger the limb amputated the greater the blemish in the plank when the tree is sawn up. Timber merchants are alive to the injurious practice of lopping branches off trees; for whenever they find a tree that has been so treated they pronounce it faulty, and in consequence the value of timber is lessened. Inspectors of timber for the Government Dockyards are very particular not to use trees in which there are dead knots; when inspecting the timber they are generally supplied with an auger to test where dead knots exist, and if any be detected the tree is at once condemned. "Prune not at all," said Lindley; "plant thickly, thin constantly, stop carefully, and leave the rest to Nature." Now is a good time to carry out thinning, and, being so important, should have precedence over mere routine work.

T. F.

No. 931. SATURDAY, Sept. 21, 1889. Vol. XXXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

THE CHISWICK APPLE CONFERENCE.

THE Royal Horticultural Society deserves well of all classes of the community for the prompt publication of a full report of the meeting and exhibition held at Chiswick last autumn. Coming as it does at the present time, the eve of another planting season, landowners, land occupiers, horticulturists, and others interested in our waning agriculture—all, indeed, who believe fruit culture may be made a profitable appendage to the sister art will be able to read and mark most valuable information before they make their selections of fruit trees. To the masses an Apple is an Apple, but to those who have given the subject much thought it is well known that an indefinite number of inferior sorts hitherto has been the curse of the country. Consumers are ready to purchase, but the fruit must be good to the taste and pleasing to the eye, otherwise they will have none of it. The Royal Horticultural Society knowing this, although badly lodged itself, in the year 1883 set about putting the house of Pomona in order. What steps were taken and with what results a few statistics prepared by the indefatigable superintendent, Mr. Barron, will prove much better than a voluminous article. In that year, a most wonderful one for Apples, the society, never better employed, decided upon holding a congress at Chiswick. At this gathering all the Apples known were represented, and, startling as the fact may appear, the representative committee of practical fruit growers had no less than 10,150 dishes or separate lots to deal with. Of these, 913 were exhibited by Kent, and 908 by Middlesex; the remainder came from all parts of the kingdom, which for convenience and future advantage was divided into sections or districts. Working in sections, the committee, composed of volunteers, set about putting this motley array of good, bad, and indifferent into order, and when I state that each exhibit was examined more than once, the weight of this trifling part of the business may be imagined. But mark the outcome. The number of names applied to the Apples exhibited, including synonyms, amounted to 2020, and that of varieties described as presumably distinct to 1445. Here, independently of much valuable information as to soil, site, and stocks, there was a great weeding out, but the good seed sown did not produce fruit until growers again met on the same ground five years later. Although the season 1888 was not favourable to quantity or quality, the 2690 dishes exhibited showed marked improvement in culture, and, equally gratifying, correct nomenclature was especially noticeable. Many of the dishes, as a matter of course, were repetitions one of another, as may be gathered from the following audit: Warner's King, 78 dishes; Blenheim Orange, 74; King of the Pippins, 71, and so on, making in the aggregate 1496 varieties. Within five years we have an improvement in quality, a reduction in quantity, and an advance in nomenclature, three steps for which all practical fruit growers must feel grateful; but the thin end only of the wedge has been introduced, for varieties are by far too numerous, one-tenth at most being ample for all purposes throughout the United Kingdom.

Returning to the journal edited by the

Rev. W. Wilks, the honorary secretary, and Mr. D. Morris, the treasurer, it may be well to say the whole of the papers read at the conference and bearing upon every phase of fruit culture have been published together, and will pay for reading. The second and third parts of the journal, so ably managed by Mr. Barron, convey all the statistics relating to Apples, also a descriptive catalogue of names and synonyms which will be found useful to all cultivators of the soil, including the most experienced pomologists of the day. The report of the 1883 congress, entitled "British Apples," prepared by the superintendent, having been for some time out of print, the principal part of that work has been incorporated with the present report, making it the most complete and reliable compilation upon Apples ever published. Work like this, worthy of all who have taken part in it, must be pushed to completion; but it cannot be carried on without funds, which should be secured by a great augmentation of the members. Orchards generally having had a year's rest, the crop of Apples next season should be a very good one, an all-important factor in providing material for another eliminating conference.

W. C.

THE TONQUINESE MULBERRY.

(MURIER ARNAL) (MORUS SP.)

At the Paris Exhibition, Esplanade des Invalides, colonial section, all around the Tonquinese pavilion is planted a great number of trees of a new valuable Mulberry for silk growers. This Mulberry, which the French call Murier Arnal, after the name of its introducer, does not attain more than 4 feet or 5 feet high, and the stems die down every autumn as in the case of our Michaelmas Daisies. The importance of this introduction is its mode of growth, for as soon as the leaves have been cut off for feeding the worms the plant sends out new shoots. In a climate like that of Paris growers can obtain four crops of leaves in the summer. In Tonquin the natives gather seven and eight crops of silk cocoons, and if they obtain such a result it is because they have always fresh leaves at hand. It is true that the Tonquinese silkworms do not produce silk of first-class quality, but M. Arnal has obtained by crossing the French and Italian sorts with Tonquinese worms a hybrid which produces excellent silk, and which has astonished all the competent authorities at the Paris Exhibition.

During June M. Arnal has fed under the eyes of the visitors, Tonquinese, French, and Italian silkworms with leaves of the above Mulberry, and the results have verified his statements as to this new variety.

In Tonquin this Mulberry grows everywhere, but plantations made with care give a better result than the plants cultivated in pots. The natives grow this Mulberry in rows 5 feet apart and place the cuttings in a sloping direction in the soil, so that the plant can emit growths all the way along the stem. Such is the vitality of this Mulberry, that nearly all the cuttings M. Arnal brought with him were alive.

The plants put out of doors at Argenteuil without shading, and under a burning sun, have all grown freely, and are now covered with leaves. The American agent for the Agricultural Ministry having seen the results, immediately subscribed for 20,000 of these cuttings, and French growers have also subscribed for the quantity remaining in the hands of M. Arnal.

M. Arnal is going again to Tonquin and will send several hundred thousands of these cuttings.

This plant is interesting for England and English colonies. I believe this Mulberry will prove valuable in England for the rearing of the worms, because it will produce leaves when those of the old sorts are too old and too hard for young worms.

GODEFROY-LEBEUF.

Argenteuil.

THE EVILS OF GRAFTING.

TO THE EDITOR OF THE GARDEN.

SIR,—The recent tolerably exhaustive discussion on this subject will, no doubt, have convinced many readers of THE GARDEN of some of the disadvantages of grafting, and the next important step is to find a remedy for "the evils" in some efficient substitute for the operation.

Cuttings and layering have both been recommended; but cuttings will not do for Apple trees (for instance), and layering (as generally understood) is only practicable when branches can be brought into contact with mother earth, either on the level or in the form of "hillocks," &c. How, then, are we to propagate from tall standard Apple trees, or other trees, cuttings of which will either not strike root at all, or only with the greatest difficulty?

Having waited for some time in vain to see whether any suggestion would be put forward by some other correspondent of THE GARDEN, I will now, with your permission, ask whether we might not advantageously adopt a mode of layering which, I understand, is successfully practised in Japan and China. This might be termed "air-layering," and the operation is carried out in the following manner:—

A suitable shoot or small branch having been selected, a ring of bark, half-an-inch or so in width, is removed from it at a greater or less distance from the extremity. A ball of tenacious earth (a mixture of well-worked loam and cow manure, perhaps) is then placed round the shoot for a few inches above and below the part from which the bark has been removed, and into this (kept duly moistened by syringing) roots are soon emitted from the parts contiguous to the disbarked surface. After a proper lapse of time (discoverable by experience) the shoot is severed below the ball, and in the part thus cut away the operator becomes the possessor of a young tree on its own roots.

This operation, which is very simple, and is far less troublesome and more expeditious than any method of grafting, may possibly commend itself sufficiently to induce some readers of THE GARDEN to give it a trial; and should it prove to be as successful and satisfactory in Great Britain as it is said to be in Japan, the present mention of it will, perhaps, not have been entirely unserviceable.

P.S.—The rationale of the process appears to be that, the return flow of the sap being arrested by the removal of the ring of bark, the presence of the surrounding friendly medium induces the emission of roots, instead of the simple thickening of the bark which, under other circumstances, would ensue above the ring.

WILLIAM MILLER.

Water bouquets.—This method of making a floral arrangement for the table was recently brought under my notice by a lady who had been in the habit of doing so for many years. It was quite new to me, and the lady in question was greatly surprised to hear that I had never seen a water bouquet, nor have I ever seen any mention made of it in print till the appearance of "A. D.'s" note in THE GARDEN (Sept. 14, p. 235). To convince me of the prettiness of a water bouquet, a small one was made and the arrangement was charming and novel. The lady told me that some flowers are especially beautiful when thus immersed, as in some cases the water forms innumerable glistening crystal globules all over the flowers. The yellow Marguerite and Hoya carnosae were mentioned as being particularly pretty in a water bouquet, and

doubtless there are others as well. Perhaps some reader of *THE GARDEN* may have tried experiments in this way, and be in a position to tell us what are the best flowers. It would also be interesting to know how long the flowers last under such conditions. If immersion tends towards the endurance of the flowers, the method then becomes useful as well as novel.—A. H.

CHRYSANTHEMUMS.

E. MOLYNEUX.

CULTURAL NOTES.

THE recent bright warm weather has had a beneficial effect upon the plants, especially those which are grown for large blooms. Such weather has greatly assisted the proper ripening of the wood. The condition of the leaves is a sure indication of the state of the plants at this time of the year. There are three characteristics which the leaves possess. It is always well for beginners in the cultivation of any plant or fruit to know what to avoid as well as to find out what to strive to ensure. For the assistance of those who do not know I will explain the three kinds of leaves. Plants which do not possess the necessary requirements in the matter of leafage at this date cannot be expected to obtain what is missing for this season at any rate. First, there are those plants which may be as tall as others, but which are clothed with leaves unusually small for the variety, as nearly all kinds, and certainly all families, have leaves quite different in their formation to those of another family. Where the leaves are small, they are produced by plants which have been but imperfectly cultivated from the commencement of their existence, and have oftentimes suffered for want of water at the roots, especially when growing in small pots, just when the most careful attention to this detail was necessary to ensure the best results. Again, when the plants were placed in their flowering-pots they failed to have sufficient space for development. Such methods of cultivation as those described cannot produce leaves upon the plants consistent with perfect blooms. The reason of the plants being as high as those which are better grown is from the want of space during the early stages of growth, in consequence of which the growth became "drawn" and weakly. Although plants cultivated as described may with very few exceptions have leaves of a deep green colour, the rule rather is to find them pale green, due to improper treatment. Secondly, leaves that are extremely large, intensely dark in colour, and exhibit great grossness, but very soft in texture, show a want of soundness. The plants which carry leaves of this character show unmistakably a want of maturation in the wood, without which they will produce, almost to a certainty, blooms which will be large in diameter and coarse in the petals, showing a want of "build" or solidity. Leaves like those described are produced by the use of over-rich soil, loose potting, and the application of too large a quantity of stimulants, which produce a coarse growth.

I have described the two extremes in the kinds of foliage the plants should not produce. I will now point out the kind of leaves which should be encouraged. Upon well-grown plants the leaves will be of good size, not over large, thick, quite leathery to the touch, and not so gross that by bending them they will be liable to crack. The colour should be a bronzy green. Plants which show the characteristics named are certain to be sufficiently matured to give good results two months hence. I like to see

the stems show a state of ripeness three parts of their whole length, not too hard nor twiggy. Plants sometimes present a very green colour in the branches beyond the first break, even those varieties the stems of which should be brown in colour. This is the result of heavy applications of stimulants, which incite the plants to make gross growth of both wood and leaves. Plants like these present to the inexperienced cultivator a pleasing appearance. Especially is this noticeable in the Queen of England family, and in no section is the fault of grossness exemplified more fully when the time for the expanding of the blooms comes round. From the foregoing notes I trust the learner will be able to see the position his plants are in at this stage, and from their present appearance he should know how to manage them for the remainder of the season's growth. Plants which show the character of the first named will need abundance of stimulants if the roots are in good condition. Sulphate of ammonia given as previously described will suit such plants as well as any manure that I know of. Instructions as to the application of this manure were given on p. 96. In the case of plants like those now under consideration, the strength may be increased up to three-quarters of an ounce, and the plants may receive it twice a week. At other times when the plants need water, liquid manure or soot water may be given them; in fact, stimulants of some kind should be given every time that water is required at the roots, as it is not possible from this time onwards to over-feed such plants, provided whatever is given them is not too strong. The plants with large leaves, which came under consideration secondly, require gentle handling to produce even fairly good results. Sulphate of ammonia must not be given in any form, but applications of soot in a liquid form will be of advantage perhaps. Nothing but clear water for a time should be given, so that some hardening of the wood may take place.

The growths should be tied out as thinly as possible so that every shoot shall be exposed to the ripening influences of sun and air. Any superfluous growths forming at the nodes below the flower-buds should be removed at once, thus concentrating all the energy of the plants into those stems and buds selected to produce blooms. The soil in the pots should not be kept in a sodden state by giving water when not required. The plants should rather be kept on the dry side which will have a tendency to check grossness. Examine the soil in the pots before applying water, and if not absolutely dry pass the plants until the soil does need water; care must also be taken that the soil does not become so dry as to cause the leaves to flag. Only once now and again in very hot dry weather—say twice a week—should the plants be syringed. Keep the atmosphere dry about them, as this has a tendency to produce maturation, which in the case of such plants as those described is the all-important point to study. Regarding the treatment of the plants which I described last, and which I consider present the best appearances, I have little to say, as a continuance of such treatment as they have received must answer for their future welfare. At some length I have pointed out what to encourage and what to avoid to have the plants in the best condition at this stage of their growth, because amongst beginners I find there is an absence of knowledge as to what appearance the plants should present, there being too much leaning towards the apparently good looking leaves and big wood. Where the general stock of plants is progressing favourably, attention should be paid to supplying them carefully with water.

Some varieties need much more water than others on account of the large leaves which they naturally make. Such varieties as Maiden's Blush and the new variety Sunflower require more water than perhaps any other two varieties. The mention of these kinds is sufficient to show the difference that exists in the requirements of one sort from another in the matter of being supplied with water. During the last fortnight of dry weather we have found it necessary to examine our whole stock of plants at least twice daily, and in some cases three times.

Where the plants are in good condition and the buds swelling freely, stimulants of some kind are applied every time they need water. The plants should be syringed overhead every afternoon, and again in the morning should there not have fallen a heavy dew during the night. A sharp look-out must be kept for all superfluous growths up the stems, as now that the buds are taken the plants have a tendency to throw out numerous side growths all the way up the stem, and numbers of suckers, too, are being made. All these growths should be promptly removed. In the case of new or scarce varieties these suckers may remain and be utilised for increasing the stock. Most of the terminal buds will have formed, and the plants will have reached their full height. From this date no more attention will be required in keeping the shoots tied to the supports. A sharp watch should be kept on mildew, as if it is not eradicated now there is a possibility of its bringing trouble later on when the plants are housed.

There is a decided tendency this season towards early flowering of many varieties, the recent hot summer-like weather having brought on the plants very rapidly. Where the buds have a tendency to unfold their petals in ever such a small degree, it is next to useless to allow them to remain outside any longer without protection of some form with the idea of prolonging their development, as the night dews, if there be no rain, spoil the petals, if not now, at a later stage when least expected. It is much better to remove such early plants to a cool house. If it is not practicable to remove all inside at present that are showing colour in the buds, the following means may be adopted to protect them in some measure both from the sun's rays and from moisture. Take some stiff newspaper, or, what is better, thick brown paper, cut it into strips 2 inches to 3 inches wide, according to the size of the buds it is necessary to protect; 6 inches or 8 inches long will be sufficient; tie one end of the paper to the peduncle under the flower-bud, bend the paper over the bud, securing it on the other side again to the peduncle with some bast. The paper then forms an arch over the bud, which shields it from the sun and damp alike, and does not injure the petals as they unfold. By the adoption of this method of covering the buds the plants may remain out of doors fully a week longer than they could without protection.

Housing Chrysanthemums.—Remembering the disasters to Chrysanthemums in pots outdoors which befell growers during the early days of October last, when so many were caught unprepared and thousands of plants were destroyed, it was odd that so practical a theme as the making of due provision against such untoward visits in time of early frost should not have been mooted at the recent Chrysanthemum conference. Possibly it will be advised that the plants should be housed prior to the end of the present month. That is all very well, but if we should have hot weather during October, as is sometimes the case even if but for a few days, the undue forcing the plants receive acts

injuriously in expanding the buds some time before needed, and when in the case of market growers the best prices may not be obtained. In all cases the room cannot be so easily found in houses at the end of September, and where there are thousands of plants to shelter the difficulty is a pressing one. I heard the other day of some market growers who alone had 40,000 plants in large pots to find house-room for, truly an enormous quantity, and if the tail were to be sheltered at the end of the winter the head must have been already got under canvas. Temporary awnings may prove of great service for sheltering plants from moderate frosts, but those of last autumn were exceptionally severe, and although once bitten it is not wise to again provoke disaster, yet such unfortunate conditions may not again occur for a long period. If plants are to be kept late and cool, something must be risked, and a stout framework of wood rafters down over which can be rolled at short notice stout canvas coverings must be of great service in protecting plants. The great desideratum in the case of prospective frost is to have the foliage dry. Something may be done to help in promoting that end by gently tapping the stakes and stems to help shake off the moisture.—A. D.

Bush plants.—The staking of these will now need attention to secure the branches from mishaps by winds and other causes. As the plants are now growing freely, making their last break, the branches will increase in weight by the addition of extra leaves. It is not wise to thoroughly stake the plants at this stage of their growth, as the work might have to be done over again owing to the length of the shoots, which will continue to grow for some time yet. The most simple manner of securing the shoots is to place three or four stakes in each pot, around these tying some bast and enclosing the shoots. In this manner the weight of the branches will be borne by the loose supports around the plant, and as the branches cannot fall outside, they are rendered secure from winds or other dangers. Continue to feed the plants liberally, as upon the state of the foliage depends their appearance when in bloom. As the plants are generally grown in small pots, extra attention to watering when necessary is all the more needful. Pompons, Anemone pompons, and single varieties growing in 7-inch and 8-inch pots need abundance of water to keep them in good health at this time of the year. The best lot of bush plants that I have seen this season are those growing at Heckfield. They are just what such plants ought to be, ranging in height from 2 feet to 2 feet 6 inches, each having about twenty branches to each plant. The cuttings were struck early in February, the shoots having been pinched three or four times. Eight-inch and 9-inch pots are used, and the plants have had an abundance of space between each. Their bushy, sturdy appearance presents a deep contrast to that one sometimes sees when the plants are drawn up weakly through overcrowding. The present instance shows fully the advantage of allowing sufficient space between each plant, the result being plants clothed with healthy leaves right down to the top of the pots. In the same garden is growing a nice batch of plants of late-flowering varieties, such as Lord Eversley, which originated there, it being much prized for the purity of its blossoms when fully expanded. The pale pink or blush-white sort, Princess Teck, is also freely grown for late blooms; at the present time the plants each range from 1 foot 6 inches to 2 feet high, and have about twelve branches to each plant.—E.

Mlle. Leoni Lassali.—Once more has this semi-early pure white variety established its claims as one of the very best sorts in cultivation for the production of flowers throughout the month of September. Cut in sprays about 8 inches or 10 inches long, numerous flowers can be had upon each spike, and not being too closely set together, each bloom shows itself to advantage and creates a capital effect when arranged in either small or large vases. Those who have not tried this sort should do so another season, and I am sure they will have no cause to regret having done so. The most simple way to grow this variety is to strike the cuttings early in

January, allowing them to grow away at will without checking the leading shoot in any way, and when the plants make their first natural break, allow all extra growth to extend without let or hindrance.—E. M.

Chrysanthemum nanum.—For flowering in the borders during the month of September, this is one of the best sorts we have. The growth is very compact, yet the plant branches freely and flowers in great profusion. The colour of the flowers is a creamy-white, deepening towards the centre and becoming whiter at the edges with age, until the petals assume a soft pink, which denotes their fading away. Nice bushes from 1 foot to 2 feet in diameter, and not more than 2 feet high, are very useful for the front part of the herbaceous border, and can easily be had by striking the cuttings in the early part of February, planting them out carefully when hardened off sufficiently, adding at the same time a small portion of fresh soil or some manure.—M.

Hastening late Chrysanthemums.—Plants of any varieties from which late terminal blooms are depended upon, and from which exhibition flowers are expected, should now be pushed rapidly forward, or they will not develop blossoms in time for the shows along with those plants from which flowers are expected from crown buds. Especially should the Queen family have attention in this respect, as from terminal buds neat flowers are had, and, although not nearly so large as those from crown buds, they are in most cases of much better form, and especially in the case of the Queen of England, Alfred Salter, Golden Queen of England, and Bronze Queen of England are they of so much better colour. Indeed, there is no comparison between blooms taken from the two kinds of buds in their respective colours. The blooms from very early crown buds are hardly recognisable when compared with those from terminal buds. The application of sulphate of ammonia is the best means of forwarding late plants. It should be given both oftener and of greater strength than when used upon plants that need no special hurrying to force on the growth. Start at the rate of a quarter of an ounce twice a week, increasing the strength until three-quarters of an ounce is reached to each gallon of weak liquid manure.—E. M.

SHORT NOTES.—CHRYSANTHEMUMS.

Chrysanthemum G. Wermig.—Grown simply in the herbaceous border in front of the shrubbery or in beds amongst summer-flowering subjects, this variety is worthy of extended cultivation where yellow flowers at this time of the year are prized. Well grown plants reach 4 feet high when allowed a free, uninterrupted growth, without topping of the main shoot or leader. Of course, the more vigorously the plants are grown the better will be the foliage and the flowers.

Chrysanthemum Souvenir de Mme. Blaudinières.—This is an early flowering variety belonging to the Japanese Anemone section. It is opening its flowers in several places at the present time, and as it is distinct in colour it will be an acquisition to the semi-early class, more so on account of its Anemone character. The flowers are large, having heavy, flat guard florets, rosy crimson, tipped and splashed with gold in the centre of each petal. As an early decorative variety it will be of more value than as an exhibition sort.

Chrysanthemum La Vierge.—This variety is very useful for semi-early cultivation, coming in just when Mme. C. Desgrange is getting past its best, and the blooms being pure white, it is valued where cut flowers are needed for harvest festivals or other decorations. The size of a well-grown bloom is between that of a hybrid Pompon and Mme. C. Desgrange, and is convenient for vase decoration, either singly or in bunches, as cut from the plant. The habit is dwarf. Good flowering plants, not more than 1 foot 6 inches high and some as low as 1 foot, can be had in 8-inch pots by striking the cuttings in February, topping them about twice, and allowing plenty of space between each to preserve a bushy habit and prevent the growths being drawn up weakly.—E. M.

Lady Selborne Chrysanthemum.—In a short time there will be a capital display of bloom on plants of this variety, which were grown on the

method of which I will term semi-bush style, as the forwardest buds are commencing to unfold their petals. During the early part of October flowers of this pure white kind are much appreciated, not only on account of their colour, but for the light and elegant manner in which the blooms are formed. The plants in question are now each from 3 feet to 4 feet high, have about eight stems to each, each shoot producing fifteen to twenty blooms, with more smaller ones to follow. The manner of culture adopted is simple. Strike the cuttings in December along with the bulk of other varieties, top the leader at 4 inches and again at 6 inches high; serve the three shoots in the same manner which have sprung from the first topping. When the next batch of growths has extended 18 inches long a bud will form which will cause additional growths to be made. Remove the flower-bud and allow all the shoots resulting from this break to extend and flower as freely as they will.—E.

NOTES OF THE WEEK.

A LARGE piece of bedding out is to be abolished at Castle Howard, Yorkshire, and the best kinds of Roses planted instead. This is a wise change.

Lythrum alatum.—The graceful bearing of this pretty flower is charming. There is a plant of it on the Kew rockery, the flowers purplish, and borne on a slender stem amongst the small deep green leaves.

Rudbeckia speciosa and **Aster acris.**—A rich effect is obtained at Kew by planting *R. speciosa* as an edging to a bed, the centre of which is filled with *Aster acris*. The two colours go well together.

Calceolaria amplexicaulis.—We were pleased to see two beds of this fine old *Calceolaria* at Polesden Lacy. The soft yellow colour of the flowers is charming. It is better than any of the commoner kinds.

Agapanthus Mooreanus is quite a dwarf African Lily, not more than 2 feet high. The flowers are rich blue, and form an umbel about the same size as that of the common *umbellatus*. *A. Mooreanus* is in bloom on the rockery at Kew.

Hardy flowers at Castle Howard.—We are pleased to learn that much more attention is to be given to hardy flowers at Castle Howard. Such a magnificent place as this gives ample scope for bold groups, beds, and colonies of the best hardy plants.

Cassia corymbosa.—Large specimens some thirty years old of this plant are used in the beautiful flower garden of Sir W. Farquhar, Bt., Polesden Lacy, Dorking. In no other place have we seen such examples. The plants are one mass of flower, and last in bloom until November.

Autumn flowers at Westminster.—The flowers at the Royal Horticultural Society's meeting on Tuesday were principally Dahlias. Strange to say, there was not a Michaelmas Daisy, or any other good hardy autumn flower. Such a meeting is scarcely instructive.

Perennial Sunflowers amongst shrubs.—A good way of growing the perennial Sunflowers is amongst shrubs. They are so treated at Kew, and the effect is strikingly rich, far more so than when they are planted in borders. Many think the herbaceous border the only place for hardy flowers.

Parsley-leaved Bramble.—I send you a few bunches of the Parsley-leaved Bramble for you to see how well the plants are fruiting this season.—JOHN CARTER, *Keighley*.

** An excellent Blackberry, which we think is more suitable for English cultivation than any of the American kinds we have tried. It is also valuable for woodland and covert planting.—Ed.

Gundelia Tourneforti is a newly-introduced, bold-foliaged ornamental plant of considerable value. It grows on the plains of Afghanistan some 3 feet or 4 feet high, and has radical leaves often 3 feet long; these stick out like bayonets all round. It forms impenetrable thickets that nothing can pass. It will be useful for associating with *Aciphyllas*, *Rhaponticums*, *Rheums*, and similar plants.—T. SMITH.

National Vegetable Conference and Exhibition, Chiswick, September 24, 25, and 26.—This promises to be a specially interesting meeting, entries of exhibits having been received from all parts of the country. Scotland and Wales will be well represented. We also learn that M. Vilmorin, of Paris, will be present with a large number of exhibits, and consign-

ments from America are also expected. We may remind our readers that the entries close on the 21st, and that those who have not given notice should do so at once.

China Roses at Castle Howard.—These were delightful in late August. There is a luxuriant row of plants on each side of the walk leading from the house of the head gardener, Mr. Riddell. The Roses make a rich foreground to a line of Apple trees. Such a way of planting Roses should be repeated in other good gardens.

Hibiscus pedunculatus is a beautiful Mallow in bloom now at Pendell Court. It will grow well in a cool greenhouse, and is on that account especially valuable. The flowers are of a lovely shade of rose, large, campanulate in shape, and borne freely. Such a free-growing and handsome plant deserves to be well cultivated.

Parrotia persica.—In Mr. Gumbleton's excellent collection of trees and shrubs at Belgrove, Queenstown, a plant of this was last week very striking. It was about 12 feet high and as many through, and the leaves were brilliantly coloured. The bases remained green, but the rest of the leaves were deep red, save where they overlapped each other, the shaded portion remaining green.—F. W. MOORE, *Glasnevin*.

Aristolochia elegans, one of the most graceful of its class, has been in full bloom at Pendell Court for several weeks past. The flowers hang in profusion from a dense mass of the most luxuriant foliage, and in colour the broad cup-shaped limb is deep purple, against which the creamy white markings are in strong contrast; the eye is rich gold-yellow. The objectionable odour characteristic of many of the *Aristolochias* is, fortunately, absent in this Brazilian species.

Lilies at Kew.—Those who wish to see Lilies cultivated successfully should go to the Royal Gardens, Kew, where they grow luxuriantly planted out amongst *Rhododendrons* and other shrubs. These afford the needful protection. Early this week *L. speciosum rubrum* was a mass of bloom near the Palm house. Few hardy bulbs could give a more delightful display than these. The bulbs are planted amongst dwarf shrubs, and the colour of the Lily flowers is heightened by the contrast.

Salvia coccinea.—What a charming autumn plant this neat little *Salvia* is, and when grown in a mass, as we saw it the other day at Kew, few plants of its class can equal it. It is a dwarf-growing kind, never exceeding 2 feet in height, with bright scarlet flowers. The individual blooms are rather small, but they are produced in great profusion and are very telling. This variety is well adapted for pot culture, and if grown outside and lifted, the plants will continue to bloom through the autumn under glass.

Apelandra cristata.—This noble plant is flowering in one of the stoves at Pendell Court, Bletchingley, and it is not too much to say that *A. cristata* is the finest of its race. It is quite different from *A. Fascinator*, of which a coloured plate was given in THE GARDEN, Sept. 7, 1878. Though introduced from the West Indies as far back as 1733, it is comparatively unknown, and regarded almost as a novelty by many who saw the cut spikes of it exhibited by Mr. Ross at the meeting of the Royal Horticultural Society on Tuesday last. The plant bears large terminal branching spikes of orange-scarlet flowers, each spike measuring quite 2 feet in length. A well-grown specimen will keep the house gay for many weeks.

Michaelmas Daisies are now at their best, and it must be a severe frost that will destroy the flowers of this class of hardy plants. There are many good gardens where they are grown, but usually the varieties are of that rough, ungainly, coarse-growing type, quite unfit for choice positions. The back row of the herbaceous border is the usual place for them, and few think of planting them amongst *Rhododendrons* and other shrubs, over which they throw their graceful sprays of flowers. In a Sussex garden a break of *Rhododendrons* with Michaelmas Daisies amongst them was the finest piece of planting we have seen. There are good and bad kinds, and the best are *Amellus*, *linearifolius*, a coloured plate of which was given in THE GARDEN, February 23, 1889; *hybridus nanus*, whose flowers make a cloud of purplish lilac; *acris*, now in the fullest beauty;

Chapmani, *Shortii*, *horizontalis*, the late-blooming *grandiflorus*, *turbinellus*, *levis*, the tufted *dumosus*, and *Novæ-Angliæ*. Considering there are about 200 varieties of Michaelmas Daisies, and the majority weeds of the wildest type, it requires care to select the best.

Chironia palustris is a pretty little *Gentianad* from the Cape and gives promise of proving a useful garden plant. It is less than a foot high, has fleshy, lance-shaped, bright green leaves, and an erect raceme of numerous rose-purple flowers as large as those of Primroses, but fleshy and lasting. As a pot plant for the cool greenhouse it is at least as ornamental as the other *Chironias*, but its value will probably be in its fitness for outdoor bedding in summer. It grows well and ripens abundance of seeds. Plants of it may be seen at Kew, both in the houses and in a sunny border outside.

Flame Flowers.—I send you per parcel post a spike of *Kniphofia maxima globosa*. I did not see it in bloom either at Kew or at any of the London gardens I visited last week. My plant is a robust, healthy vigorous one, not very tall, say under 4 feet. It has five spikes about the same height, and the appearance is very handsome. *K. nobilis* and *Saundersi* have more blooms; my *nobilis* had thirty, but they come out earlier and not so uniformly. I send you a list of what I have in stock: *Serotina*, *corallina*, *Macowiana*, *Burchelli*, *Rooperi*, *sarmen-tosa* (two varieties), *Uvaria* (two or three varieties), *Saundersi* (true), *nobilis*, *grandiflora*, *natalensis*, *maxima globosa*, and a very pale unnamed specimen.—HENRY SOUTHALL, *The Craig, Ross*.

*** A very handsome flower—a thick oblong head.—ED.

Phaius callosus.—Although discovered and introduced to this country over forty years ago, this species still remains a practically unknown plant in our collections. Possessing all the advantages of the well-known *P. grandifolius*, both as regards the handsomeness of its foliage and flowers and its easy culture, it fully deserves more general notice, especially as it blooms from the present time until December, a season when no other *Phaius* (except *P. bicolor*) is in bloom. It is a native of Java, whence a plant now flowering at Kew was sent two years ago. The leaves are dark green, 1 foot to 2 feet long, and plaited after the manner of those of *P. grandifolius*. The flowers are also similarly arranged on the upper portion of stout erect spikes, and each measures 3 inches to 4 inches across. The sepals and petals are reddish-brown and the lip is white, with a tinge of pink. It requires treatment similar to that usually given to *P. grandifolius*.

Miltonia spectabilis Moreliana.—A fine plant of this, the most beautiful of all *Miltonias*, is now flowering at Kew. It bears seven fully-expanded blooms, each of these measuring from 4 inches to 4½ inches across. The sepals and petals are of a rich deep purple, and the lip, which is 2 inches in diameter, is of a bright rosy-purple, beautifully veined with darker lines. A strong recommendation of this plant is the long time its flowers remain perfect—usually over two months. The yellowish tinge of the leaves and pseudo-bulbs of all the varieties of *Miltonia spectabilis* is not one that satisfies the cultivator, although it is natural and consistent with perfect health, and attempts to change it are more likely to result in harm than good. The best position for *Miltonias* is in the Cattleya house, where they should be guarded from the direct rays of the sun and kept moist at all times, but more especially when in active growth. They may be grown on teak rafts, with about an inch layer of peat fibre and *Sphagnum* about the roots, and suspended from the roof. When this method cannot be adopted, they may be also successfully grown in well-drained pots.

Curiosities in plant names.—Complaint has sometimes been made (and not without reason) of the inordinate length of some of the Latin names of plants, but it appears that many of the Mexican plant names are open to the same objection. The following specimens are taken from Dr. Berthold Seemann's "Verzeichniss," or catalogue of the

plants collected by him in North and South America, in which he has been purposely careful to give the vernacular along with the botanical name of each plant. The Mexican name for *Cheirostemon platanoides* is "Macpalcocitlquahuitl," that for *Maxillaria superba* is "Cozticzacatzacuchotitl," and that for *Maxillaria liliacea* is "Iztactepetzacucxochitl." The catalogue contains many similar jaw-breakers.—W. M.

The Alliums are not as a rule good border plants, but an exception may well be made in favour of the handsome *A. pulchellum*, which is just now very pretty. It has many points to recommend it besides its free-flowering habit. It is dwarf, neat and compact. The flowers are of an agreeable rosy-purple, and borne in the greatest profusion. It increases rapidly, though not to a troublesome extent, and is perfectly hardy. It will be all the better for lifting every few years, as it has a tendency to form a compact mass, thus reducing the flowers and rendering the plant very dwarf.

Autumn Crocuses.—The finest of all the autumn Crocuses is undoubtedly *C. speciosus*. The unusual spell of fine weather has just suited this species, the display of handsome bluish violet flowers being equalled by that of no other plant in the hardy flower garden. Its habit of early flowering can always be depended on, and it is rarely that the flowers of this beautiful species are damaged by early frosts, the blooms being usually over before these set in. As a rock plant it has no equal now, and it will be found particularly useful as an edging or in small groups near beds of other autumn-flowering plants. It increases perhaps the most rapidly of all the Croci, and the young corms formed this year will flower the second year if liberally treated. Other species in flower now are *nudiflorus*, *longiflorus*, *cancellatus*, *Clusi*, &c.—K.

Rudbeckia purpurea.—Few plants amongst the purple-flowered composites are so welcome at this season as the above, which we have also seen in gardens under the name of *R. serotina* and *Echinacea purpurea*, the latter name being still retained in the "Synoptical Flora of North America." It is said to be a shy flowerer, and we find it so when the clumps have become massed, but we easily remedied this by division every other year, or, better still, raising young plants, which are no trouble, always certain, and give larger and finer flowers. *R. purpurea* requires rich deep soil, and makes a most handsome border plant. *R. speciosa* with its golden yellow rays and purple-black disc is also a very charming plant and very desirable for beds or rockeries. *R. hirta*, which is not a good perennial, is also worth growing even beside *R. speciosa*.

Fallugia paradoxa.—This uncommon and pretty half-hardy shrub is now blooming for the first time in the open air against a south wall in my flower garden. The plant is well figured on plate 6660 of the 108th volume of the *Botanical Magazine*, and is a native of New Mexico and the dry interior western regions of North America, between the Rocky Mountains and the Sierra Nevada, where it inhabits open plains and hills often at an elevation of 7000 feet. With me only a single flower is borne at the termination of the young and very slender branchlets, many of which rise from the base of the plant; but in the plate as many as five flowers appear at short intervals up the end of the shoot, and it is to be hoped that when my plant gets stronger it may also prove equally free blooming. The flowers are pure white and somewhat thin in texture, with a bunch of pale yellow stamens in the centre. This plant is closely allied to *Geum*, chiefly differing from it in the shrubby habit; it has even been described under the synonym of *Geum cercocarpoides*, and also as *Sieversia paradoxa*. The seed carpels have also a very curious and quite ornamental appearance, somewhat resembling those of *Anemone sulphurea*, and ending in capillary feathery styles of from 1 inch to 1½ inches long. I have not yet tested its hardiness, but hope that against a wall it may stand our usually mild winters with impunity.—W. E. GUMBLETON.

TREES AND SHRUBS.

THE JAPAN CEDAR.

(CRYPTOMERIA JAPONICA.)

ALTHOUGH seeds of this handsome Conifer were received by the Royal Horticultural Society through their collector, the late Mr. Robert Fortune, as far back as 1844, really good specimens are seldom met with in England and Scotland. In Ireland the mild climatic conditions,

Conifers is very common, not only in gardens, but also in the open country where it is used for forming avenues along the public roads, especially along the approaches to spots associated with important historic personages and events. One of the finest avenues, probably the finest of its kind in the world, extends from the town of Namada to Nikko, the burial place of a great Japanese ruler who lived some 300 years ago. The avenue extends for fifty miles, and consists chiefly of *Cryptomeria*

Channel, too, some remarkably fine and graceful specimens may be seen, more graceful, indeed, than the subject of this engraving, but from certain causes, to be entered into presently, they are by no means so plentiful as they should be considering that seedlings for years past have been cheap and abundant.

Having myself handled nearly all the Japanese Conifers, and never lost a single example, no matter how severe the winter, I think I may venture to say that this *Cryptomeria*, found so abundantly on the mountain slopes, where it forms the chief part of the Japanese forests from their base to 1500 feet of elevation, also in swamps and in soils of all qualities, is quite as hardy as any other species. Indeed we have ample proof of this in the numerous healthy, but imperfect trees planted high and low prior to the memorable winter of 1860. This point settled, the question arises, Why does the *Cryptomeria* refuse to grow as freely as the Silver Firs of more recent introduction, and now making such good progress in this country? Turning to Messrs. Veitch's "Manual," we find the cautious, but well-informed authors saying: "This is owing, probably, to climatic causes, the most potent being a less annual rainfall and a lower average summer temperature than in Japan; that it is only in deep rich soils with abundance of moisture and protected from piercing winds that the *Cryptomeria* develops the fine ornamental qualities it is seen to possess in its native country." These facts I know to be correct, as the best trees at Eastnor, some 40 feet in height, are planted on a deep, moist, marly loam, but a few feet above the level of a large lake, and completely sheltered from rough winds by the adjacent surroundings. These trees are going up with straight single boles covered with rough reddish-coloured bark, and densely clothed with soft green branchlets from the turf to the summit. In these trees there is no shedding of dead branchlets after the driest summer, whilst others only 100 yards distant on the limestone rock are thin, with numerous base branches striving to form sub-leaders. Then, again, as to soil, less than a mile away, several trees on a deep, broken, rocky, igneous loam and sheltered by *Pinus insignis* are growing splendidly. At this place, then, independently of the Emerald Isle, we have conditions favourable and unfavourable, and those who would succeed with this charming Conifer may draw conclusions from the remarks now placed before them.

Judging from the lateral dimensions of the Castlewellan tree, one may assume that it has been allowed to have its own way from its youth, and this, perhaps, is the most natural course, especially where ground space is unlimited; but *Cryptomerias*, like *Thujaopsis dolabrata*, which also inclines to the production of numerous sub-leaders, should receive a little attention in the way of stopping for the first few years after they are planted, otherwise they will never make the tall, straight boled specimens so plentiful in Japan and in the north of China.

The *Cryptomerias* form a very small family, the most common being the subject of this notice. Then we have *Cryptomeria j. Lobbi*, sent by the collector whose name it bears to Messrs. Veitch in 1853, and last, but not least beautiful, the elegant *C. Veitchi*, introduced by Mr. J. Gould Veitch in 1861. *C. j. Lobbi* grows into a tall compact tree with slightly pendulous branches clinging close to the main stem. The foliage is of a bright deep green, the leaves are shorter than those of *C. japonica*, and they never change col-



Cryptomeria japonica. Engraved for THE GARDEN from a photograph by the Earl of Annesley in his garden at Castlewellan, County Down, Ireland.

the great rainfall, and the deep moist soil seem to suit it fairly well, and yet the tree does not seem to develop with the vigour which characterises it in its native habitat and in China. In Japan it is extensively grown, not only for ornament, but also for use in carpentry and joinery, and the wood being soft, fine in grain, of large dimensions and pleasing in colour, it is invaluable, as it is easily converted by the builder and cabinet-maker. The late Mr. J. Gould Veitch, who spent much time in the country, states that this finest of Japanese

japonica, the trunk of every tree being as straight as an arrow, and averaging from 130 feet to 150 feet in height, by 12 feet to 15 feet in circumference at the base. To those who for the last forty years have been trying their best with perhaps the only refractory Conifer we have received from Japan, a picture like this is not a little tantalising, but no one need despair, as the enormous mass herewith figured from a tree growing in the Earl of Annesley's grounds, Castlewellan, Co. Down, shows that it is pretty well at home in Ireland. On this side of the

our, no matter how hot the summer or cold the winter. It requires a deep rich moist soil and while enjoying full exposure to the sun it must have shelter from cutting winds.

Cryptomeria Veitchi, or *elegans*, is one of the most beautiful and useful Conifers ever introduced into British gardens, and being so easy of propagation, rooting very freely by cuttings, it is extensively used in the winter garden where the rich dark plum colour of its foliage produces a most charming contrast with the grey-green and gold met with in Junipers, *Retinosporas*, and shrubs. In the pinetum its compact cylindrical habit and warm bronzy crimson foliage entitle it to a prominent place no matter how small the selection. It is by no means fastidious as to soil provided it is good, deep, and moist, but it is sensitive to the effect of shade, growing rapidly out of the perpendicular when placed in front of larger trees intended to afford shelter from the north and east. Being so dense in habit, reminding one of the beautiful Australian *Araucarias*, especially *A. Cunninghami*, with extra branches introduced between the whorls, it requires close attention during heavy falls of snow. A touch with the pole relieves ordinary trees, but the dense branchlets of this *Cryptomeria* retain snow like a fleece of wool. They do not, however, break, and it is just possible this packing may serve a good end when the weather is exceptionally severe.

W. C.

VARIETIES OF HEATHER.

ALL the hardy Heaths are very beautiful, and some of the varieties differ widely from the typical form, but in none of them is this character more noticeable than in the common Ling, or Heather, of which there is now in our gardens a great many varieties, differing from each other and from the type in habit, the colour of the foliage and also of the blossoms, and in the time of flowering, as well as in other particulars. Where a collection of hardy Heaths is grown, the forms of the Heather should be well represented, a very pleasing effect being produced by planting a clump or mass of each sort rather than dotting the plants indiscriminately here and there. But where beds already exist and it is desired to plant them with hardy Heaths, a good deal may be done by employing the dwarf cushion-like varieties as an edging to the larger growing forms. While places on the rockwork may be found for the different Heathers, perhaps the condition under which they are seen to the greatest advantage is when they are carpeting the ground from whence spring groups of the larger *Ericaceæ*, such as *Rhododendrons* and similar subjects. A selection of the best varieties would include *Searlei*, a bold, free-growing form with pure white blossoms. This kind is, notable from the fact that it will often flower till long after the others are past, that is to say, till late in the autumn, a peculiarity also shared by another, *Alporti*, whose deep purple blossoms are frequently produced till frosts set in. Like *Searlei*, this is a free-growing variety. The form known as *alba minor* is a low, dense, but upright-habited kind, that produces its pure white blossoms in the greatest profusion. In *rigida alba* the flowers are also pure white, but the habit is more spreading and the spikes of bloom larger. When out of bloom *pubescens alba* may be readily distinguished by its downy foliage, which is so pronounced that a mass of it is of quite a greyish hue. The flowers of this are also white. One of the brightest coloured is *dumosa rubra*, which in growth is very like *alba minor*, but the flowers are of a rich purplish red colour. A mass of this stands out very conspicuously from the ordinary purplish coloured form. Another variety known as *coccinea* is also very bright, and must be included among the best, with which *tenuis* must also have a place assigned it. A very distinct

form is *flore-pleno*, in which the blossoms are quite little rosettes. This variety is, however, very interesting from the fact that double flowers are rare among the Heath family, the only other instance that I can just now recall being the Australian *Epacris onosmæiflora*, or *purpurascens*. Varieties of the Heather whose flowers are not the most prominent characteristic would include *variegata*, in which variegated leaves are interspersed with the normal green ones. A miniature variety is *pygmæa*, which forms a dense cushion-like mass of a very deep green colour. It is so different from the common kind that it more nearly resembles a dense growing Moss than a Heath. There are two extremely pretty golden-leaved kinds, one of which is a rich bright yellow, while the other is, where fully exposed to the sun, a kind of bronzy orange. These forms of Heather are thoroughly hardy, and even with those that flower earliest the bulk of shrubs have passed their flowering stage before these open a single bloom.

T.

THUJA STANDISHI.

THIS is the most uncommon species of *Thuja* in our gardens, for it is very rarely met with, while the different forms of *Thuja occidentalis* and *T. gigantea* are frequently planted. *T. Standishi* is a free-growing species, more sparsely branched than in the case of the American *Arbor-vitæ*, but with much stouter and more spreading branches than in the ordinary form of that species. The colour of the plant when growing is of a pale green, which during the winter where exposed becomes slightly bronzed. It is a native of Japan from whence it was introduced by Fortune, and it bears a resemblance to the Japanese *Thujopsis dolabrata*; indeed by some this particular species of *Thuja* is classed with the *Thujopsis*.

Of the American *Arbor-vitæ* (*Thuja occidentalis*) there are a great many well-marked varieties, especially noticeable being *lutea*, of which at the present time the whole of the young growth is of a rich golden yellow colour. It is now one of the brightest among golden-leaved Conifers, but will deepen in colour as the season advances, and in winter become somewhat bronzed. It is of American origin, and is there known as the *George Peabody Arbor-vitæ*. One somewhat in the same way as the last is the variety *Vervaneana*, which differs, however, in the branches being rather more slender, and the colour now is a kind of greenish yellow, instead of the rich hue of the other. In winter, too, it becomes of a yellowish brown tint. Another variety of American origin is *alba spica*, or *Queen Victoria*, but, like most variegated Conifers, it is not of much value. The weeping form of the American *Arbor-vitæ* is quite a curiosity, for if fastened to a stick during its earlier stages it will form a clear stem, and from it usually a few branches are produced, which as soon as they are a little distance from the main trunk take a downward direction, while the whole of the minor branchlets are distinctly pendulous, and clustered at their extremities. The whole plant is most curious, owing to the long pendulous branches which in many cases are devoid of foliage except just at the tips, and there it is present in dense tufts. If struck from cuttings and allowed to grow at will it forms a singular creeping plant, whose place is on a ledge of rockwork or a similar position. The lover of miniature Conifers will be pleased with the variety *Hoveyi*, which forms a compact bush, whose foliage is of a brighter green than that of any of the others. In *Eilwangeriana* the young foliage has become to a certain extent fixed, and around the base of the plant little else is to be seen, and in this state it greatly resembles a *Retinospora*. The above include the most strongly marked varieties

of the common American *Arbor-vitæ*, though one usually spoken of as a distinct species is in all probability but a seedling form of it. I allude to *T. Wareana*, which is shorter, much denser, and of a deeper green than the other, and for limited spaces it is a useful low tree. *T. plicata* is a native of some of the coldest districts of North America, and is consequently well adapted for planting in very cold localities. In general appearance it is like an unusually neat and compact form of the common species. There are two varieties of it, the first, *dumosa*, being a little dense bush not more than 2 feet high, and *variegata*, some of whose branches are blotched with golden yellow.

The last to mention and the finest of all the *Thujas* either from an ornamental or an economic point of view (for it attains a timber size in this country) is *T. gigantea*, which forms a tall, slender, graceful growing tree. Its usual habit is that of an open pyramid, a striking feature of it being the bright glossy green of the foliage, which colour, unlike that of other *Thujas*, is retained during the winter months. It forms a very handsome lawn tree, and where isolated assumes the character of a perfect pyramid from base to summit, and yet is quite devoid of any stiffness or formality. There are many handsome specimens of this *Thuja* scattered about in various parts of the country, for it is of rapid growth when once established. Very few Conifers have aroused so much controversy with regard to their nomenclature as this *Thuja*, for seeds of it appear to have been sent to this country in company with some of the deep green columnar growing *Libocedrus decurrens*, or at all events the two distinct plants have been very much mixed up. It is claimed for Jeffery that he first introduced this *Thuja* in 1851, but it was generally distributed by Messrs. Veitch, whose collector, William Lobb, sent home a quantity of seeds in 1853, from which plants were raised and distributed under the name of *Thuja Lobbi*, which it is still called by many. There is of this a variety, *viridis*, which is far richer in colour than the ordinary form.

T.

Cotoneaster horizontalis.—This is an extremely pretty species of *Cotoneaster*, and one that, while belonging to the same section as *C. microphylla* and *C. buxifolia*, is yet very different from any other *Cotoneaster* in cultivation. The great feature of it is the arrangement of the branches, which are quite flat and disposed in an almost horizontal manner, and being clothed with small deep green leaves, a branch of this species reminds one of the South American *Azara microphylla*, which also has its branches arranged in a frond-like fashion. *C. horizontalis* loses the greater part of its leaves during the winter, on the approach of which most of the foliage, with the exception of that towards the points of the shoots, changes to different shades of red, when it is very rich and telling. Another showy autumn feature is, however, furnished by the bright-coloured berries, which in this respect surpass those of the other dwarf *Cotoneasters*. The generally sturdy style of growth is another feature in which it differs from the rest. Like the species more nearly related to it, this *Cotoneaster* is a first-rate subject for planting on the rockwork, but it should be so situated that there is ample room for its full development, while it is also sufficiently vigorous to be associated with other shrubs. A very pleasing effect is produced, where there is a belt or screen of shrubs with a stretch of Grass in front, by planting this *Cotoneaster* a little in advance of the bulk of its associates, as then the spreading branches just sweeping the turf will form a most effective foreground. Numbers of different subjects might also be mentioned as well adapted for a similar purpose, among which may be noted the other dwarf species of the same genus, which are

strikingly beautiful as isolated specimens on the lawn. *C. horizontalis* is a native of China, and was introduced therefrom by the Abbé Armand David in 1885, but up to the present it is very little known, though no doubt it will before long be more generally cultivated, for it is a plant that may be recommended to the notice of our tree and shrub nurserymen; and it is by no means difficult to increase, for besides seeds which are freely produced, cuttings also strike readily. The berries have within the last week rapidly changed in colour, the bulk of them where exposed to the sun having now assumed their bright vermilion tint.—T.

LATE-FLOWERING SHRUBS.

INDIGOFERA GERARDIANA is about as distinct and pretty an August flowering shrub as could well be desired. Generally it is to be seen of neat habit, with long slender branches, and abundantly-produced racemes of rosy pink flowers. In the home nursery at Holwood there is a good specimen. The foliage is of a light green shade, not too thickly borne on the branches, and the flowers are not in the least hidden, but owing to the contrast in colouring between these and the leaves they are very conspicuous. It is a Himalayan shrub, and one that deserves to be extensively cultivated wherever ornamental flowering plants are in request. It will grow well in light peaty soil.

OLEARIA HAASTI when seen in bloom in clumps of from half a dozen to a dozen plants in each can hardly be surpassed. Here we have it singly and in clumps, one and all being at present studded with white Daisy-like blossoms. So freely are the flowers produced that at a short distance away one is puzzled to account for the sheets of white. No plant is more readily managed than this *Olearia*, for it grows and flowers with us in almost every conceivable position and soil. Even when out of flower the neat, leathery, evergreen foliage makes it a very handsome plant.

THE BLADDER SENNA (*Colutea arborescens*).—Every lover of hardy, free-flowering shrubs should include a specimen of this distinct and handsome plant in his collection. It blooms almost unceasingly for several months, and afterwards the large inflated seed-pods of a reddish hue are about as conspicuous as were the yellow pea-shaped flowers. It does well either as a standard or wall plant, but I fancy that it blooms and produces seed all the more freely where the kindly warmth of a wall or house side is provided. Ofttimes do I wander out of the way to have a look at a 12 feet high and 12 feet wide specimen of the Bladder Senna that covers with luxuriant foliage, flowers, and fruit a brick wall on the roadside at Keston. It has been a fine sight for nearly three months past, the wealth of flowers and big inflated purplish seed-pods being produced at one and the same time. A standard specimen in the Holwood grounds does not flower nor fruit so freely as that just referred to. An open, but sheltered position and in full sunshine will suit it best, and as for soil, heavy loam would not seem to be far amiss.

SPIRÆA DOUGLASI cannot be passed unnoticed amongst late summer-flowering shrubs, for it is undoubtedly as ornamental a plant as could be chosen from any list. Then it grows with such freedom, increases so rapidly, and blooms so profusely, that it is just the plant for a wild woodland garden, or where it can be allowed to grow at will. The bright pinky spikes of flowers are very showy, while the neat, upright habit of the shrub renders it of great value for special purposes. There is a form the flowers of which are almost white, and it is very desirable for mixing with the typical plant. Dampish loam and an open and sunny position suit it well.

RUBUS ODORATUS is one of the most ornamental of the Bramble family, forming a rather dense upright bush fully 4 feet high, with numerous stout twiggy stems. Although July is its "hey-day" for flowering, still it is so persistent in that respect, that in August, and even September, a good sprinkling of flowers will be found on a healthy and fully

developed specimen of this Bramble, or Raspberry, as it is called. The sweet-scented leaves are large and showy, being broadly five-lobed and irregularly toothed, while the large circular flowers are of a pleasing purplish red tinge. It grows well here in the shade of large-growing trees and in dampish clayey loam.

THE TRAVELLER'S JOY, OR OLD MAN'S BEARD (*Clematis Vitalba*), though a native plant, is, nevertheless, one of great beauty, and to see it at present on many of the old Kentish hedges, and blooming there with the greatest freedom, is well worth a visit. In old worked-out chalk pits it runs wild, clambering up the almost perpendicular rocky face and rooting at every flattened ledge, or, failing this, sending into the seams and clefts its long, tough, fibry roots, and then draping the ledges beneath with its masses of tangled foliage. After the flowers appear then come the feathery tufts of silky awns with which they are furnished, and then fresh interest in the plant is awakened, for the hedge sides and tops then present a most peculiar spectacle.

GENISTA LITNENSIS, though seldom seen, is one of the prettiest and most desirable of Brooms. The bright yellow flowers are of great substance and thickly produced, while the whole contour of the plant is very elegant. It is a European shrub, but one that, judging from how seldom it is seen, must be rare. Being of very free growth and quite hardy in the south of England, at least, as well as most ornamental, whether in or out of flower, I may be excused for recommending its more general cultivation. A light and warm soil suits it admirably.

A. D. W.

The scarlet-berried Elder (*Sambucus racemosa*).—This pretty deciduous tree or shrub is, in some respects, the most ornamental plant of the genus to which it belongs. It is indigenous to various parts of Europe, and is also found on the mountains of Siberia, where it is said to attain a height of some 15 feet. In this country it has proved perfectly hardy on very exposed situations at high elevations, and is likewise adapted for town planting, as it bears smoke well. It thrives on all kinds of soil, provided they are thoroughly drained and well broken up by trenching previous to planting. The species sometimes exhibits a little variety in the shape and size of the foliage, but this is caused in a great measure by the influence of soil and situation. When thoroughly established, it forms an extremely handsome specimen plant, its foliage being of a lively green colour, pinnate, and serrated around the margins. The plant, however, is always seen to the best advantage when covered with its pretty scarlet berries in the month of August. These are produced in clusters at the terminal points of the twigs and branches. In some parts of the country it appears, however, to be rather shy in fruiting; at any rate, I have never seen it produce its fruit so freely in England or Ireland as I have in the north of Scotland, so that it appears to fruit best in exceptional situations. It is generally propagated by cuttings, which are inserted in sharp sandy soil any time after the growth is matured in autumn. In making the cuttings, a joint of the shoot should be left at each end, the one at the base to facilitate the formation of roots, and the other that of branches at the top. As the cuttings grow rapidly they should have plenty of space, and after one year's growth in the nursery, they will be ready for planting out where they are to remain.—J. B. W.

SHORT NOTES.—TREES AND SHRUBS.

Purple-leaved Lilac.—Leaves of a purple-coloured Lilac have been sent us by Mr. A. Waterer, Knapp Hill. The colour is as rich as that of the Purple Beech.

The Silver Cedar (*Cedrus atlantica glauca*).—We have received from Lord Derby's place at Keston, Kent, a very graceful bough of the Silver Cedar bearing handsome, fully-grown cones.

The Guelder Rose in berry.—The berries of the common Guelder Rose at this time of the year

make a good show, for where the trees do well they are borne in great profusion, and being arranged in flat, Elderberry-like clusters, a specimen when laden with them is quite glowing with the rich, sealing-wax hue of the berries. The Guelder Rose is seen under the most favourable conditions when the soil is fairly moist, though it will hold its own even in dry spots.—T.

FLOWER GARDEN.

FLOWER GARDEN NOTES.

GERMAN SCABIOUS.—These would be more largely grown were it not the generally accepted opinion that they will not flower till late in autumn, at any rate not till well into September. That they do flower splendidly during that month and October cannot be disputed, but they will bloom just as finely in June, July, and August. It is simply a question of earlier sowing. We have a grand batch of the plants here that have been in bloom for nearly two months, and by present appearance we may vouch for their continuance in the same state for at least another six weeks. The seeds were sown in heat the first week of February, and the plants grown on without check in a cool house and afterwards in frames, and were gradually inured to bear full exposure prior to final planting out about the middle of May. They have well repaid the little care bestowed on planting them carefully and in rich soil; also for staking and tying up each plant separately, for all of them are more than a yard high and have flowers proportionately large, many of them being as large as the finest Zinnias, and of every conceivable hue of colour from pure white to nearly black, and all without exception are richly perfumed. I have never been able to grow the dwarf varieties to my satisfaction. They always flower prematurely and too freely for the growth of the plants; consequently they die off before the season is ended.

MICHAELMAS DAISIES.—I get more deeply interested year by year in perennial or hardy herbaceous plants as the flowering season of each species comes round. Our collection of these beautiful autumnal flowering Starworts is very limited, and I suppose none of our kinds could be described as new, but to me the year that has elapsed since they last flowered has given them all the charms of novelty, for now that their flowers are gradually unfolding, the anxiety to see them in full beauty is just as keen as it ever was. The tall varieties, *A. dumosus*, *Novæ-Angliæ*, *pulcherrimus*, *grandiflorus* and *versicolor*, are now in full bloom in the back part of our herbaceous border that previously has been gay with *Delphiniums*, *Spiræa palmata*, *Galegas*, and other earlier-flowering species of plants, this varying season of flowers planted in close juxtaposition being perhaps the most important to consider at the time that planting arrangements are made for such borders. Of course, the reason for thus distributing the different species will be apparent to everyone, namely, that of having flowers evenly distributed at all seasons over the whole of the borders. The tall kinds are indispensable for the back part of borders, but personally I have a preference for the dwarfer species, these bearing in a general way finer flowers and having the stems well clothed with foliage to the ground-line, which cannot be said of the tall varieties, as the stems of these are generally bare of leaves to about half their height. The best dwarf kinds in our collection are *A. Amellus* major, *discolor* major, *Amellus* *bessarabicus*, *pyrenaicus*, and *ericoides*. Two or three varieties of these are already in good flower, and near them are good clumps of Japanese *Anemones*, *Gladioli*, late-flowering *Phloxes*, and *Hyacinthus candicans*, so that the borders are about as gay as they have been at any time since the Iris and *Pæonia* season.

COMMON BANEERRY (*Actæa spicata*).—Judging by the questions I am asked about it, this grand herbaceous perennial seems to be little known. I can only find it in one of the many hardy plant lists that one now receives, and in that it is very imperfectly described. In Paxton's *Botanical Magazine* it is stated to be a native of "British rocks," but

judging by the immense shrub it makes in the open border, barren rocky ground can hardly be its right position, and I should like to learn whether it is to be found growing wild in Britain. Planted in the best part, both as regards soil and position, of a hardy herbaceous flower border, it quickly grows to the size of a large shrub. I have frequently cut long wiry leaf-stems from the plants 2 feet in length, and the flower-spikes upwards of 5 feet. We have several now of that measurement. The flowers can hardly be said to be pretty. In colour they are a dingy white, and in form resemble a long, narrow Bottle-brush. Amongst other things the plants look very majestic, and continue in good flower from a month to six weeks. I purpose increasing my stock as largely as the division of the plants will allow.

FIELD POPPIES.—Nothing in the flower garden either last or during the present season has been more beautiful in its way than the Field or Shirley Poppies. Everybody exclaims on seeing the several clumps and great variety we have of them, "How pretty! How beautiful! What magnificent Poppies!" and so on. No one will, I am sure, dispute their beauty, but personally I prefer a good Phlox or a dense bush of Michaelmas Daisies. Occasionally, however, one must give way to the popular taste, and in this instance I have done it willingly; the colours of the Poppies are rich and varied, and some of the flowers are large, others medium and small, double and single, and what to many is of greatest importance of all, the plants are easy to raise, no heat being required. Simply sow the seed where the plants are to flower, and thin the seedlings out to at least 6 inches apart from one another.

REFINED COLOUR BLENDING.—I suppose that everyone knowing anything at all about flowers has noted how pleasing Primroses and blue Violets are in mixture, but these flowers are by no means so beautiful in mixture as are the light sulphur-coloured Marguerites and the light blue-coloured Agathæa cœlestis. The very simplicity of these two flowers apart from their beautiful shades of colour makes them attractive, and arranged in large masses—as we have them—they are doubly so. Of course, a certain amount of greenery other than their own foliage is necessary to do them full justice, and this we obtain by planting at regular intervals over the entire arrangement standard plants of *Grevillea robusta*, and the outer or encircling line consists of the beautiful *Herniaria glabra*. The Marguerites grow so much taller than the Agathæa, but this difficulty is obviated by planting the Marguerites thinly—indeed I may say as standards. As cut flowers for vase and table decoration a mixture of the two flowers with a few fronds of Maiden-hair Fern intermixed is exceedingly pretty, and both of them keep in good condition a long time. W. W.

Marigolds at Chiswick.—The trial of both African and French varieties which may still be seen at the Royal Horticultural Gardens, Chiswick, of these gay, but tender annuals shows what miserable rubbish the Germans grow and sell to English purchasers as compared with the fine pure strains we have at home. Of both African and French forms the Continental forms are wretched stuff indeed, the flowers poor, semi-double, and devoid of form and quality. Compare these with the fine African varieties growing there from Messrs. Dobbie and Sons, Rothsay, or, if I may modestly say so, what I have for many years grown here. The Messrs. Dobbie have Prince of Orange, fine double orange, and Lemon Queen, a duplicate of the former of a lemon hue, both of the finest quality and size; their strains are limited to these two set colours. I have here some half-dozen or more diverse shades of yellow, from rich orange to pale lemon, and on flowers of great size. I measured several this year from 12 inches to 15 inches round, really superb double flowers, compared with which the German strains are poor indeed. In the case of the French section, the best sorts are the dwarf, compact yellow, *aurea floribunda*, the dwarf striped, and the lurid pale yellow Electric Light, as against which the continentals have nothing

worthy of growing. It is wonderful, therefore, that British seedsmen should purchase these wretched strains, but probably because they are both cheap and nasty. I should like anyone favourable to the German rubbish to see both dwarf yellow and striped as growing here plants 14 inches to 16 inches high and 18 inches to 20 inches through literally masses of handsome double flowers. Were they of German growth our seedsmen would never tire of extolling them.—A. D.

HARDY AND OTHER FUCHSIAS.

AMONG the hosts of flowering shrubs, there is not one more graceful, more beautiful, or so continuous blooming as the Fuchsia; and yet its merits are but poorly recognised in many gardens, both great and small. The tufts of hardy Fuchsias are often the pride of the cottage gardens, and well they look, though perhaps they have stood in the same spot for many years.

About here (Suffolk) the Fuchsia seems to be a favourite flower with the cottagers, for, in addition to the bushes of hardy kinds, they grow well in their little beds and borders varieties which we place in houses.

I frequently see the old Rose of Castile, Mrs. Marshall, Lord Beaconsfield, and Madame Cornellisen in a cottage garden. These plants are taken up when frost comes, potted, and stored away in a cellar, or other convenient place, till spring comes again. Some of these cottagers often point with pride to fine plants that they have so treated and kept for the past ten or twelve years. Among the hardy kinds there are several that, especially in the southern and western parts of the country, will grow into great bushes, and which become the most conspicuous, as well as the most ornamental, feature of the garden.

I once saw isolated upon a lawn a bush of Fuchsia globosa, which was 10 feet high and 12 feet through. Standing alone upon a nice spread of turf, it was simply magnificent. *F. globosa* and *F. Riccartoni* are two of the hardiest and most common kinds, as they grow into huge bushes, which are rarely killed by frost. On the other hand, some kinds are killed to the ground every winter; but this is no disadvantage, for they have then only to be treated as herbaceous plants, by cutting them down to the ground, and if necessary protecting the rootstocks with a few ashes. When they start again next season it is surprising how rapidly they develop into graceful and beautiful bushes. *F. gracilis* is one of this type, for it is killed to the ground nearly every winter, yet such is its vigour that in a single season it will often grow 6 feet high, especially in a moist district. The shoots are slender and of arching habit, whilst the blooms are long and borne on slender stalks. When well grown it is the most graceful of the whole family. *F. discolor* is a dwarf variety and very hardy, whilst *F. coccinea* and *F. corallina* are beautiful, but not often grown or seen.

But, in addition to reputed hardy kinds, some of those we grow in houses, well treated as herbaceous plants, live through the winter, and in specially favoured districts some may live as bushes.

Madame Cornellisen, the old and well-known double white, is one that may be so treated, and the result is far superior to anything that is done by starting the plants under glass and then placing them in the open air. In fact, success depends upon all the growth being made in the open air, and that is why the Fuchsias in cottage gardens previously alluded to are so good, for, when growth starts, the cottager has no glass convenience to bring the plants on, but he has to find a sheltered spot—perhaps the sunny side of the house, or some other nook—where the plants make a slow, but steady start, and lay a good foundation upon which, when planted out, they will build up their mounds of blossom. We have also some other greenhouse Fuchsias that were put in a border last year and left throughout the winter, not being wanted. Upon going in the spring to dig them up, thinking them quite dead, as, indeed, all the wood was, I found vigorous shoots starting from the roots, some

of them as thick as my little finger. Of course, I then left the plants alone, and the healthy growth which has been made since, with the profuseness of fine flowers, is as surprising and convincing as it is beautiful.

As the Fuchsias have the great and most desirable merit of lasting in beauty the whole season through, it follows that they are capable of playing an important part in flower garden arrangements, both of a permanent and temporary character. The essentially hardy kinds can be devoted to a variety of permanent uses. Fine specimens like the one before mentioned are desirable, also bold groups in association with shrubs or vigorous hardy plants. Where hedges of an informal character are desired, nothing could be more beautiful than one formed with Fuchsias. *F. gracilis* makes a regular, but graceful summer hedge, whilst *F. globosa* will make a permanent one. Another way in which I have seen this last-named kind effectively used is to train the leading shoots to the wall, and the little branches then depend in a graceful and charming manner; but they should be pruned hard back each year, and as the main shoots gather strength with age, these wall Fuchsias become conspicuously beautiful objects. The larger flowered greenhouse Fuchsias would, if more freely used in the temporary or summer floral arrangements, do much towards increasing variety, interest, and beauty, and their graceful and fine form, whether as bush, pyramid, or standard, would diversify and relieve the flatness and monotony of the beds and the flower garden generally. One thing in respect to these last should be ever borne in mind, and that is, to let them make their growth in the open air, and they might with advantage be planted in their intended position much earlier than the tenderer things with which they are to be afterwards associated.—A. H., in *Field*.

Eucomis punctata.—This old plant is very handsome in Mr. Smee's garden just now. In my young days I used to see this plant growing vigorously out of doors planted beside a wall, and it flowered regularly and increased in size rapidly. It is a great pity that the fashion for utilising similar situations has long ago ceased in the majority of places, and that these plants are now so seldom seen. *Amaryllis Belladonna* and *Eucomis* were magnificent under the wall in question; they were never disturbed, and the ground became almost as hard as the wall itself, and this they appeared to enjoy.—W. H. G.

Notes on Lilies.—I am surprised to note that "D. T. F." has not grown *Lilium lancifolium* Krætzneri in the open. From a personal experience of five years, I may say that it is one of the most satisfactory and certain of hardy Lilies. I have about five dozen in different places and positions in my garden and in all of them this Lily does well. I hope to plant several dozens more this winter. From my experience of *L. auratum*, I may say that platyphyllum is the only one that is satisfactory over a number of years in the open; all the others go wrong sooner or later. I have had the same unsatisfactory results as others with *Lilium candidum* for the last two seasons, and *Krameri* has also been poor this year.—C. J. GRAHAME, *Croydon*.

Great Ox-eye (*Pyrethrum uliginosum*).—I have succeeded in securing dwarf heads of the growths of this tall perennial through layering as pot plants, these proving that the layering is easy and certain. I have, indeed, growths of several diverse characters. There is the ordinary growth some 5 feet in height; then there are early layers put down in June, the plants about 2 feet in height; also from cuttings taken in June and rooting freely, plants from 20 inches to 24 inches in height; also some seedlings from spring-sown seed about same height, but not so well headed as are those from cuttings, and the very dwarf plants about 10 inches in height from July layers. These latter I hope to exhibit at Westminster next month, as they will bloom later than ordinary out-door plants. The shoots bend down for layering very well. I slightly cut the underside of the stem just below the head-flowering side shoots, then bury the

cut portion in the soil with the head just standing out of the soil erect. The roots come less from the incision than from the stem above it; indeed, it seemed as if from the stems when once buried roots would be thrown out as freely as from Water-cress stems. Where there is plenty of spare stools in some retired spot in the garden, numerous dwarf plants, well suited for pot culture and to bloom late in a greenhouse, might thus be obtained. As the stems produce clusters of side or blooming shoots at their tops, the layered plants are well furnished with flower-buds when lifted and potted. —A. D.

Clematis Jackmani alba.—About four years ago I got a white Clematis Jackmani and planted it against a house where the purple-flowered

shoots and large foliage. It is growing on a terrace composed of stones, with a shallow bed of good rich loam, leaf-mould, and some rotten manure (stable).—T. W. BROWNING, *Carass Court, Croom.*

MINA LOBATA.

AMONG annual twining plants this is probably one of the most distinct introductions of recent years, and a valuable one, too, as the plant is of a high order of merit. As advised by the writer of a previous note upon it early in the season, I placed stout branches to our plants, and they have almost covered them with twining shoots. The plant has sharp-lobed Vine-



Mina lobata, showing habit of growth.

type was before. It is a warm corner facing south, and the plant grew for two years, and the third it flowered. This year it has bloomed very well, and looks beautiful amongst the purple. The blossoms are each 5 inches across, and some have six petals, whilst others have only four. They have a decided mauve shade when in the bud, but when fully out are pure white. It does not seem to be a very strong grower, as the stem is only now about the size of a stout pencil, but it makes good healthy

like leaves, and the flowers are borne in a raceme upon one side only. In the bud state the flower is long, pointed, and of a red colour, but ultimately the expanded blossom becomes of a creamy hue, with conspicuous protruding stamens of the same colour. The blooms are pretty and remain fresh for several weeks after they have fully opened. Three plants were raised from a packet of seed, all had the same

treatment, and were planted against the same wall, but, curiously enough, whilst all have made a similar amount of growth one only is at present flowering, and it is so free that at a short distance it has been mistaken for a scarlet runner Bean. A. H.

NOTES ON HARDY PLANTS.

Newly collected Daffodil bulbs.—I have just counted forty-three superfluous tunics on some bulbs that have come from the Pyrenees. Is it better to remove them or plant with them on? I fancy it is better to remove them, especially for cultivation in the wet British climate. I have been an observer of roots, and among the rest, of bulbs of the common Snowdrop in its wild state and the wild English Daffodil, and I have come to think that from the present point of view, *i.e.*, of the present high culture of these bulbs, the numerous tunics after a certain time become a hindrance to the old bulbs. I think it will invariably be found that thickly coated bulbs of Daffodils seldom have offsets, and such as they have were evidently formed years before, when the parent bulb was young or not thickly coated, because the offsets, too, have many tunics. Indeed, it may be observed in gardens that if the bulbs are left alone for years they become thickly coated and fail to make offsets. Premising that the formation of offsets is an indication of health and vigour, I conclude that that which prevents offsets is against the well-doing of the plant. Two years ago Mr. P. Barr made me a present of twenty kinds of newly collected Daffodils; all the bulbs were as clean and bright as newly-shelled Chestnuts, so I am sure they had been trimmed. The point, however, is that nearly all flowered, and most of them increased largely the first season, which they had not done for some years evidently in their wild homes, because the bulbs were perfectly round and so were the basal root rings. I do not wish to imply that the flowering was in the least due to the removal of the tunics, because, as we know, the flowers are formed the year before, but it proves that the development is not hindered by such removal, and, to my mind, vigorous offsets are a clear gain.

Polemonium confertum.—Allow me to report that I have now secured good plants of this lovely alpine from seed sown last July, and as something has been said against the hardness of the plant I may add that not only are the older plants grown here without the least protection both in pots and in the open ground, but these seedlings have come forward in a seed-pan that was left exposed to all weathers in winter. I did, however, set it under a light when late frosts threatened, so as to save the germinated seed from being lifted out of the soil.

Geranium Wallichianum.—It appears there are two distinct forms of this, and the one about which I wish to give a note is by far the more desirable in every respect. A plant given me by Mr. E. C. Buxton proves to be less rampant in growth and smaller in all its parts, except as regards the flowers. These are not only larger, but of more effective colour, which nearly approaches the *Nemophila* blue. The habit is more compact, the stems much shorter-jointed, and they produce a corresponding increase of flowers. My specimen has been in bloom since June, and on this last day of August it is a charming object at the top of a bit of rockery. I think Mr. Buxton got his variety from seed. I have no hesitation in saying that for rockwork of considerable size this is one of the most effective and useful plants that could be introduced.

Pelargonium Endlicherianum is now flowering in the open, where it has stood all the past winter. It has the shelter of an old wall, which no doubt helped to keep it dry. The thick half-tuberous stems, which are freely formed, die naturally when two years old, and as they are somewhat bulky, unless removed they are liable to cause the whole plant to rot. If divided every two years, Dr. Appleton says, it does well, and if it is done about

May the divisions grow away freely and flower well the same year.

Buff-coloured Lily (*Lilium testaceum*).—I am not much of a Lily grower, but this is a favourite, and I have had considerable experience with it. I have not, however, succeeded in making it flower well every year, but when it has failed I have always lifted the bulbs in early August, and invariably there has been found considerable decay, both of outer and inner scales. What the cause may have been, I could not say. All the bulbs are not always in this state, but I put all of the same batch through the same treatment. One batch has failed this season. All the bulbs were dug up and placed on the surface; there they remained for a fortnight fully exposed, and when we set them to-day they were so green and the scales so expanded, as to remind one of the rosettes of some of the incurved *Sempervivums*. The rudimentary roots, too, were short, hard, and green—not a sign of decay was remaining. With this treatment and when the bulbs are set before the middle of September, I have got various batches into good order again. I consider this is like giving them a clean bill of health and a new start.

Golden-rayed Lily (*L. auratum*).—As regards newly-imported bulbs, it is one thing to grow them for a season's flower, and quite another affair to establish the bulbs in the open ground. Sometimes both objects may be attained, but the rule is that the large bulbs which flower well in the ensuing summer are not worth much the following year. I have succeeded in establishing newly-imported bulbs without scarcely a single failure by the following plan: Refusing the earlier importations and securing firm, cankerless bulbs, somewhat late, taking the medium or even less-sized roots, planting them in rows only 3 inches deep from top of bulb in soil perfectly free from manure, and placing an 11-inch board over the rows to keep off wet for the first winter. Another helpful thing to do is to pinch out the tops or buds as soon as they show. This alone will often save bulbs that would otherwise exhaust themselves. The reason why I refuse the earlier imported bulbs is because I believe, from the succulent appearance of pieces of old stems left in them, that they have been dug before ripened to hurry them into an early market, and if I am correct in this view, the roots are not in the best condition for open gardens in our wet climate.

Spatium (*Lewisia rediviva*).—I believe "Delta" (p. 192) is referring to what I said about this plant. I believe the natural habit of the plant is not understood. Let us see now whether the plant has "not much of the *rediviva* about it." But first I should say that my experience of it extends over eleven years. In 1878, I first received twenty-five roots from North America. All the time since I have cultivated it, though not the same individuals, and I do not remember a single instance of a plant dying when once fairly established. On the other hand, I know many have cast it out as dead because it looked so; this is precisely the point—its natural habit. The leaves shrivel up in a few days in early summer, and always when the flowers are being borne. If, however, the season is moist the plants grow again in the autumn and become quite green and succulent, and retain their freshness all the winter. After four weeks of rainy weather my plants have so grown, but they are always furnished with short tufts of green foliage in winter. They are grown in pots, but certainly under hardy conditions, viz., plunged in the open air in beds of sand. Every plant of reputed hardiness is nowhere put to the test more severely than here. I may also add that I should not care to write in *THE GARDEN* about plants whose culture had not been mastered, such, for instance, as the Fairy Borage (*Eritrichium nanum*). I have had dozens of plants of this, but never grew it for two years, and I am not aware that anyone ever did in this country, excepting the late Mr. Joad, and he did it in his covered alpine house. The *Spatium*, however, is no such fickle thing, but may be grown as easily as a *Sedum*, that is, if it is not cast out when it suddenly, but naturally, curls and dries up. Is not its

specific name in allusion to this peculiarity and then becoming verdant again in the same summer? I may also mention that it is capable of being carried for some days in the waistcoat pocket until as dry as tinder, and on being planted it will soon become fleshy and grow. Surely here is a "*rediviva*" quality. I grow it in gritty peat and loam, and place the plant between two pieces of stone. I do this in order to keep it firmly in its place during frosts, as it has but few roots.

Spiræas.—None of these are ornamental after the flowers fade, and if I wished to divide and transplant any, I would do it as soon as the flowers were over. At that time (August) but few of the taller *Spiræas* will have any of their radical leaves left, and, besides, on pulling up the roots the new crowns will be found to be well formed. Anyhow, where considerable foliage remains it can be left on to finish its work, and if the newly set divisions are so planted that the tops can rest on the surface, they will both keep green longer and be less unsightly than if upright. The advantage of planting now rather than later could be proved before the end of the year by lifting a piece say in November; it would then be seen to practically have been a young plant well established. J. Wood.

Woodville, Kirkcaldy.

Great Cape Hyacinth (*Hyacinthus candicans*).—Few bulbous plants that bloom at this season are so beautiful as this white Hyacinth. In a mixed hardy plant border it associates well with the tall-growing perennials that bloom at this season. Its long spikes of white drooping flowers are most beautiful when the plants are grown in large groups, associated with *Phloxes*, &c. Again, large patches of it growing in and mixed in beds with red-flowered *Fuchsias* look well. We have a bed here at the present time planted in this way. A large clump of it planted in an open space, backed up with shrubs, has a good effect. When associated with large clumps of *Tritomas*, the effect is excellent. I recently saw some plants growing in 10-inch pots. The plants had each from ten to fourteen spikes. Each spike was from 3 feet to 4 feet high, and carried from twenty to thirty blooms. These plants had been grown in the same pots for two years in succession, thus proving they do not need much attention in the way of potting. When grown in this way they are useful for standing in large vases, &c. Being so hardy, *Hyacinthus candicans* can be grown by everyone who has a garden.—J. C. F., *Forde Abbey Gardens, Somerset*.

Fuchsias in Hyde Park.—The interesting and instructive article by "D. T. F." on *Fuchsias* in *THE GARDEN* of the 7th inst. will, it is hoped, be the means of bringing into notice this most elegant and useful plant for borders and bedding out. There is an endless variety of *Fuchsias*, and doubtless many of the newer and more brightly coloured kinds would in some of the more sheltered parts of the country, with a little protection, survive the average winter in the mixed plant border. If raisers of *Fuchsias* would cross some of the best single and double show varieties with the old hardy sorts, the result would probably be a new race of perfectly hardy kinds. I have had several opportunities of seeing the plants referred to in Hyde Park, and they appear to me to have flowered most profusely and continuously all through the season, and I for one should like to see the cultivation of *Fuchsias* out of doors extended. We have had gardens of *Geraniums* and *Calceolarias*; why not also have a garden of *Fuchsias*, as suggested by your correspondent "D. T. F."?—S. S., *Highgate*.

Tritoma pumila.—Several people who are fond of *Tritomas* have written to say that *T. pumila*, *T. media*, and *T. sarmentosa* are mere synonyms for one and the same plant. This, however, is not correct. I believe *T. media* and *T. sarmentosa* are one and the same thing, but the true *T. pumila*, as figured in the *Botanical Magazine*, t. 764, is quite a distinct plant, and so far as one can be sure it is not now in cultivation in English gardens. The flower-buds of *T. pumila* open from the apex of the spike downwards, and not from the

base upwards, as is the case with *T. media* and other of the *T. Uvaria* forms. I am told that Max Leichtlin has searched for years for the true *T. pumila*, and has not so far discovered its whereabouts. It is a very beautiful and distinct plant as figured in the *Botanical Magazine*, and not at all like the dull-looking *T. media*, which is also illustrated in the same work at t. 744. Now that the Torch Lilies are becoming such a splendid feature in our gardens, it is much to be desired that this little gem of the whole family (viz., *T. pumila*) may again become a reality instead of being, as now, merely a name. As it was one of Masson's Cape introductions sent to Kew in 1774, it is possible some of our botanical friends at the Cape may be able to send us roots or seeds.—F. W. BURBIDGE, *Dublin*.

KITCHEN GARDEN.

LIFTING AND STORING POTATOES.

THERE is this season every prospect of a heavy crop of Potatoes being lifted, and, as far as my experience goes, the quality in most instances is exceptionally good. At one time I fully expected to see at least half the crop of the more weakly growing varieties spoilt by disease, but, strange to relate, it is not these that have suffered the most, but rather the reputed disease-resisters—notably, *Scotch Champion*. In one garden in this neighbourhood the owner purchased a fresh stock of *Scotch Champion*, and hoped great things from the change. As far as the weight of the crop was concerned no fault could be found, but more than one-half of the tubers were badly diseased. In the same garden Veitch's Improved Ashleaf has turned out surprisingly well, there being only a very few diseased tubers found. With us the last-named variety was rather badly diseased, especially where rows of Brussels Sprouts had been planted between them, but Myatt's Ashleaf was singularly free from disease, and this good old variety is much appreciated on the dining table. The haulm of both early and late varieties decayed unusually early this season, there being scarcely any life apparent throughout the breadths by the middle of August. This happened in the case of *Chiswick Favourite*, *Champion*, *Magnum Bonum*, and *Laxton's Reward*, while the still stronger growing *Abundance* lost its leaves only, the haulm remaining green. With so much disease in the top growth one naturally expected to find very many diseased tubers, but as in the case of those more liable to it a comparatively sound crop has been, or shortly will be lifted. On higher ground than ours the foliage was not so badly diseased, and in some instances is still quite green. As it happens, this is a matter for regret rather than congratulation, the foliage evidently serving to conduct the disease germs to the roots, and supertuberation is also resulting.

September has been so far exceptionally favourable to the ripening of late Potato crops, and these must be very backward indeed if they are not now fit to lift and store. Advantage ought therefore to be taken of fine weather for this important work to be done, as it can be carried out more cleanly than and without injury to the ground. When Potatoes are dug in showery weather or when the ground is in a wet state, the trampling, and it may be carting or wheeling, leaves the surface in a pasty state, and binding is the consequence. If it is not convenient to lift the crops it is advisable to draw the haulm, this being necessary to prevent supertuberation, or a second growth of the tubers, which, it is almost needless to add, greatly impairs the quality of the crop. In reality Potatoes keep quite as well in the ground

as out of it. We have repeatedly lifted Myatt's Ashleaf in the spring or before sprouting commenced, the medium and smaller sizes being used for planting fresh ground, and the remainder cooked and eaten. The former not having been weakened by premature sprouting grew strongly and produced heavy crops, while those tubers cooked equalled in appearance, dryness, and mildness of flavour any in use at the present time. When Potatoes are left undug, the only precaution or protective measures needed is to mould up rather heavily the better to preserve the top-most tubers from the frost. Last winter the ground was repeatedly frozen to a good depth, and the Potatoes left in the rows as they were grown must have been frozen, but as they thawed very gradually no harm accrued to them. These remarks may not tempt others to leave many Potatoes in the ground undug throughout the winter, or till they are wanted for use, but I hold it is wiser to adopt this plan than to lift and store where they will either be exposed to more light or more warmth than is good for them.

There are a few fallacies connected with the digging and storing Potatoes that ought to be exposed whenever the opportunity occurs. I have repeatedly pointed out how unwise it is to leave the planting tubers on the surface of the ground exposed to all weathers for the purpose of greening them, this not unfrequently ending in a considerable number of them being affected by disease. Greening is not necessary to ensure the best results, and even if it were it would be better accomplished, and generally is, by storing the tubers in a light, cool position, so as to prevent early sprouting. Nor should the larger tubers or those intended for table use be left long on the ground in order to dry them prior to storing. It is no uncommon sight to see Potatoes left on the ground twenty-four hours and even longer after they are dug, the sure consequence of this in damp weather being the loss of a portion of them by disease, and in any case the quality is much impaired. Whenever a Potato is found to be objectionally strong in flavour, this is a sure sign that it has been too long exposed to light, and for this reason as few as possible are lifted at a time early in the season or only just what are required for immediate use, and also after the bulk are stored avoid sending many at one time to the house—a few hours, or it may be two or three days in an open box completely spoiling them. Potatoes need no drying, and if lifted, as they ought only to be, in favourable weather, they may well be stored as fast as they are dug. We have long adopted this plan, and it always answers satisfactorily.

Most large gardens are well provided with suitable cool dark sheds for storing Potatoes, and have also, in many instances, plenty of latticed shelves, arranged somewhat after the manner of a fruit room, for the seed tubers. A warm room, or any very dry position has a most deleterious effect upon both early and late varieties, sprouting and shrivelling soon resulting. Amateurs especially are very careless in the matter of storing this, the most important of all vegetables. I would strongly urge upon them the necessity of sorting over the crops as they are lifted. The proper plan for all to pursue is to divide the tubers into three, or rather four heaps if any are diseased, the latter being destroyed—the very smallest to be given away or to the pigs, abundance of medium sized tubers being reserved for planting, and the rest of those sound stored for consumption. Those intended for planting ought to be kept very thinly spread out in a fairly light and airy shed or room, and protected from

severe frosts whenever necessary. When stored in large heaps or in deep boxes, hampers, and barrels, as they too often are, they are bound to sprout prematurely, and are of very much less value accordingly. The first sprout ought to be preserved as much as possible, this being especially necessary in the case of the Ashleaf section. "Ware" Potatoes, or those intended for cooking purposes, keep admirably when pitted, that is to say, stored in heaps after the manner Mangolds are usually preserved. This plan is suitable whether a few bushels or many tons are to be stored, and is certainly better than keeping them in a warm cellar or room. A rather dry, well-drained, and cool position should be selected, the heap of Potatoes formed on this being from 3 feet to 4 feet in width, as high as it can be piled, and of any length, the best direction being from north to south. Competent authorities are of opinion that no straw should come into contact with the tubers, as it eventually becomes musty, and imparts an unpleasant flavour to them. It is recommended, therefore, that the heap be well covered with poor dry soil, and if a good portion of this finds its way among the Potatoes so much the better, this acting as an absorbent of obnoxious gases, and is therefore beneficial rather than otherwise. A thickness of 9 inches of soil is not too much by way of a covering, and if this is further enclosed by a good thatch of straw or Bracken, neither the severest frost nor any moisture will reach the heap of Potatoes, the latter covering being still more serviceable in warding off the sun's rays and keeping the heap cool. If the soil surrounding the heap be not used for covering it, a rather wide trench ought to be cut round, and in either case a grip must be cut so as to form a surface drain for carrying off superfluous moisture. W. IGGULDEN.

Rural New Yorker Potato.—In the spring of 1888 I received a Potato from Messrs. Thorburn, of New York, for trial. It was called Rural New Yorker, but as the season turned out unfavourable, I resolved to give it another trial before forming or expressing an opinion on it. This spring I planted the produce of one of last year's plants, and have just dug up the crop, and a finer lot of tubers I never saw, there being no really small ones, but all of good average size. Several are 1 lb in weight and of most excellent quality. It is a white Potato, very solid, with shallow eyes and oval shape, just the thing for a main crop variety. I may add that the Potatoes were planted between rows of young fruit trees, and in a quite open position the crop would doubtless have been heavier. The tubers were simply cut up to a fair seed size. The crop from one medium-sized Potato in two seasons. amounted to fully two bushels of fine sound tubers. —J. GROOM, Gosport.

Winter salads.—Although salading is not so much needed during winter as it is in summer, a regular supply seems to be expected in most places, and it can only be kept up by exercising some amount of forethought and having good stocks of Lettuce and Endive to fall back upon. Both of these ought now to be in full growth, and after a time it will be necessary to lift and store them. Lettuces do best in cold frames, but I have wintered or kept Endive very successfully in sheds, by wheeling in soil so as to cover the floor to a depth of 6 inches, in which soil the Endive was heeled in closely together, and by keeping the shed nearly dark the plants blanched excellently without the slightest decay in the heart or leaves. Outdoors, frost affects it quickly, as Endive appears more tender than Lettuce, but under the protection of a shed or such like building, where it can be kept dry, it seems to matter but little how great the cold is. In taking up either Lettuce or Endive, the plants should be lifted carefully with good balls of earth so as to preserve their roots as far as possible, and when they are stored, it is important

that this should be done during a dry time, as wet lodging in them will bring on decay. Lettuces may be improved by putting them in a Mushroom house a week or two before being used, or in any warm, dark place where the atmosphere is moist, which makes them more tender by exciting growth; and the same with Endive, which should be tied up rather close to get it blanched. Chicory comes in well to aid as a winter salad, and anyone having roots can soon start them, and get nice tender leaves by packing the roots, crown uppermost, in a deep box or pot, and filling in between them with soil. They should then be watered, and shut up close and placed in a gentle heat, when the leaves will quickly shoot, and as soon as they are 6 inches long they will be ready to cut. The above named, with Mustard and Cress, Beet and Celery, will afford plenty of variety; but a little Tarragon and Chervil are desirable to mix in for flavour.—S. D.

KITCHEN GARDEN NOTES.

UTILISATION OF SURPLUS VEGETABLES.

At the time these notes are being written, several kinds of quickly-perishable vegetables are unusually plentiful, and it is to be hoped no severe frosts will be experienced for several weeks longer. This trusting to our uncertain climate, however, is not to be commended, the wiser course being to at once turn as many of the more tender kinds to as good account as possible. They cannot be sold, or hardly given away, in districts where every cottager has a good garden, but a portion at least of runner Beans, kidney Beans, Peas, Cauliflowers, Cabbages, Cucumbers, green and ripe Tomatoes might well be either preserved whole, or made into some kind of pickle for use in times when green food is comparatively scarce. In Mrs. Beeton's "Household Management" there are various most useful recipes which ought now to be acted upon by the cooks or housekeepers in large as well as small establishments, and nearly every cookery book contains a certain amount of information bearing upon the preservation of green vegetables.

Runner Beans are especially plentiful this season, and these and also the more delicately-flavoured kidney Beans ought to be extensively stored for winter use. Of the different systems of preserving these, the best I have yet seen is that recommended by the famous *chef de cuisine*, C. E. Francatelli. The fault of preserved Beans, as a rule, is their hardness, but when kept by the system I propose to give at length they are surprisingly tender and almost equal to those fresh gathered. A number of tin boxes are required, and which any tinman can make cheaply after the pattern of a French preserve tin box, these to have round flat tops to fit on them. Next pick and string any given quantity of small fresh gathered French or Runner Beans, taking care that these be fairly young and tender, and throw them into a large untinned copper preserving pan containing boiling water with salt, cover them over with fresh Vine leaves and set them aside for twenty-four hours; they must then be drained upon a sieve, gathered up in neatly arranged bunches and packed closely in the boxes; fill up with water slightly flavoured with salt and solder down, or at any rate cover so as to effectually exclude the air. The boxes must then be set in a deep stew-pan or stock-pot, this being filled with boiling water and kept boiling for half an hour, after which it should be withdrawn from the fire. When the boxes are cold they must be examined, and if any leak these must be soldered afresh. They ought to be kept in a cool place, a dry cellar being the best position. Very little trouble need be spent in preparing these preserved Beans for the table. Should Peas be plentiful these also may be shelled and stored in tins, the treatment throughout being exactly the same as advised in the case of Runner Beans. Cauliflowers are not preserved to my knowledge in any way other than in mixed pickles, sliced Cucumbers, Gherkins, Shallots, small Onions, Chillies, green Tomatoes accompanying them. Recipes for making mixed pickles are common enough, and most housekeepers are capable of pickling red Cabbage, though it is not very generally known that hard white Cabbage is equally good when pickled in all but colour.

Judging from what has come under my notice in this neighbourhood, small green fruits are very plentiful on open-air Tomato plants this season, and very few of these can possibly be ripened either naturally or artificially. Fortunately, they can be profitably utilised either for making into preserves and pickles, and they are also very good in pies. Quite young fruit can be preserved, that is to say, boiled with sugar and placed in jars or glasses exactly in the same way that any other whole fruit is treated, but if the skins are at all hard the fruit should be scalded and the skins removed prior to boiling down. Pickled green Tomatoes, we find, are appreciated by the majority of those who have tasted them, and in all probability no more wholesome or digestible pickles can be had. There are two good recipes extant, though I have not met with either in a cookery book, and for this reason propose to give them at length. The one we prefer, and which it will be seen does not wholly consist of Tomatoes, is as follows: Take 2 lbs. of green Tomatoes, pull (not chop) them to pieces, add two or three Onions sliced and six chillies. Scatter salt over it, letting it stand 15 hours, then strain away the liquor, and cover the remainder with good vinegar. Place this in an earthenware jar and bake in an oven for one hour, and then press pulp into jars. Now take a dessert-spoonful of mustard and half a teaspoonful each of pepper, spice, sugar, cloves, a little cinnamon, and four chillies, adding sufficient vinegar to make this quite thin; boil it, and pour over contents of jar while boiling hot. If the best spiced vinegar is used the raw spices may be dispensed with. Jars to be closely corked, and it is advisable to well stir the pickle before using, the hot spices being liable to collect at the top. The next is a more simple recipe which may suit some of my readers. Scald and peel green Tomatoes. Lay them on dishes and strew salt over them. Let them stand twenty-four hours, occasionally pouring off the liquor that the salt extracts. Drain and gently squeeze them, as it is this juice that weakens the vinegar and makes them spoil. Take a large jar, put in a layer of Tomatoes, then a layer of sliced Onions, mustard seed, cloves, and white pepper, or whole black pepper, or two pods of red pepper may be broken up and put into a jar. When the jar is full pour very strong vinegar over, and in a few days they will be ready for use, and will keep all the winter. They should be kept in a dry state. If green Tomatoes are made into pies, they ought first to be scalded, then put into a preserving pan, and boiled for half an hour. They should then be cut up, to three pounds of Tomatoes being added one pound of sugar, another half-hour's cooking completing the preparation. There is yet another method of utilising green Tomatoes worthy of being extensively adopted, and it is this: Gather full-grown fruits while quite green, remove the stalks and stew them until they are quite soft. Rub them through a sieve, and put the pulp on the fire, seasoning highly with pepper, salt, and powdered cloves, add some garlic, and stew all together till thick. It keeps well and is much liked for seasoning gravies. I have not been able to find more than one good recipe for storing ripe Tomatoes, but believe there are more, and it may be they will be forthcoming after these hints are published. A brine of salt and water strong enough to bear an egg should first be made, then select quite sound and perfectly ripe Tomatoes and place them, without unduly pressing, in a stone or glazed earthen pot, covering with a deep plate in such a manner that it presses against the fruit. In this way they may be kept a year without any further trouble, but before cooking them they ought to be soaked in fresh water several hours. W. I.

Maggots in Mushroom beds (J. W.).—You have kept the beds too hot and dry. The best remedy in such cases is to make the beds in a cool shady position, as under a north wall, for instance.

Beauty of Hebron Potato.—I did not plant much of this Potato last spring, and I am sorry, for it has turned out splendidly, the tubers being large and superb in quality. This is owing to

growth being completed before the disease came; whereas *Magnum Bonum* has gone off long before its natural term of growth came to an end. Last year the reverse was the case, and the *Beauty of Hebron* suffered very much, whilst the *Magnum Bonum* did fairly well, as the disease came so early as to catch the more precocious kinds in full growth. The moral to be drawn from this is that all Potato growers should have more than one string to their bow. Relying on one kind for the main crop is certainly hazardous, for the season may be bad for that particular kind, and to have no good Potatoes through the winter is bad indeed. Had I planted the above kinds in equal proportions I should now have a lot of tubers of excellent quality instead of so many that must be inferior. Even if the tubers of the *Magnum Bonum* are sound, the early destruction of the haulm will have lowered both quantity and quality.—J. C. B.

Tomatoes.—It seems odd that with all the wealth of Tomatoes now to be seen in commerce there should still be such limited variety in good forms, that only when yellow or some sutured forms are put into a collection of six kinds is it possible to make up what may be described as distinct varieties. Everybody in producing a new Tomato aims to secure what is known as the Perfection type, so that names are more easily produced than real variety. One exhibitor at the Crystal Palace last week had in his six dishes diverse names, but every fruit might have been gathered from one variety; there was absolutely no difference in the fruits beyond size. In another collection such poor kinds as the coarse brick-red *Mikado* and the big sutured *Main Crop* were rewarded with a prize, as was the previously mentioned collection. If six kinds are exhibited in collections, judges at least should be satisfied they are distinct. As it is, a wide door is open for deception. It is questionable whether any good is done by having such large collections, as private gardeners seldom grow more than two or three kinds. Three dishes distinct would be ample for all useful purposes.—A. D.

A Scarlet Runner Bean Show at Banbury.—A horticultural exhibition in the open air, free to all comers, is something of a novelty, but such a one took place in the Market Square, at Banbury, on the 5th inst. Mr. Henry Deverill, seedsman, of Banbury, who sent out Neal's Ne Plus Runner Bean, a fine selection from the *Scarlet Runner*, which it took Mr. Neal something like twenty years to select and bring up to its present high level of quality, offered special prizes for the best twenty pods of this Bean, and by consent of the local authorities the exhibition took place as above stated. There were seventy entries, and some singularly fine pods were staged, long, handsome, fresh, and well coloured. The task undertaken by the judges was a very arduous one, and the result was that the first prize was taken by Mr. J. Hughes, The Gardens, Eydon Hall, Byfield, Northamptonshire; the second by Mr. Coupland, gardener to Capt. Benyon, Nelthrop House, Banbury; the third by Mr. Wintgrove, The Gardens, Rousham Park, Oxford; and the fourth by Mr. Nicholls, gardener to Mr. C. Gillett, Wood Green, Banbury. In addition, six dishes from various exhibitors were highly commended by the judges. This novel exhibition attracted a large number of spectators, and the selections of the judges were freely criticised. Further interest was lent to the proceedings by Mr. Deverill staging a truly wonderful lot of Onions, of great size and finish. Twelve of Rousham Park, a large flat variety of handsome shape and great solidity, weighed 20 lbs., but this was eclipsed by the same number of bulbs of a new Scotch variety named *Ailsa Craig*, raised at Culzean Castle, Maybole, which weighed 30 lbs., twelve of *Cocoa-nut* 20 lbs., twelve of *Wroxton* 15 lbs., and twelve of *Anglo-Spanish*, so named because the result of a cross between Rousham Park and one of the finest bulbs of the imported Spanish Onions, which weighed 18 lbs. The largest example of the latter weighed 2 lbs. 1½ ozs., and was 18½ inches in girth. The largest of the Rousham Park was 18 inches in girth, and weighed 1 lb. 13½ ozs. In addition, Mr. Deverill exhibited from 20 to 30

varieties of Onions, representing bulbs produced by ordinary cultivation.

Vegetable Marrow preserve.—I constantly find that persons who taste only the ordinary fruit preserves, highly sweetened with sugar, but not otherwise flavoured, not only warmly appreciate good Vegetable Marrow preserve, but marvel that so nice a compound can be produced from so inferior a vegetable. During the present season Marrows are so plentiful that they are being sold for next to nothing, and in the case of fruit the price is some 30 per cent. higher than usual. The conditions, therefore, are specially favourable to the making of a good quantity of Marrow preserve, for the best make is a long way superior to that of any ordinary fruit preserve purchased in shops, whilst the prime cost of materials is really trifling. Vegetable Marrows for preserving may be of any variety, large or small, but the fruits should be about three parts grown; indeed, the skins or rind should be just about to harden; then cut up into strips, the seed being cleanly removed, and also the rind. The flesh should be cut up into small cubes, say half-an-inch by 1 inch in length, and be put into the preserving pan. To 3 pounds of the Marrow add two and a half pounds of white sugar, putting it in at once, so as to harden the cubes somewhat. If it be desired to have it eaten as preserved ginger, add also half-an-ounce of ground ginger and a few drops of essence of lemon to flavour. Boil for two hours, and then put into utensils and tie it down. Properly made it will keep for a long time. I have some of last year's make, which is still fresh and delicious. The warmth of the ginger with the lemon flavour presents a delightful variation from the ordinary sweetness of other preserves.—A. D.

GARDEN FLORA.

PLATE 719.

PHYLLOCACTUSES.

(WITH A COLOURED PLATE OF *P. DELICATUS*.)

THE only genera of Cacti which find much favour in English gardens are the *Epiphyllums* and the *Sword Cactuses* (*Phyllocacti*); of the former there are only two good species recognised, that is if we exclude the very distinct, but as yet imperfectly known *E. Gartneri* (*Makoyanum*), which may yet prove to be a good species of *Epiphyllum*. All of the numerous named kinds cultivated in gardens are either seedlings or hybrids. In the case of *Phyllocactus* there are ten or a dozen distinct species described, but of these not more than half are known in gardens. The most popular, because they are certainly the most beautiful, are the hybrids and seedlings which have been raised within the last twenty years and which now number close upon a hundred named sorts. These have been raised principally by German and French cultivators of Cacti, whilst a few of the very best have originated in America and England. Over eighty of these named sorts of *Phyllocactus* are cultivated at Kew, where a considerable number of them flowered in the course of the present summer. It must be admitted that many of them are scarcely distinct enough to be worth a name, but in this respect these plants are only on a par with most garden races of plants. On the other hand, there are many exceedingly beautiful sorts amongst them; indeed many of those flowered at Kew were so superior to what had been hitherto seen, that at least one leading nursery firm decided to take the genus in hand with a view to popularising the plants in England.

It is a fact, unaccountable no doubt, that the beauty and garden value of many of these Cacti

* Drawn for THE GARDEN in the Royal Exotic Nursery, Chelsea, by H. G. Moon, May 2, 1889. Lithographed and printed by Guillaume Severeys.



PHYLLOCACTUS DELICATUS

are scarcely recognised in this country. A few cultivators possess a collection of Epiphyllums, still fewer have an odd plant or so of the Night-flowering Cereus, and here and there, but chiefly in the windows of cottages, one sees a few plants of Phyllocacti; but anyone who knows them must admit that we have very few plants which in return for so little trouble make such a gorgeous display of blossoms as do the Phyllocactuses. They flower profusely, their blooms are often enormous, but never ungainly, their colours white, rose, crimson, purple, yellow, or variegated, and always brilliant, and although each flower remains fresh only a day or two, yet they are produced in such abundance by healthy plants that the display is continuous for several weeks. Single specimens have been known to develop over 300 flowers in a year. When it is added that they are among the easiest of all garden plants to manage, their claims to popularity must appear exceptional. The cultural requirements of Phyllocacti are of that description expressed by the saying, "the more you neglect them the better they like it." When coddled, carefully watered, and often shifted into larger pots, they soon get into bad health, and though they rarely die, yet they are not healthy enough to flower. The plants commence to make new growth about the beginning of April, and they keep on growing till August. During this time they should be kept just moist at the root and syringed overhead once or twice a day in hot weather. They like full sunlight, plenty of fresh air and a temperature not lower than 65° at night. The soil should be a mixture of light loam, well-rotted cow manure, and brick rubbish, or coarse sand. The pots should be a quarter filled with drainage. When growth is finished the plants should be kept drier and allowed more air. From the end of October to the beginning of March they may be placed in a light airy greenhouse, where they will be safe from frost and kept dry. They flower from April onwards. If over-watered the roots will die and the plant rot away at the neck. Evidences of this are seen in the shrivelling of the stems, and directly this takes place water must be withheld.

The crossing of the different kinds or species with each other is easily accomplished, but it sometimes happens that the parent selected to bear the seeds is not strong enough to mature the fruits. The same remark applies to Epiphyllum. The fruits of Phyllocactus are round, as large as a Green Gage Plum, and bright crimson. They contain numerous seeds scattered through a watery pulp, which is sweet to the taste.

P. DELICATUS was flowered last spring by Messrs. Veitch & Sons, of Chelsea. It will be seen from the plate that this variety is of a charming shade of rose, and is a most desirable plant. The very finest of the deep-coloured kinds is that named *J. T. Peacock*, in compliment to one who possessed a famous collection of Cacti and other succulents. It will be remembered that on the death of Mr. Peacock last spring the whole of his vast collection of plants was sold by auction. Amongst them were several hundreds of this Phyllocactus which till then had been known only in Mr. Peacock's collection. It is a tall robust grower with triangular stems and huge flowers 8 inches across, deep crimson, shaded with violet inside. Several plants of it were purchased for Kew, and when in flower they were greatly admired.

P. CRENATUS is a species of exceptional beauty, its flowers rivalling those of the Night-flowering Cactus (*C. grandiflorus*) in size, purity, and fragrance. It was introduced in 1839 from Honduras, and figured in the *Botanical Register*, t. 3031. It is one of the parents of some of the best of the

hybrids. *P. grandis* is another very fine species with enormous creamy white flowers, which are also fragrant. This kind has the exceptional habit of expanding its flowers after sunset and being at its best during the night. *P. albus superbus*, Conway Giant, Cooperi, Franzi, General Garibaldi, C. M. Hovey, ignescens, Gordonianus and splendens are a selection of some of the best hybrids and seedlings. The plants are as cheap as Geraniums, and as they do not take up much space it is easy to get a collection and select a few good ones from them, according to taste.

The genus has been in cultivation since 1710, when it was represented by *P. phyllanthus*, then called *Cactus phyllanthus*. W. W.

FRUIT GARDEN.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

— Peaches on open walls with movable glass coping are good, and have been so for the last five years. The trees are nearly all grafted on the Mussel Plum, on which they succeed very well. The sorts we grow are principally old ones, such as Early Alexander, Hale's Early, Royal George, Barrington, Dr. Hogg, Noblesse, Walburton Admirable, and Late Admirable. Of Nectarines the sorts that succeed best with us are Pitmaston Orange, Violette Hâtive, Stanwick Elruge, Spencer, and Darwin. Outdoor Peaches are not grown very extensively in this neighbourhood. I consider one of the principal causes of the Peaches being of inferior flavour is the want of more sun; flavour was decidedly deficient in all kinds of fruit last year. I may add that I think Peaches would do a great deal better in many gardens if they could have the proper attention required. Oftentimes there are so many things to be attended to that they get neglected, aphides and curl getting the upper hand. Continual overcropping also weakens them and they become sickly.—*J. PRICE, Knote Park.*

— The extra early English-raised varieties are not large enough to find favour here, and Hale's Early produces our first dishes. It is not of first-class quality, but taken in time is by no means second-rate. A Bec follows closely, and is a grand Peach in every way. The good old Royal George which forces well is very superior, and with us Grosse Mignonne and Bellegarde are always excellent. Very good also is the Alexandra Noblesse, and not much fault can be found with Barrington when the fruit is taken from a healthy tree. Waterloo and Alexander, both very early new varieties of American origin, are very handsome, but not of superior quality. The fruits are best eaten the same day, as they part moderately freely from the tree. Crimson Galande proves extremely serviceable, being one of the best croppers we have, but this, again, scarcely equals the other older or comparatively old varieties I have named. Exquisite, though very attractive in appearance, is second-rate in point of quality, and Crawford's Early is no better. Sea Eagle attains a great size and colours beautifully, but if kept a few days it is second-rate. Fresh fruits are juicy and fairly rich

in flavour. I have tried nothing newer than the foregoing. Market growers have, of necessity, to study appearance rather than quality, and they must also send fruit to the markets that will travel well and keep for a few days. They, therefore, select free-growing productive varieties, of which Waterloo and Crimson Galande are good types, and market the fruit before it is really ripe. They also crop very heavily, and I hold that the best flavoured fruit are obtained from trees cropped only moderately heavy, and which do not require much feeding. In regard to stocks, as far as my experience goes, the Mussel Plum best suits Peaches, but this is not altogether satisfactory owing to the tendency the roots have of throwing up suckers. An imported tree of Hale's Early, and which I believe to be worked on a seedling Peach, is most addicted to the yellows, and this twice lifting has not remedied. I am allowing shoots to form on the Plum stems of young trees, merely stopping these, and am in hopes these will assist in swelling the stems. Those on the Plum stock are very liable to lose whole limbs much as Apricots behave, but whether this is altogether the fault of the stock I am unable to determine. Peach houses have been very extensively erected in this neighbourhood, and this appears to have been the principal cause of open-air culture being somewhat neglected. In most instances the best trees found their way into the new houses, or these were erected over them. As far as I can ascertain, if the open-air trees received the same attention as was bestowed upon them in former years, they would well repay for the trouble taken with them. What few trees we grow rarely fail, but we cannot resist shifting good specimens into the houses whenever they are needed to take the place of others. Hale's Early and Bellegarde do well with us.—*W. IGGULDEN, Marston House, Frome, Somerset.*

— The best Peaches for flavour are Dr. Hogg, Noblesse, Royal George, Bellegarde, Grosse Mignonne, Walburton Admirable. The new kinds as to flavour are poor compared with older varieties. The cause of the inferior flavour so often found in market Peaches is because the fruits are gathered much too soon, and afterwards allowed to soften in a cold damp situation. Mussel and Mirabelle Plum give the healthiest stock, the Peach and Almond stocks tending to disease and canker. Very good results can be had from outdoor culture in good seasons, and on walls with south or south-west aspects.—*JOHN AUSTEN, Witley Court, Stourport.*

— The best Peaches for flavour here are Noblesse, Royal George, Stirling Castle, Bellegarde, A Bec. The best of the new kinds for flavour are Crimson Galande, Dr. Hogg, Condor, Early Grosse Mignonne, Princess of Wales, and Goshawk. Some of the causes of Peaches being of such a poor flavour in markets and salesmen's shops are bad packing, unripened fruit, and forcing in too close an atmosphere. The stock that gives the healthiest and most long-lived Peach tree is the Mussel Plum, but some sorts do best on the Brompton Plum. I consider Peach trees require to be well handled as regards tying, pruning, and nailing. I have known good trees spoiled by tying too tightly, and also from a blow from a hammer. Either will cause canker. Best for outdoors here are Dymond, Royal George, Violette Hâtive, Early York, Barrington, Walburton Admirable, Alexander, and Early Beatrice for early use.—*THOS. WILKINS, Inwood House, Henstridge.*

— It is difficult to state which is the best-flavoured Peach, as tastes differ so much. Good fruits of Royal George and Barrington will be hard to beat in quality. If I had to plant trees to form a succession from the beginning to the end of the season, they would consist of the following varieties in ripening order: Alexander, good in colour and flavour, large, and very early; Early Mignonne, Grosse Mignonne, medium size, flavour first-class; Dagmar, one of the highest-coloured Peaches grown, free bearer, large, and of good flavour; Dr. Hogg and Crimson Galande, both first-class kinds; Royal George, well known for its excellent qualities; Barrington, another first-class variety. Sea Eagle, Princess of Wales, and Lady Palmerston will afford a late supply of choice fruit. This list might, no doubt,

be improved upon, but they are all varieties that I know will answer. So far as my own experience goes, I question if any of the newer varieties can surpass the best old kinds for flavour; at the same time I think the more recent introductions have less fibre in them, or, in other words, are more melting; in fact, I have not tasted a poor flavoured new kind. It is to be hoped that such varieties as Lord Palmerston have seen their day, as it is not worth its room. I believe the chief cause of inferior flavour in market Peaches is through picking and sending the fruits to market while comparatively hard, as it requires much care and very good packing to send up fruit by rail so as to arrive unbruised and in good condition. Salesmen advise sending before ripe for that reason, but it is always done at the expense of flavour. Canker is caused generally by unripened wood, which is injured by frost afterwards; bruises will have the same effect. But there are many different opinions as to its cause. My impression is that stocks have little influence in predisposing trees to canker. Outdoor Peach culture in this district is not gone into so much as it might be, provided suitable varieties were planted. Very late kinds fail to answer, but early and midseason kinds do very well; in fact, we never miss a crop from them. The best managed Peach trees out of doors that I have seen are at Eastnor Castle. In no garden in the county that I have visited do Peaches fail to answer if the trees are properly cared for. Only too frequently trees are allowed to become crowded with growth, making it impossible to thoroughly ripen the wood, a state of things followed by canker and failure.—S. T. WRIGHT, *Glenston Court, Hereford*.

— Peaches and Nectarines are very plentiful. Alexander is a fine handsome early Peach. From a tree on a south-west wall out of doors I commenced picking ripe fruit on the 15th of July. The Peaches finding most favour here for flavour are Hale's Early, Bellegarde, Early Grosse Mignonne, Royal George, Stirling Castle, and Noblesse. Violette Hâtive and Sea Eagle are really excellent September and October Peaches, the fruits being large, highly coloured, very juicy, and full of flavour. With regard to the cause of inferior flavour so often found in market Peaches, it may be pretty safely put down to the fact of the fruits having been gathered from the trees before they were quite ripe, so that when packed they would reach their destination in good condition and remain sound for a few days in the shop windows if not sold the day of delivery. Fruits thus gathered and, it may be said, ripened (?) in the shop windows cannot be otherwise than wanting in flavour, no matter how good the varieties may be. I find the Plum stock produces and maintains in health and vigour better Peach trees than can generally be obtained from any other kind of stock. I consider trees of the Peach on their own roots or the Peach stock are more subject to the attacks of blight, disease, and canker than trees worked either on the Plum or Almond. Some cultivators prefer planting all standard Peach trees against their walls on the assumption that the further the Peach bud is from the, in too many cases, too cold and uncongenial soil, the more satisfactory and permanent will be the results secured. Outdoor Peach culture in these gardens and at Ditton House Gardens (the only two places in this district that I know of Peaches being grown out of doors) is very satisfactory, and has been for a good many years. There is no reason why Peach trees should not succeed out of doors in the southern parts of Great Britain and the south, west, and east of Ireland, parts in which I have seen as good examples of Peach culture as in any part of the south of England. All that is necessary is to obtain strong healthy trees to start with, planting them in good-sized holes in a good turfy loam, and putting sufficient drainage in each hole to keep the roots from being at any time submerged, or the soil in which they are growing becoming water-logged through the application of water in time of drought. Train and treat the trees properly afterwards, keeping them clean and healthy and protecting the blossoms from frost. In the matter of tree planting there is no better illustration of the "penny-wise-and-pound-foolish"

way of doing things than that of squeezing the roots of trees of any description which we wish to grow into fine healthy specimens into small, badly-prepared holes and soil. Trees thus planted never do well.—H. W. WARD, *Longford Castle, Salisbury*.

— The best Peaches for flavour with us are Royal George, Noblesse, Early Silver, Early Louise. Outdoor culture in this district is very satisfactory.—E. CHADWICK, *Hanger Hill House, Ealing*.

— As to Peaches, we are fairly successful with them out of doors. Early Beatrice of the newer sorts is small and poor in flavour here. The best of the older varieties are Royal George, Noblesse, and Late Admirable. They are usually of good flavour, as well as of free growth, and they crop well.—CHAS. GIBSON, *Morden Park, near Mitcham*.

— I think want of flavour in market Peaches is chiefly due to the fact that the public generally will have large and showy Peaches, and it is especially the case this season. Large Peaches, no matter as to flavour, sell readily, but medium-sized Peaches and Nectarines, however good, do not sell well. Another reason is, that the fruit to travel well must be packed as soon as it is coloured without waiting for the later stages of ripeness.—E. J. BAYMAN, *Holmbury, Dorking*.

— You inquire if the outdoor culture of Peaches is practised in this district, and if successful. Yes; at Minella, near this town, the residence of Mrs. Malcomson, there is a Peach wall about 80 yards long, with a south-east aspect, where for many years the head gardener, Mr. John Crehan, has been singularly successful; indeed for twenty years I cannot remember a failure. I can answer another query, from Mr. Crehan's experience also. He attributes the superior flavour he secures to the influence of sunlight and sun-heat in the open air. It is, however, only fair to say that during the flowering period he has a system of sashes that effectually protects the flower-buds until fully set. He assists the setting by scattering the pollen. Mr. Bracken at Roebuck, Dublin, is the only gardener in all my rambles who ever told me he could grow Peaches without protection.—W. J. MURPHY, *Clonmel, Ireland*.

— The best flavoured Peaches are Grosse Mignonne, Dymond, Royal George, Noblesse, Violette Hâtive, Barrington, and Stirling Castle. Many of the new kinds of Peaches are very showy, but do not surpass the foregoing in flavour. The reason of market Peaches having an inferior flavour is either through the fruit being gathered off the trees before it is properly ripe, or the varieties are naturally inferior in this respect. It is of the utmost importance that Peaches should arrive in the market not bruised, and to secure that end it is necessary to gather the fruits before they are quite ripe. A perfectly good flavoured Peach must be gathered quite ripe straight off the tree. I have an idea that the Peach thrives best on the Plum stock, as the seedling Peach stocks are more pithy and subject to canker. The culture of Peaches on the outside walls is very interesting. In some localities the trees will not grow at all satisfactorily. In these gardens they do very well, the fruit coming into use late in the autumn, and at that time proving useful.—JNO. MCNICOL, *North Myms Park, Hatfield*.

— Best Peaches for flavour are Grosse Mignonne, Noblesse, Royal George, Dymond, Alexandra Noblesse, Stirling Castle. Four new early kinds, and the best in their season, are Early Louise, Hale's Early, Alexander, Dr. Hogg. The best late kinds are Violette Hâtive, Barrington, Walburton Admirable, Princess of Wales. From my experience I believe that the above kinds are the best for keeping up the longest supply of good flavoured fruit, and also the most reliable kinds. As regards flavour, first and most important is the low temperature. The reason also of poor flavour is want of sun heat and wet and cold nights, and often too much manure in the soil. Wet and sour soil will often cause this, and it can also be attributable to want of lime or chalk. The most suitable soil for Peaches is a good loam, lime and wood ashes being mixed in it. Place the trees on a round heap

of stones for drainage, &c. Seedling Plum stocks will produce the healthiest trees, which will last longer and give the greatest satisfaction if grown in suitable soil. If growing too strongly the trees should be root-pruned. I find that the trees when worked on or budded on weak-grown stocks, like the Myrobalan Plum and other weak-grown kinds, have a large swelling about the point of union, where they were budded; canker sets in, and the trees usually die if not at once attended to by slitting the bark of the stock the whole length from top to bottom in five or six places at about equal distances apart. This I repeat each year.—W. SMYTHE, *Basing Park, Alton*.

— Peaches are thin, the best in flavour being Rivers' Early York, Rivers' Early Albert, Grosse Mignonne, Noblesse, Violette Hâtive, Chancellor and Barrington, which is a shy bearer with me. I have grown fruit of it 11½ inches in circumference. Grosse Mignonne and Chancellor are subject to mildew. Best new kinds as to flavour are Rivers' Early York, Alexandra Noblesse (early), Waterloo, and Alexander. Sometimes inferior flavour in market Peaches is caused by the trees wanting water when growing, and pulling the fruits off before they are ripe. The climate has for several years been bad for outdoor Peaches. I did a few years ago grow fruits of Bellegarde 10½ inches in circumference. All are now grown under glass.—JOSEPH DOWN, *Ashdown Park, East Grinstead*.

— We have but few Peach trees on the wall, and those planted thirty-five years ago are worn out with the exception of one (Violette Hâtive), which seems to be one of the best both for hardness and flavour. The next best here is Grosse Mignonne, and both have fair crops on this year, other kinds having scarcely any. There seems to be a great difficulty in getting young trees to succeed now. It matters not how much trouble is taken with the planting; canker seems the great evil. I have planted several young trained trees the last few years, but not one has done well. I have now some maiden trees planted last season which appear to be doing better. I think the cause of bad flavour in fruit sent to market is that it is gathered before it is ripe. To suit market purposes, if gathered too ripe, it would be subject to great waste from packing and carriage.—J. BEESLEY, *Denbies, Dorking*.

— Peaches and Nectarines a good crop in this neighbourhood where the trees had attention in the spring. We have a good Peach wall here, 330 feet long and 14 feet high, covered with fine healthy trees and an abundant crop of fruit. Our practice is to disbud as early as possible, as when trees are allowed to become a mass of shoots they are sure to be attacked by fly. Attention to this and a free use of the garden engine will, however, generally keep them clean. The favourite Peach here is Noblesse; other kinds grown on open wall are Royal George, Barrington, Dr. Hogg, Lord Palmerston (good), Early Louise, and Rivers' Early. Of Nectarines the best are Lord Napier, Pine-apple, Pitmaston Orange, Violette Hâtive, and Elruge. Our trees have frequent waterings during dry weather with manure water got from the drainings of stable and cow-houses. I think the want of flavour so often found in market Peaches is caused through the use of chemical manures, notably nitrate of soda, which will swell fruit to a large size at the expense of flavour.—C. PAGE, *Higghams, Bagshot*.

— Of Peaches we have a small crop, and some trees have no fruit at all on them. Our best sorts we consider are Barrington, Bellegarde, Crimson Galande, Early Grosse Mignonne, Noblesse, Stirling Castle, and Violette Hâtive. Of early kinds we have Alexandra and Waterloo. We gathered the first fruits of these on July 19. Early Louise, Early Alfred, and Hale's Early will follow shortly. I am inclined to think Early Alfred is the best flavoured of the early ones, but last season was the first time of trying it, so that I cannot speak positively as yet. There is no doubt of the value of these early Peaches to gardeners who have to keep up a supply of fruit, as they come in very early to help out the late crops in houses. All our trees, I believe, are worked on the Plum, but what variety I cannot say.

Certain it is that some are better than others. Some young trees, purchased within the last four years appear to have been grafted on some dwarf scrubby stock which continually throws up suckers, and it is doubtful if ever the trees grow to their full size on such stocks. However, I intend to have no more of that sort if I can help it. Peaches do well, as a rule, on our Wealdon clay, but during the last two years the trees have had the curl and mildew in the spring very badly, which has somewhat weakened them, but they are looking well at the present time.—W. HOLAH, *Redleaf, Penshurst, Kent.*

— Alexandra, Rivers' Early York, Alexandra Noblesse, Royal George, Princess Alexandra, and Malta are the best Peaches for flavour. I often think that market Peaches are picked off trees before they should be, and very early forced, these two things accounting for the poorness of flavour.—H. SENSE-CALL, *Waleot Park, Lydbury North, Shropshire.*

— The best Peaches for flavour are Noblesse, Grosse Mignonne, Crawford's Early, and Early York; and of the new kinds, the finest in this respect are Alexandra Noblesse, Early Alfred, and Early Beatrice. I think the reason that market Peaches are so inferior in flavour is that the trees are forced too much. The Plum and Pear stocks are the best to use. Outdoor culture in this district is successful where the trees are planted on good, well-prepared, dry borders.—D. ROWLANDS, *Castle Hill, Bletchingley.*

— Peaches and Nectarines under glass have been fine and good. Our best sorts are the Grosse Mignonne and Royal George Peaches, Elruge and Pitmaston Orange Nectarines. In the open on walls our best sorts of Peaches are Hale's Early, Bellegarde, Stirling Castle, Sulhamstead, Noblesse, Royal George, Royal Ascot; Nectarines—Elruge, Violette Hative, Oldenburg, Pitmaston Orange. New kinds not much grown. The above sorts are the best flavoured and of better constitution than many of the new kinds.—JAMES TEGG, *Bearwood, Wokingham.*

— I have never protected our Peach trees and never failed of a crop for thirty-one years. My favourite sorts for flavour and general behaviour out of doors are Early Beatrice, Alexandra Noblesse, Royal George, Old Noblesse, Goshawk, Barrington, Bellegarde, Stirling Castle, Walburton Admirable, and Sea Eagle, the last-named being, in my opinion, the grandest late Peach in cultivation. Many of the new kinds, such as Albatross, Lord Palmerston, and Prince of Wales, are little better in flavour than a good Turnip. The chief cause of inferior flavour in market Peaches, I believe, is gathering the fruit when not more than half ripe. I prefer the Plum stock for Peaches to all others, as being the most hardy, free, and healthy. The Almond and seedling Peaches I consider to be the shortest lived and most liable to canker and disease. Outdoor culture in this neighbourhood, as a rule, is most successful, and the trees especially clean and healthy.—W. SANGWIN, *Trelissick, Truro.*

— The successful cultivation of the Peach and Nectarine on open walls depends mainly upon shelter, aspect, soil, the stock upon which the trees are worked, choice of variety, timely disbudding, thin training, immunity from insects, protection of bloom and deftness in manipulation generally, so as not to wound the trees. If these conditions, or any of them, are absent, the chances of good fruits will be diminished in proportion, even in an ordinary summer, whilst in such a disastrously inclement season as we had last year treatment was of little avail and cultivation well-nigh impossible, for the cold of July fairly paralysed everything and brought vegetation to a standstill, thus rendering it an easy prey to the myriads of insects which followed. The effect of all this was a puny growth, which never ripened and which was quite unable to bear the severe frosts of October, the nett result being that most young trees lost some of their limbs, whilst many old ones succumbed altogether. It need hardly be said that under these conditions there is no fruit this year, for in truth there was no bearing wood. Things are, however, righting themselves rapidly now that we have got a return to normal

conditions. The following sorts of Peaches do best here: Early Alfred, Dagmar, Crimson Galande, Bellegarde, and Walburton Admirable. If I had room for only one Peach tree out of doors I would plant Bellegarde. Of Nectarines the most satisfactory are Elruge, Pitmaston Orange, and Stanwick Elruge. The last is a grand fruit. Under glass we may indulge in much more variety. As to stocks, it is difficult for any but nurserymen to know upon what stock the trees are worked, as that part is not allowed to make much growth in a garden, but if stock and scion swell evenly together, gardeners generally take that as evidence of suitability. With regard to "the cause of the inferior flavour so often found in market Peaches," no doubt the chief cause is the growth of inferior varieties, the selling quality being the only one of any importance to the grower for market.—F. HARRISON, *Knowsley.*

THE FAILURE OF FRUIT CROPS.

THAT we learn more from failure than success is doubtless true, but, unfortunately, the lessons learnt by even the worst disasters are soon forgotten, or, what is quite as bad, they are not acted on to meet future cases of the same kind that may arise. Amidst the various conflicting statements that are made with more or less show of reason, the one great fact remains that we shall again have to place chief reliance upon imported fruit. Mr. Coleman (p. 211) seems to put down the abundant crops on some parts of the south coast to the favoured locality, and doubtless this is to a great extent true. But if this is the sole cause, one would think that intending planters of orchards for future supply of our markets would turn their attention more to the south coast than they have hitherto done, as at present this cannot claim to be a fruit-producing locality at all. Beyond supplying local markets little is done to check foreign competition, at least in the hardy open-air section of fruits, while glass structures are multiplying amazingly for the supply of tons of Grapes, Tomatoes, &c., and what is gained by favourable climate is to a great extent counteracted by the extra cost of fuel. Now, to my mind, the reason why the favourable climate of the south coast is not taken full account of for the production of hardy fruits in the open air is that some old fallacies have got deeply rooted in the public mind, and we all know how long they linger. In the first place, the notion that Kent enjoys a monopoly of suitable soils and sites for fruit orchards will need to be exploded before people look anywhere else for sites for Apple and Pear orchards. That Kent has long been justly famed for its fruit trees no one will deny. In fact it is the very best place for large long-lived trees that make good timber after they are too old for fruit-bearing. But it is not to trees of this kind that I should turn my attention if able to embark largely in supplying our home markets, for I would far sooner go in for dwarf trees for many reasons. In the first place, tall standards take too long to come into bearing and planting, and secondly the soil that is best adapted for dwarf trees is not always the best for producing wide-spreading standards. It is all very well to talk about root-pruning and lifting if the trees are bushes, but what can one do with trees that must have deep and strong roots to keep them in the soil? And my own idea of the reason why trees in this locality are giving good crops this year is not so much the difference of warmth in the atmosphere as of the extra warmth in the soil. Anyone who has had to do with Kentish soil of the ordinary orchard type, and then goes to the coast of Hants or Sussex, will soon perceive without any bottom-heat thermometer why early crops in spring are ready for market here while they are getting established in Kent. It is quite true that they attain larger size in Kent by the end of the year, but when success or failure hinges on the ripening of the wood, it will easily be seen that soil may be too deep and too rich even for this in our changeable climate.

Dwarf fruit trees with their roots mulched and otherwise well cared for do not need such deep soil as many seem to imagine, and although there

is a good deal of ground on the south coast that would not answer, there are thousands of acres that would with very little labour, and certainly at the present time Apples or Pears really well grown offer as good a return to the cultivator as any crop that can be planted. Bushes planted at 10 feet or 12 feet apart and only moderately pruned are the ones that I find make the quickest and best returns. These allow of such intermediate crops as Potatoes being grown between the rows for the first few years, and if the soil is liberally enriched, I believe that such cultivation is rather beneficial than otherwise to the trees, but as soon as their branches begin to meet cropping the soil between should cease. I would only prune once a year and that in the winter, for if the trees had good space to extend all round so as to make widespreading bushes they would soon cease to make strong annual growths, and the summer pinching that is so necessary with cordons and the smaller and garden bushes could be dispensed with. Labour must be economised in this, as in other branches of the gardener's art, if profit is to be made by the transaction, but a thorough cleansing from all kinds of insect pests must be well carried out after the winter pruning, when a surface dressing may be given, and also a light forking over of the surface if fine fruit and plenty of it is required. If this were done, I believe that both Apples and Pears could be very successfully grown on the south coast, especially if good keeping kinds formed a large percentage of the stock, for it is when goods must be sold or spoilt that the markets get glutted, but with these giving a wider range of season during which they could be disposed of, there is every prospect that in all sorts of seasons they would yield a profitable return to the cultivator. The produce from such trees would sell freely even when the produce of our old neglected orchards is unsaleable. J. GROOM.

Gosport, Hants.

Coe's Golden Drop Plum.—Amongst old varieties that have stood the test of time this is, without doubt, one of the best. The fruit is very rich in flavour, and hangs long after most other kinds are over. It is not, as a rule, a very prolific bearer, but makes up for that by carrying a fair crop nearly every year. It requires and deserves the protection of a wall, although I have seen some bushes and espaliers bearing very fair crops. But in most localities it is only to be recommended for wall culture, and although Plums may have been almost a drug on the market during August and the early part of September, I never knew them fail to sell well when this variety comes in, as it will hang well into October.—J. G., *Hants.*

Renewing Vine border.—I am about to renew an old Vine border and anything in the way of good loam in this part cannot be had. What would make a good substitute, half-inch bones or Thomson's Vine manure? How much of either per square yard should be used? An answer would much oblige.—J. H.

* * In the absence of really good loam (the best for Vines consisting of 60 per cent. sand, 30 per cent. clay, and 10 per cent. calcareous matter), you must make the best you can of the nearest approach to this in your neighbourhood. If heavier, cut it thin, say 2 inches in thickness; if lighter, go a little deeper, performing every operation when the weather is dry. If time admits, stack in narrow ridges until the Grass has withered and the whole mass is dry. When wanted, let it be cut down with a spade and well broken with Park's steel forks, especially if it be heavy. Protect from wet by the use of tarpaulin or shutters, or, better still, cover up the heap with hot stable manure to induce fermentation. For mixing with this, say 10 cubic yards, which will be about as many cartloads, procure two loads of old lime rubble or hair plaster, which is preferable, one load of rough charcoal or wood ashes, and a quarter of a ton of crushed bones. Spread these correctives evenly over the surface of the turf, increasing the quantity of lime rubble if the turf is heavy, and adding a load of old rotten cow manure if light

and too sandy. Mix thoroughly by repeated turnings on a dry or frosty day. Keep the whole mass in a sharp ridged heap and well covered with the fermenting manure, to increase if possible, certainly to retain the natural autumn warmth of the soil. If very poor, 1 cwt. of Thomson's Vine manure may be added to the bulk, but this compost, rough dry and free, should be quite rich enough without the latter, which may be reserved for surface application when the Vines have started into growth. There prevails a strong impression that the cream of old sheep pastures must be secured for Vine borders, and this no doubt is best, but those who cannot get turf of any kind, good, bad, or indifferent, may form a really good compost out of the following materials. Take from any good vegetable garden say two-thirds of the quantity likely to be wanted, lay it up in a square heap and protect from rain. Make up the remaining third with sidings and parings from the roads; if limestone so much the better. Then to each 10 yards add 1 cwt. to 2 cwt. of soot, a quarter of a ton of half-inch bones, four loads old lime rubble, containing finely broken brick or old red sandstone, and four loads of charred wood, trimmings from hedges and garden refuse, saturated with strong liquid from the manure tanks when sufficiently burned, but still hot. Convey this at once to the general gathering, thoroughly mix by repeated turnings, and use when dry. Borders made of this compost should be well drained, and 2 feet to 2 feet 6 inches in depth. Lacking fresh vegetable fibre they will not last so long as borders made of new turf, but the Vines will root profusely in them and produce excellent Grapes, provided they are regularly mulched with fresh stable manure and well fed with mild liquid.—W. C.

WORK IN FRUIT HOUSES.

STRAWBERRIES IN POTS.

THESE since they were detached and collected together have had a very good time, the weather having favoured liberal supplies of water. The attendants who toil from day to day may think differently, but those who have watched and noted results know quite well that the best and ripest, if not the largest crowns are secured when bright weather necessitates frequent watering. The earliest plants in 5-inch pots will now be slackening in their growth and the crowns will be getting plump, but they are not ripe, neither must they be hurried into maturity by drought, as checks from this cause mean loss of the tender roots before the beginning of winter. The late Mr. Barker suggested mild feeding for a short time, and I think he was right, as we find established plants in beds that are top-dressed and mulched before they go to rest invariably producing the finest of foliage and the best of bloom. The food in this case prevents waste, and this is just what we should imitate, as exhausted plants in very small pots cannot be expected to throw up vigorous flower-scapes when Nature is dead against forcing. One of our earliest and best varieties has got a bad name, and considering how prone we are to giving an early rest, I question if this cutting off the supplies before growth ceases is not a step in the wrong direction. When these first batch plants have filled their pots quite full of healthy white roots, they should be plunged away in some moisture-preserving material in a light, open pit, where water when necessary must be regularly given to them.

Later plants in larger pots will make rapid growth for some time to come, and ripe roots being quite as important as ripe crowns, they should be frequently moved and set a greater distance apart to let light and fresh air play freely amongst them. All runners, too, and weeds must be removed, and if time admits, progress may be facilitated by pricking up the surface soil, which in course of constant watering becomes caked with sediment and conservæ. In low, damp gardens, where in the best of seasons the crowns barely ripen, this turning about and pricking over are not only helpful, but absolutely necessary, as all plant growers know how health may be preserved and vigour increased by these trifling matters of detail. Indeed, in bad

seasons we have found it necessary to set the pots upon elevated boards, on dwarf walls, or in single file upon a hard, worm-proof path to facilitate perfect ripening. Opinions differ as to the best mode of wintering Strawberries in pots, but one thing is quite certain, and that is the happy way in which plants in beds throw up their flowers after a hard, decisive winter. Forcing plants form no exception to this well established rule, but being in pots many persons feel anxious to protect not so much the plants as the pots, when the frost expands the balls for days or weeks together in hard winters. This protection and prevention of fracture can always be secured by plunging the pots quite up to the rims in old leaves, tan, or light garden soil, but the plants should not be covered with glass, unless the weather is unusually wet, when temporary lights or shutters may be placed over them. The best of winter quarters may be provided by placing, on edge, boards a foot or so in depth, running parallel about 8 feet apart, to keep together the plunging material. A heavy fall of snow will do the plants really no harm, but mats or canvas pressed down by its weight will; therefore, those who believe in covering should drive short stakes to stand a foot or so above the tops of the boards, and upon these form a substantial framework of laths or light poles to prevent the covering from bagging. One of our best Strawberry forcers, now resting upon his laurels, never protected a plant, but plunged the whole of them in ordinary garden soil at the foot of a very lofty wall, and many times I have cleared away the snow in search of the successful supply of plants, and his crops of fruit, I venture to say, were never excelled and rarely equalled. The only pot plants I would place under glass are Queens, Dr. Hogg, and Sir Charles Napier, and these should have full exposure day and night throughout mild winters. Rain and worms are the greatest enemies to pot plants; glass or shutters will throw off a deluge of the first, and the latter may be kept in check by a thick solid layer of coal ashes and a dusting of soot and quicklime prior to the introduction of the plunging material. Strawberries from pots form an expensive dish. Thousands of plants are grown well throughout the summer, but go wrong when coddled and wintered too kindly.

FIGS.

Fruit from trees under glass should now be over, and the trees in pots, tubs, or borders resting. The scarcity of wall fruit may have induced some few to allow second crops in late houses and third crops in early ones to swell, but the trees will reckon with them next season. What they gain now fruit should be cheap, they will lose when half-rested trees commence casting the fruit they should be swelling to maturity. If the autumn continues fine and dry, as at the present time it promises to be, pot trees may be kept near the foot of a west wall until the house or pit in which they are to be forced is ready for them. The Fig being heir to spider, bug, and scale, these trees should be most carefully washed and dressed with Gishurst compound, and the structure equally well cleansed with boiling water, quicklime wash and paint before they are taken in; otherwise they will become a source of annoyance throughout the season. Sudden and severe autumn frost does them no good; therefore the pedestals upon which they are to stand should be set up and capped with sods of turf ready for their reception on the shortest notice. When I forced pot trees extensively, these pedestals were formed of dry bricks set on edge upon each other in pairs, a method which caused the raising or lowering of the trees as they grew to be an easy matter. When started in November, the fermenting material, consisting principally of Oak leaves and a small percentage of fresh stable manure, was thrown loosely into the pit until the pedestals were barely hidden. As this sank, more leaves were added, until by degrees the pots were surrounded by warmth and a moist stream of ammonia. The crock roots struck into the cap of turf, and by degrees followed the liquid food down the dark and narrow crevices, for, like Orchids, they enjoy plenty of warm moisture, provided it is not stagnant; whilst those working in

the mulching, aided by large pieces of light turf, compassed the rims, and by the time the Figs commenced the last swelling, had fastened upon the decaying and declining plunging material. These, it must be understood, were not small plants, but pyramids 8 feet high in 20-inch pots, and, having such a genial root-run, the fruit invariably swelled to a large size and never thinned by dropping, as so often happens when roots confined to small pots are irregularly watered.

Pot Fig trees can be obtained from any good nursery, and under good management improve with age; but once started, the balls, no matter how large, must never become dry until all the fruit is gathered. When this stage is reached, all the external roots may be cut off close home to the pots and the trees may be repotted; but, following this principle, they may be kept in the same sized pots for years, as the annual roots support the crop, provided the balls never feel the want of water.

PEACHES.

By the time these lines appear in print the Peach crop in glasshouses will be over, and the abundance or scarcity another year will greatly depend upon the treatment the trees may receive through the remainder of September and the whole of October. It unfortunately happens that the lights are let down and heavy rain in some cases, not in all, is allowed to wash and refresh a portion of the foliage, thence to find its way into certain small sections of the borders; but beyond this tantalising treatment, this half strangling and restoring to life again by a wash with the hose or a dash with the syringe, the trees are left to languish until the balls are as dry as mud walls, when in due course comes the question, Why are all my best Peach buds dropping? Many people think drought ripens up the wood and foliage, and adopt the starvation system upon principle. Others, again, trained in second-rate schools run away with the idea that daily damping and throwing about a few barrels of water is giving the inside roots a deluge, and actually live in a simoleon's paradise until the time arrives for root-lifting or root-renovation. Then, and not till then, they discover that the trees have not received more than half the water they actually required, and make a vow that no one in future shall suffer from a repetition of their blunder. If properly drained and made, an inside Peach border may be soaked with water equivalent to a rainfall of 2 inches per week throughout the growing season, and then it will be found that the roots are not one whit too wet to swell and fill up the buds for another season. It is now rather late to restore trees that have been subject to dribbling watering, but those whose conscience pricks should lose no time in trying to set matters right, as a good set cannot be expected where the borders are not moist enough to keep the roots moving through the winter. These remarks apply to early, to mid-season, and to late houses—nay, I may say to trees upon open walls, and those who wish to escape the mortification of bud-dropping are invited to benefit by the experience which all old Peach growers have bought and paid for. The hose, of course, is invaluable for washing off filth and spider, but the main point is a moist border, and this being right, spider at this time of the year can make but very slow progress.

Pruning.—The trees in all the houses, with the exception of the late one, having been pruned, that is so far as cutting out superfluous shoots furnished with foliage can be accomplished, the occupants of this structure without loss of time must receive attention. Late trees should be kept extra thin, 5 inches to 6 inches from shoot to shoot being quite close enough. All the shoots retained, especially the leaders in extension trained trees and the weakest with one wood bud at the base and another at the point, should be left full length, as the removal of the latter will render the best bearing wood blind and useless. It is not necessary to cut close home, as the final trimming can be allowed to stand over until the trees are detached from the trellises, but having let in light and air, a little regulating to secure an even spread of foliage and

to keep the points well up to the wires will put matters right for the present.

Borders in which the trees are growing too strong or too weak must now be taken in hand and dealt with accordingly. If too strong, root-lifting and relaying in pure calcareous loam are the best remedies, and the firmer the soil is rammed the better. If too weak from great age or overcropping, the borders may be well watered with diluted liquid, or the surface soil may be forked off and replaced with fresh, enriched with a little soot, old plaster, or lime rubble, and bone-dust. Manure in very extreme cases may be used, but on no account should it be mixed with the compost, as the weakest trees can be restored by mulching, top-dressing, and summer feeding. The compost, I may repeat, can hardly be used too dry, neither can it be made too firm by treading, as roots in a heavy resisting loam always make an abundance of mouths, and once these are formed the weakest trees can be restored by the time the fruit commences stoning. Dry compost, it is hardly necessary for me to say, should not be allowed to remain so throughout the autumn, but once the work is finished and the borders are covered with a thin layer of fresh stable litter, tepid water may be given pretty freely. If kept dry the roots remain dormant through the winter, but if properly moistened, a careful examination will reveal new rootlets at work within a fortnight.

Soil.—As bricks cannot be made without straw, now is the time to lay in a good stock of old turf for use through the coming season. An old calcareous sheep pasture upon which fine timber trees can be seen growing will not mislead, always provided it is cut and stacked in dry condition. A few loads may be placed under cover for use in bad weather, but the bulk in narrow ridges should have full exposure to the elements.

WORK AMONGST HARDY FRUITS.

MAKING NEW BORDERS.—Where planting is contemplated, advantage should always be taken of fine dry weather for moving soil, especially if it be of a heavy tenacious nature. The same remark applies to planting, but seeing that preparation which often entails a great deal of wheeling and heavy traffic must precede the introduction of the trees, also that time for the settling of the soil is advantageous, the whole of the navvy work should be pushed to an end when the soil is dry and some degrees warmer than it will be in October and November. Opinions differ as to the proper depth for fruit tree borders, some asserting that they should be 3 feet deep, others that 18 inches is ample. As soils, subsoils, and situations vary, both, in many instances, are right; but considering how important is the maturation of roots as well as wood, and that warmth is the only ripening agent, it is best to err on the safe side by adopting the shallow or an intermediate standard. On light loamy soils through which water passes quickly, and upon which men can work immediately after rain, a deep sustaining border is imperative, not that the roots of choice trees should be allowed to descend, but the soil being well pulverised and capable of holding healthy moisture, it will not so readily part with it when resting upon porous materials like chalk or gravel. Upon such soils concreting is a needless expense, and upon the principle that the roots of all young trees should be lifted and placed in a horizontal position at the end of the second year, artificial drainage is not always necessary. In the formation of borders or stations the compost should be made very firm by moderate ramming or treading if light, warm, and dry, when planting later on may be performed on the level. If, on the other hand, it is moist enough to become adhesive, hillock planting to allow for settling is preferable to treading. On well drained loamy land of intermediate texture a clear 2 feet of compost is ample, and here, although quite safe from subsoil water, a layer of drainage consisting of lime rubble, rough gravel, or pounded clinkers forms a guiding line when the time arrives for root-lifting. Upon these light and medium soils mulching after the ground has become thoroughly warm is a great help, and a

thorough watering when the fruit is set and swelling is equally important, but on no account should irregular dribbling be practised, as this moistening the surface draws the roots upwards, their proper place, to suffer when the supplies cease. Fruit growing upon these genial soils, the situation being well up above the line of fog and frost, is carried on under many advantages, not the least being a full average mean temperature favourable to colour, size, and quality in the choicest varieties.

Cold, heavy land, which absorbs and holds water and is subject to an excess of subsoil moisture in winter, if possible should be devoted to other crops, but, choice being limited, great improvement may be scored by a thorough system of draining, by burning and pulverising the clay or marl, and deep trenching. Dry or frosty weather is most favourable to the work, and whether the breaking of the

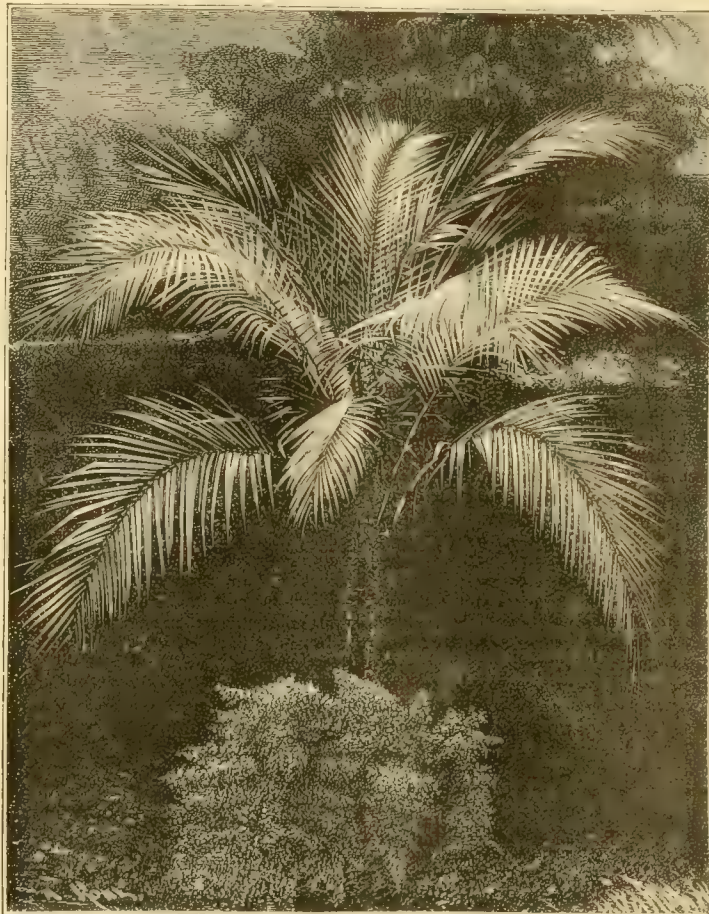
season under one's own supervision, but unless they are obtained early in the autumn, money being a secondary consideration, but little will be gained; indeed, something will be lost by spring removal from the nurseryman's care. Hillock or ridge planting on heavy soils should always be insisted upon, and root-lifting at the end of the second year is equally important.

W. C.

STOVE AND GREENHOUSE.

COCOS WEDDELLIANA.

THE plant here illustrated belongs to the same class as the Cocoa-nut. *C. Weddelliana*, however, has very small, uneatable fruits, but as a plant for decoration it is perhaps the most graceful we have, and for this purpose it is



Cocos Weddelliana.

soil extends to two spits or more, the top spit should always be kept uppermost. When the ground is drained, burning with wood is the next operation; then comes the carting and even distribution of all the rough loose materials, including sand, lime rubbish, road scrapings and sidings, and the like, for working into the lower stratum as trenching is proceeded with. If very poor and deficient in humus, a little light manure or short straw may be worked in with beneficial effect; but considering that this deep trenching is of more importance for drainage than root-holding or root-feeding purposes, manure in the majority of cases is most valuable when used as a mulch. If ground of this description cannot be prepared in summer or early autumn, the planting of the trees should stand over for one season, and then, provided it be planted with Potatoes, the best of all preparatory crops, it will be fit for their reception the following autumn. Trees, of course, can be procured and grown for a

grown by the thousand. The next in beauty is *Geonoma Schottiana*, but this is softer and more tender than the *Cocos*. The plant in question has a slender stem, and it bears elegant plume-like leaves, the pinnæ being long, leathery in texture, deep green on the upper side, glaucous beneath. It is a native of the Rio Negro, in Brazil, and requires warmth to start into growth from the seeds, which are now imported in quantity. The plant may be used for decoration as soon as three or four leaves have been made, and a large specimen is very ornamental. Do not over-pot this plant; it does not need it, and when in a large pot it is often rendered useless for decoration. Any extra sustenance it requires may be supplied by applications of liquid manure made from cow manure; this is specially suitable for Palms; it

is cool and nutritious, and the rich deep green colour of the leaves of those plants supplied with it amply proves how well it is suited to their requirements. W. H. G.

WINTERING LILIES.

I SHOULD be obliged if you could give me some information as to the treatment of Lilies (*L. auratum*, &c.) after blooming, when they should be cut down, and how wintered.—C. McC.

With regard to the treatment of Lilies after flowering, they may be cut down directly the stems decay, and if in the open ground, they will not require any more attention during the winter. I conclude, however, that those referred to in the question have been grown in pots, and if so, in their case the treatment needed will be somewhat different. After the plants have flowered, the soil should be kept rather drier than before, then, by the time the stems are thoroughly decayed, say next month (October), the bulbs may be repotted. They should be turned out of the old pots when, generally speaking, it will be found that the ball is simply a mass of roots, especially towards the bottom, while frequently some of the top soil may be removed without injuring the roots in any way. It is almost impossible to disentangle the roots at the base, for many of them will be in active growth, and, consequently, are very easily bruised. Such being the case, no more of the soil should be removed than can be done without damaging the roots, and then the bulb with its attendant ball may be repotted. The size of the pot will, of course, depend upon the vigour of the specimen, but usually one sufficiently large to allow a space of about an inch between the roots and the side of the pot will be sufficient. In potting, should there be depth enough to allow it, a very good plan is to pot the ball deeper than before, thus leaving a space of an inch or thereabouts in addition to that allowed for the purposes of watering. This should not be filled up till the flower-stem makes its appearance, when a quantity of roots are always produced just at the base of the stem, and if a top-dressing of good soil is then given, the roots make rapid progress therein. As *L. auratum* is very impatient of stagnant moisture, thorough drainage must be secured, and the soil should be of a good open nature, such as a mixture of two parts of turfy loam to one each of peat or leaf-mould and sand, or should the loam be of a heavy nature, an equal quantity of peat or leaf-mould should be used with it. The soil may be pressed down moderately firm, and no water need be given for a few days, after which time a good watering through a rose will be of service in settling everything in its place. They may then be wintered in a frame or cool greenhouse, but in either case little water will be required till growth recommences in the spring. At the same time the soil must not be allowed to become parched, but should be kept just moist enough for the roots to remain active throughout the winter. It is far better to pot the Lilies in the autumn than to defer the operation till spring, as the roots at the base of the bulb which form the mainstay thereof are much stronger by the growing season than if they were potted later.

In returning to the present condition of the plants, I would tell "C. McC." that it is not at all likely that they will after flowering all turn out satisfactorily, for *L. auratum* is notoriously difficult to acclimatise in this country, and the loss among imported bulbs is very great, especially during the first season. The probability is that some of the bulbs will be found partially decayed, and when this happens the only thing that can be done to save them is to shake the soil off, and in repotting surround the bulb with clean sand. Even with this care the chances are that some of the bulbs will perish, but by so treating them the losses will be reduced as far as possible. If they are wintered in an ordinary garden frame, great care should be taken to prevent the ingress of worms. The other Lilies usually grown in pots are *L. longiflorum*, *L. Harrisii*, and the numerous varieties

of *L. speciosum* or *lancifolium*, as it is sometimes called, and in the case of the whole of them, much the same winter treatment as that recommended for *L. auratum* will suit them perfectly, viz., repot in autumn, winter just free from frost, and with the soil slightly moist. The imported bulbs from Japan have not yet reached this country, but where it is intended to purchase any, they should be bought and potted if possible before Christmas, as the loss among them treated in this way is not so great as if they are potted after growth has recommenced.

A very singular thing in connection with this is the fact that late potted bulbs, as a rule, will flower as well the first season as the others, but in the autumn there is a great difference to be noticed in their condition. My impression is that it is owing to the fact that the early potted ones become thoroughly established by means of the roots at the base of the bulb before the flower-stem is pushed up, and thus, with the addition of the roots at the bottom of the stem, the flowers are supported without unduly distressing the bulb; whereas, when potted later, a larger supply of nourishment is drawn directly from the bulb itself, which consequently suffers.—H. P.

WORK IN PLANT HOUSES.

GREENHOUSE. — *LAGERSTROEMIA INDICA*. — The singular formation of the flowers, combined with their lovely soft colours and the profusion in which they are produced, might be supposed to be a sufficient guarantee for this plant being grown by most people who possess a greenhouse. Were there any difficulty in its cultivation one might understand the reason for its being so rarely met with, but it is as easily managed as a *Fuchsia* and as free a grower. Like most things, the time of its blooming is to some extent influenced by the temperature the plants are kept in through the spring; from about the end of July to the middle of September is the time when it generally flowers. Spring is the ordinary season for propagation, yet if cuttings are put in now they will soon strike, and by keeping them moving in an intermediate temperature through the winter the young plants will be much in advance of those that are struck in spring. The flowering wood does not root readily, but now when the plants have done blooming a few softer shoots may usually be found that have broken from the stronger branches. If these are taken off with a heel and put singly in small pots filled with sand and kept in a temperature of from 70° to 80° in a confined, moderately moist atmosphere they will strike in a few weeks. When sufficiently rooted put them in 3-inch pots. The soil should consist of good turfy peat with a little rotten manure and some sand mixed with it. As soon as the tops have made a little progress pinch out the points; it is necessary to attend to this early. In a temperature of about 60°, the plants will keep on growing through the winter and be ready for a liberal shift early in spring.

OLD SPECIMENS. — Plants that have done blooming may be kept drier at the root. The ordinary treatment is to cut them close in early in spring in a similar way that old specimens of *Fuchsia* are dealt with; but where room is an object the branches may be shortened as soon as the flowering is over. A little heat should then be given to induce them to break and encourage the young growth to make some progress before winter; a night temperature of 45° will answer during the winter. Strong specimens will attain a height of 7 feet or 8 feet, the branches each summer making 4 feet or 5 feet of wood. The pale, or flesh-coloured variety comes from India; it should have more warmth than the rose-coloured form, which is a native of China.

HELIOTROPES. — These are amongst the tenderest of the soft-wooded subjects that are usually put out of doors in summer; the least frost generally destroys them; consequently it is not safe even in the south of England to allow the plants to remain out longer. Heliotropes are regarded by many as the most agreeable of all highly scented flowers. They should be grown in quantity if a regular supply is required through the winter. The plants are long-lived, and with ordinary care will be as

good when a score of years old as ever they were, with this in their favour, that old examples, if enough pot room is given to keep them strong and vigorous, yield much more bloom than young plants are capable of. Pyramids trained loosely on trellises or standards with bushy heads are suitable forms to grow them in. Where the specimens have been well cared for, they will now be clothed with a mass of strong shoots that will keep on flowering through the winter, provided that later on when the temperature gets low they have a little fire-heat. From 45° to 50° in the night is about the proper warmth to give them; if much warmer than this, unless where the house admits an exceptional amount of light, the shoots get drawn, and if cooler, the growth made is not sufficient to produce much bloom. Weak manure water should now be given frequently, as if the pots are as full of roots as they should be, the soil will be much impoverished. Where small plants, such as were struck in spring, have to be depended on, they should have a good position in a house or pit where a temperature like that already recommended is kept up; if it is a few degrees higher it will be all the better, provided the plants are stood near the glass, as the more growth there is made, if it is strong and sturdy, the more flowers will be forthcoming.

PALMS. — The raising of these plants from seed is now better understood than formerly. With good, properly ripened seed, sufficient heat, and the exercise of patience, there is no difficulty in the matter. It often happens that the seed is slow and also uncertain in vegetating, the same length of time not always sufficing to get the plants up. Increased acquaintance with Palms has shown growers which sorts are the best adapted for ordinary decoration. Many fine distinct kinds that possess the essential property of not growing too large to be accommodated in an ordinary-sized house are, unfortunately, too tender to bear being long out of a stove or an intermediate temperature, and on that account are much less useful than the sorts that will thrive in a greenhouse all the year round. The *Kentias*—*Belmoreana*, *canterburyana*, *australis*, and *Fosteriana*—stand out in advance of all other species as greenhouse or room plants. They differ little in appearance, except in the length and size of their leaves. They are all extremely elegant in their habit of growth; the leaves keep their colour in a living-room and under other adverse conditions in a way that does not leave anything to be desired; whereas the hitherto favourite *Seaforthias* and such species as *Areca sapida* turn yellow. The comparatively slow growth which the *Kentias* make when kept cool admits of their keeping for many years within reasonable limits as to size. The *Kentias*, taking all their properties into account, stand unequalled amongst Palms. Of other desirable greenhouse kinds may be named *Chamaerops humilis*, *C. Fortunei*, *Livistonia australis*, *Latania borbonica*, *Rhapis flabelliformis*, *Phoenix reclinata*, *P. rupicola* and *Seaforthia elegans*. Amongst species that will succeed in cool quarters during summer, but require a few degrees more warmth in winter than an ordinary greenhouse affords, are *Cocos Weddelliana*, *Areca Baueri*, *A. lutescens*, and *Chamaedorea polita*. Seedlings that came up during the spring, or early in summer will soon require potting, as if allowed to remain long in the pans or boxes in which they have been raised they will be much injured. They should be put in pots just large enough to admit their roots without pressing them and a little soil. After potting they should be kept in a house where they will have ordinary stove heat. Anyone having seed of the sorts named will do well to sow it at once, provided he has a warm, moderately sized house in which to raise the plants. Sow the seed thickly and keep the soil fairly moist. Under these conditions most of the kinds will vegetate in the course of the coming year.

STOVE PLANTS STRUCK IN SUMMER. — Cuttings of *Ixoras*, *Allamandas*, *Dipladenias*, shrubby *Clerodendrons*, and others of a like description that were

put in about the middle of summer will now be in a condition for potting off; 4-inch pots will in most cases be the right size to use, as at this time there will not be occasion to make provision for the rapid extension of roots that takes place in spring. The *Ixoras* and the *Dipladenias* require the best fibrous peat, with a liberal addition of sand. The *Allamandas* and *Clerodendrons* do best in loam with some rotten manure and sand. *Crotons* that were put in to strike about the same time will also now need potting. Loam, with sand and a little manure, gives the desired colour to the leaves of *Crotons* better than peat. Much is gained in the matter of time when the plants named are struck in summer instead of deferring the work until the following spring. But when propagated in summer it is necessary to keep the plants through the ensuing winter in a warm stove temperature; where only a medium heat is maintained it is better to confine the propagation to the spring.

ALOCASIA MACRORHIZA VARIEGATA.—Amongst the many variegated and fine-leaved subjects that have appeared there are none that stand out so conspicuously for the bold distinct variegation of their foliage as this *Alocasia*. When well grown it never fails to attract attention when associated with either flowering or fine-leaved plants. Either in a small or a large state it is effective. To have full-sized specimens next summer the suckers should have been taken off and got established in 4-inch or 5-inch pots in spring, and afterwards have had a shift into others two sizes larger. They will now have made sufficient progress to require 10-inch pots, in which they may remain until spring, when they can be put into such as are 14 inches or 15 inches in diameter. Loam suits this *Alocasia* better than peat. At this and the next potting the soil should be made exceptionally rich with rotten manure; this ought to be used in a dry state. Such as has done duty in mulching a Vine border is the best for the purpose. Equal parts of this material and loam with some sand will not be too rich a compost. Suckers may yet be taken off; these should never be detached from the parent plant until they are large enough to have made a considerable amount of roots. When removed before they are in this state, they are a long time before they get established so as to enable them to move freely. Four-inch or 5-inch pots in most cases are big enough to put the suckers into. Soil of a like description to that recommended for potting the plants in, but with less manure in it, will answer. Enclose the suckers in a striking frame or under propagating glasses until the roots have begun to move freely, and afterwards treat them the same as ordinary occupants of the stove. To grow the plant well, it requires a liberal amount of heat; 65° in the night through the winter is low enough to keep it. T. B.

Montbretia Incendie.—This is the brightest of the newer *Montbretias* that I have yet bloomed, the colour of the greater part of the flower being of a bright orange-red, while the centre portion is rich orange, with just a few pencillings of a darker shade. Its habit of growth appears to be unusually vigorous. It is a very pretty variety, brighter than, but by no means very different from *Le Phare* and *Etoile de Feu*, both of which are among the showiest varieties. Still, with the limited range of colour that exists in the *Montbretias*, in some cases the varieties very nearly approach each other, and we certainly do not need any more unless they are improvements on those already in cultivation.—T.

Dichorisandra thyrsiflora.—It is considerably more than half a century since this beautiful stove plant was introduced into this country from Brazil, but at the present day it may be truthfully classed with neglected subjects. This *Dichorisandra* from a mass of fleshy roots pushes up a few stout stems, that reach a height of about a yard, and are clothed with handsome deep green leaves, and terminated by a dense-flowered thyrses of rich violet-purple coloured blossoms. A succession of flowers is kept up for a considerable time, so that the bright-hued blooms may be had throughout the

dull autumn months. The plant is of easy culture.—T.

Flame Nasturtium as a cool greenhouse plant.—Occasionally in visiting amateurs' gardens one comes across an instance where plants are grown in a manner out of the common. This, too, is sometimes to the disadvantage of the plants in question, and sometimes otherwise. It was the latter case with a fine specimen of the *Flame Nasturtium* (*Tropæolum speciosum*) which I recently saw covering the back wall of a cool greenhouse. The owner had, like many more, tried to establish it in his garden. He had done all that possibly could be done for its welfare, but it refused to grow. In despair, he lifted the one root left and planted it, in a by no means careful manner, in a border in his greenhouse amidst a lot of *Rose* trees. It grew the following year luxuriantly, and when I saw it it had taken complete possession of the wall and *Rose* trees, and was a mass of beautiful bloom. The house is unheated, and as the soil is naturally a moist loam and frequent waterings are given it, the *Nasturtium* seems to be quite at home there. Others might do worse than give it a trial in a cool greenhouse.—*Field*.

Lasiandra macrantha.—This beautiful old plant has never been seen in half the splendour it would develop if properly treated, as it evidently requires cool treatment. Its native locality, I suppose, was withheld from Mr. Bull when he imported it, or he, I am sure, would have been glad to have recommended it as a cool house plant. I have frequently advocated its cool treatment, and just recently I have noticed it one mass of flower planted out in a little cool fernery attached to the house in Mr. Tautz's garden, where its large blue, saucer-shaped flowers afford a splendid picture. It is a plant of the easiest culture, and grows freely enough in the coldest greenhouse, but, of course, it must not be allowed to suffer from frost.—W. H. G.

— In various lists of plants suitable for covering the rafters or roof of the greenhouse this beautiful *Melastomad* is seldom or never mentioned, yet that it is well adapted for such a purpose is at the present time exemplified at Kew, where in the greenhouse (No. 4) it has furnished a considerable space of roof, and is flowering most profusely. Grown in this manner it is very effective, being quite different from any subjects employed for similar positions. The above remarks apply to the typical *macrantha*, but for pot culture the variety *floribunda* is greatly to be preferred. This is of a much dwarfer and more branched habit than the other, while it is extremely free blooming, and the flowers are a good deal larger than those of the typical *macrantha*. With ordinary care and attention the plants are not difficult to cultivate, the principal consideration being to use soil that will remain sweet and open for a long period, and to water carefully at all seasons, more particularly during the winter.—H. P.

Hymenocallis macrostephana.—This *Pancratium*-like plant is one of the most ornamental of the section to which it belongs, and one that flowers at different seasons of the year, the usual time, however, being either during the spring or autumn months. It is now beautifully in bloom, the large spreading head of the purest white flowers being shown to great advantage when overtopping a mass of deep green foliage. One respect in which this *Hymenocallis* differs from the usually grown species of *Pancratium*, such as *P. speciosum* or *P. caribæum*, is in the size of the crown of the flower, which in the case of the *Hymenocallis* spreads out like a funnel-shaped partially transparent web. The blooms are deliciously fragrant, and will retain their beauty for some days. This *Hymenocallis* is of easy culture, the principal consideration being not to disturb the plant at the roots any more than is absolutely necessary, for a plant will remain in health and flower freely without being repotted. Such being the case, the soil should consist principally of good turfy loam and sand, while if the compost is then rather too heavy it may be lightened by an admixture of peat or leaf-mould. Good drainage must be ensured, and then copious supplies of water may be given during

the growing season, but in the winter the roots should be kept drier. At all times, however, they must be moist enough to preserve the foliage in a healthy condition, as the *Hymenocallis* is strictly evergreen.—H. P.

FUCHSIAS AT BATH.

ANY stranger visiting the August and September exhibitions held at Bath is always struck with the size and splendid development of the specimen *Fuchsias* shown on these occasions. They are in most cases the productions of men deficient in glass accommodation, and who have to finish their plants in the open air. The specimens are of great size, 7 feet and 8 feet in height, superbly grown and bloomed, and it might be objected that they are somewhat formally trained, but it must be remembered they have to be conveyed a long distance by road to the place of exhibition, and therefore it is necessary to tie in the branches a little closely to prevent whipping. On the occasion of the Bath show on the 6th inst. the best nine plants came from Mr. George Tucker, gardener to Mr. W. P. Clark, Trowbridge, a local grower of considerable repute, who had of dark varieties Doel's Favourite, raised at Trowbridge, a remarkably free grower and wonderfully profuse of bloom; Bountiful, Thomas King, and Charming, the last three raised by James Lye, of Market Lavington, Charming rivaling Doel's Favourite for exhibition and decoration; Miss Lucy Finnis, a double white-flowered variety which makes an excellent exhibition specimen, the tube and sepals bright coral-red; and the following light varieties: Marginata, C. Rickman, also a Trowbridge seedling, and Harriett Lye and Lye's Favourite, two very fine and useful varieties raised by James Lye. A few of the foregoing were some of the finest specimens seen in the west of England. Mr. Geo. Smell, gardener to Mrs. Counsell, of Bath, a local cultivator of considerable renown, was placed second with some remarkably good plants. Of dark varieties he had Charming, Load-me-well, a local variety, Doel's Favourite, Elegance and Final; and of light varieties, Arabella, Mrs. Bright, Pink Perfection, and Lye's Favourite. Mr. J. Lye, gardener to the Hon. Mrs. Hay, Clyffe Hall, Market Lavington, was third with varieties all of his own raising. The dark varieties were Final, Abundance, Benjamin Pearson, James Welch, Lye's Rival; and of light varieties, Mrs. F. Glass, Pink Perfection, Harriett Lye and Ada Bright. It is perhaps almost unprecedented that a grower should exhibit nine varieties of his own raising. The best six varieties came from Mr. A. Hawkins, gardener to Mr. T. Jolly, Bath, who had good plants of Final and Charming, dark varieties; Mrs. Rundle, pale tube and sepals, and rosy-red corolla, a fine and striking free-flowering decorative variety; Arabella, Beauty of Wilts, and Charmer, light varieties. The finest specimen light *Fuchsia* was Arabella, shown by Mr. Tucker, really a grand plant splendidly grown and bloomed, and the same exhibitor had the best specimen dark, a very fine plant, indeed, of Doel's Favourite. This last variety was raised many years ago, but it still remains one of the best dark *Fuchsias* for exhibition in the west of England.

R. D.

SHORT NOTES.—STOVE AND GREENHOUSE.

Hoya Paxtoni.—This gem amongst Wax plants is very good in Mr. Tautz's garden, being covered with its delicate umbels of blossom. It is the very choicest of all these beautiful plants, which should be more grown than our gardeners at the present time appear to do.

Water treatment for Palms, &c.—The practice of growing stove plants over heated water-tanks is not a new one, but it may, perhaps, be news to some cultivators that some plants, and especially *Palms*, which are very difficult to manage under cultivation are satisfactory when treated in this way. In the house where the *Victoria Regia* is cultivated at Kew we noted some extremely rare *Palms* in the most robust health and apparently growing luxuriantly under this water treatment. The tank is a large one, and whilst the centre is

taken up by the huge flat leaves of the Lily—which, by the way, this year has been, and still is, a great success—the sides are devoted to such plants as *Godwinia gigas*, *Medinillas*, *Manicaria saccifera*, *Mauritia flexuosa*, *Hyphæne thebaica*, *Borassus flabelliformis*, *Pholidocarpus thur*, and other plants. They all stand with an inch or so of their pots in the water, and their growth is really wonderful. The temperature of the water is kept at about 80°. It was this treatment which proved so successful with the giant *Amorphophallus Titanum*, and the *Godwinia* also thrives well there. The most astonishing part of this is that nearly all of the plants above named grow naturally in comparatively dry soil.

FERNS.

W. H. GOWER.

HARE'S-FOOT FERNS.

(*DAVALLIAS*.)

THERE are many species of *Davallia* which form beautiful ornaments when grown on a Tree Fern

tall and large stems, they would be considerably out of place planted upon such an example as here illustrated. The kinds most suitable for Tree Fern stumps may be briefly enumerated.

D. PENTAPHYLLA.—A distinct species with fronds some 9 inches or 12 inches long, and, as its name implies, with two pairs of pinnae and a central one, making five. These are broad and bright shining green in colour, paler beneath, the fertile frond slightly contracted. When first placed in the position here indicated, it may appear to be somewhat thin and sparse, but as it grows it will become a fine and telling object in the fernery.

D. DISSECTA is an extremely handsome plant for this purpose, and a very free grower. A form of this, *D. decora*, is also exceptionally beautiful; its fronds are broader and shorter, thus giving them a more distinctly triangular appearance. The typical plant has long creeping rhizomes, which are clothed with large drab-coloured scales, and its fronds are from 1 foot to 2 feet long and some 8 inches or 9 inches broad.



Hare's-foot Fern (*Davallia*) growing on a Tree Fern stump.

stump, as shown in the accompanying engraving. Indeed, I look upon this as the natural manner of growing them, and when thus treated, *Davallias* make an interesting display in the Fern house and relieve it of formality. The plants require ordinary care when treated in this manner, and little else but an abundant supply of water is necessary, and some peat fibre and *Sphagnum* Moss fastened in the arms or branches of the stem. A pretty example treated in this manner I saw recently in the gardens of Heaton House, Cheshunt, and the one here depicted is a charming group. The kinds which may be treated in this manner require to be somewhat carefully selected, for many of the species which appear to be small enough to be so treated will make enormous fronds if encouraged, and therefore, although simply magnificent when accommodated upon

D. BULLATA.—This is the plant illustrated, and is smaller than the preceding. It is at once distinct, as it casts all its fronds in winter. They are about 1 foot long when the plant is strong and vigorous, but more frequently they are some 8 inches or 9 inches in length, bright shining green in colour, the rhizomes being clothed with reddish brown scales.

D. CANARIENSIS is also well adapted for this style of culture, but it requires more care to establish it, as it is slower in growth, and the rhizomes do not so readily attach themselves. Moreover, it is a plant which thrives in a cool house, the other kinds requiring stove temperature. In this plant the fronds are heavy and massive, triangular in outline, and deep green.

The above-named may be accepted as amongst the best of the small-growing kinds, although there are several species of an allied genus (*Humata*) which are equally adapted for this

kind of culture. The large-growing kinds I will reserve for another occasion.

USEFUL FERNS.

BOTRYCHIUM LUNARIA MOOREI.—I have received from "Cantab" a few Ferns to name of much interest, and some of them so well deserve attention and cultivation, that I here give short descriptions of them. The above is No. 1, and it should be searched for and introduced into the hardy fernery, or planted on sandy brows of the woodlands. It differs from the common form in having all the pinnae deeply toothed or notched all round, rendering it at once distinct and very beautiful.

MOUNTAIN BLADDER FERN (*Cystopteris montana*) is No. 2 of this set. It is truly a beautiful species, I may say one of the very handsomest of the whole indigenous Ferns. "Cantab's" specimen, however, is not a good one. I have much better ones gathered on Ben Lawers; the fronds are triangular, finely divided and bright green; it has a creeping rhizome and should surmount a block of sandstone in the fernery. I have never seen this species thriving well in the south, or not so well as in northern counties.

BRITTLE BLADDER FERN (*Cystopteris fragilis*), No. 3, is very fine; one might have supposed the specimens came from the garden. This is a deciduous plant like the previously named form, but, unlike it, it grows strongly and produces a fine effect if properly planted, when it will sometimes grow to a length of 18 inches. The specimen before me is nearly 1 foot long; the frond is oblong-lanceolate in outline, the pinnae somewhat ovate and finely cut, colour deep green.

WOODSIA ILVENSIS.—This may be reckoned amongst our rarest British species, and is No. 4. This is recorded as gathered on the Clova Mountains, in Scotland; it is a small and slender species, and all the *Woodsias* have a keen interest for me. It is a deciduous plant, and grows some 3 inches high; this specimen is not quite so much, and it may be distinguished from *W. alpina* by its underside being densely clothed with chaffy scales.

HOLLY FERN (*Polystichum Lonchitis*).—This is No. 5. It is also from the Clova Mountains, and finer specimens than I possess from the same locality. It is a beautiful evergreen plant, which should receive the careful attention of all lovers and growers of hardy Ferns. Some years ago when Ferns were much sought after, I have seen dealers sell one or two year-old seedling plants of *P. lobatum* for this species, which indeed it much resembles, but they, of course, invariably grew out of character. It is a very rare plant.

LASTREA FILIX-MAS PROPINQUA.—This (No. 6), did I not possess living plants, would be difficult to determine in a dried state; it is softer and more delicate than the typical plant, and the plant becomes bare of fronds earlier; they are bright pale green in colour.

LASTREA FILIX-MAS PSEUDO-MAS.—This (No. 7) I consider the best of the forms of the species, and I have some fine clumps of it in my garden. It is heavily clothed with chaffy scales; the fronds are stout and deep green.

BLACK SPLEENWORT (*Asplenium Adiantum-nigrum*), No. 8, is the last, and I see that "Cantab" is under the impression that he has found the Maiden-hair Fern (*Adiantum*), but this is the Black Maiden-hair Spleenwort, and very handsome it is. It is the same thing that comes into Covent Garden Market under the name of "French Fern," and its cut fronds sell well. It is, however, a common plant in most parts of the country, and I would strongly urge those living within easy distance to gather the fronds and market them, leaving the roots to maintain the supply. It is an evergreen plant, and the fronds sell best through the winter and spring months.

W. H. G.

Platyzoa microphylla (*M. B.*).—This is the second time within a few months that this plant has come to me for a name. The plant is

very nearly allied to *Gleichenia*, and is found in Northern Australia. I do not know if Baron Müller has the plant growing in the Melbourne Gardens, or if it is to be found in the Sydney Botanic Gardens. Anyone being there should make inquiries of Mr. Moore, and if so, procure a plant and send it home in charge of someone returning to this country. It would be a beautiful addition to our cultivated Ferns; the fronds are tufted, a foot or more long, and simply pinnate, the pinnæ being small and incurved at the edges, resembling those of *Gleichenia dicarpa*. It is a gem amongst Ferns, and well deserves some trouble and labour to introduce in a living state. I believe Australia is the only country it is known to inhabit, and this kind is the only species of the genus in existence so far as I know.—W. H. G.

ORCHIDS.

W. H. GOWER.

DENDROBIUM FINDLEYANUM.

THIS is one of the most beautiful of the *Dendrobies* and is a native of Burmah. It first flowered in this country with Sir Trevor Lawrence about twelve years ago, and blooms quite early in the spring upon the last made growths, which still retain their leaves. "A Gardener" writes to me that "The first week in September my employer bought some plants of this species; what shall I do with them?" It is rather annoying to have plants come to hand in a dried state in the beginning of autumn, for just now the species should be ripening up its growth for next season's blooming, but you can do nothing except grow them on carefully. If they are the plants I saw offered for sale at a public auction they were exceptionally dry, and I quite sympathise with anyone who has to get them established; but you see, while the plants can be sold at any season, there is no check upon collectors sending them home at any time. Until collectors find there is absolutely no sale for plants which come at the wrong season of the year, there will be no stop in the supply. The spring or early summer is the best and proper time to import plants of *D. Findleyanum*. This allows them sufficient time to make a fair growth before winter and ripen it for flowering; now, however, your plants must be started into growth and treated as fairly and well as possible. The growths made will, as a matter of course, be small; but keep the plants in as light a position as possible, supply them with good heat and moisture, and when the growths have finished they should be put to rest and kept quiet until the spring comes round again, when they should be started again, this being their natural season of growth. The stems made now will not be large, do what you will, and this is the great mischief in having plants come to hand so late in the season, because it is very doubtful if this growth will be strong enough to make flowering growth for 1891. Purchasing now, therefore, is a mistake, but as you have the plants you must do your best with them.

***Stanhopea ornatissima*.**—Flowers of this beautiful species come from Mr. Smith, who has charge of the collection of Mr. Moss at Weston Grove, Southampton. It is a plant which I have not seen for many years, and I was very pleased to see it again amongst the cultivated Orchids. The sepals and petals are orange, more or less freckled and spotted with brown and crimson, the petals spotted at the base with velvety, blackish crimson; the lip is also marked in the lower part, that is to say about midway, with a blackish velvety spot on each side, whilst the small triangular front lobe is tawny yellow dotted with brown, and the narrowly winged column is white dotted with rose. It is

very strongly, but pleasantly scented with vanilla. It is a native of Peru.—W. H. G.

***Cypripedium Morganii*.**—This magnificent hybrid is now flowering in Mr. Measures' garden at Streatham, and bears a spike with three flowers, whilst a plant just over has been carrying two spikes of bloom. There would seem to be some variation in this *Lady's Slipper*, for the plants now flowering are from the specimen bought at Mr. Lee's sale at Leatherhead, and so also were the examples which flowered in Mr. Williams' nursery during the past year or two. This appears to be a freer flowering variety than many others. A coloured figure of this beautiful variety appeared in *THE GARDEN*, Vol. XXIII., p. 58.

***Vanda Kimballiana*.**—This is the latest addition to this fine family, and the plant appeared to be very nearly allied to *V. Amesiana*, but now that it has flowered it has proved to be new, beautiful, and distinct. The species is flowering in great beauty in Messrs. H. Low and Co.'s nursery, but the first I have seen of this plant in a private establishment was in Mr. Tautz's collection at Shepherd's Bush. The sepals and petals are white, the lateral ones very large, falcate, the dorsal one brought forward and standing edgewise between the petals; these sepals and petals are thin in texture, and not fleshy as those of *V. tricolor*; lip large and flat, side lobes small, light coloured, dotted with chocolate, the front lobe large and flat, and bright magenta in colour. It is a fitting companion to *V. Amesiana* and various other small growing species, but although both these plants have been imported by the Messrs. Low of the Clapton Nursery, we do not know up to the present time anything of their native habitats.—W. H. G.

***Eulophia guineensis purpurata*.**—This beautiful and rare plant is now flowering again in The Woodlands collection at Streatham, where it blooms annually, this and the plant in the Burford Lodge collection being all that are known to me. It would be well if more of these beautiful plants from Western Africa were made known to our growers at home, as there are many fine things to come from those regions. This *Eulophia* is a gem, and a large plant bearing several of its long, many-flowered racemes would make a fine show. The pseudo-bulbs are short, somewhat ovate, bearing on the apex a pair or more of oblong lanceolate leaves, which are rather papery in texture and dark green; the spike is much longer than the leaves, reaching 18 inches in height, and bearing numerous large and showy flowers. The sepals and petals are narrow, about equal, deep rosy-purple. The large lip is three-lobed, the side lobes small and white, as also is the entire base; front lobe large, ovate, bright magenta veined with deep crimson-magenta. It is a terrestrial plant of great beauty, and requires the temperature of the warmest house.—W. H. G.

SHORT NOTES.—ORCHIDS.

***Cattleya Loddigesi candida*.**—This is a gem amongst *Cattleyas*, with flowers of the purest white, saving a stain of yellow on the lip just in front of the column. It is now in flower in the collection of Mr. Tautz, and is one of the very prettiest of the white *Cattleyas*.

***Odontoglossum Schroederianum*.**—This beautiful species is flowering profusely in The Woodlands collection at Streatham, its bright colours and rich aromatic odour rendering it very attractive. It appears to flower as a young plant, and Mr. Measures grows it in a house slightly warmer than the cool house.

***Masdevallia porcelliceptis*.**—This is a rare little species, and is now in bloom in the Cambridge Lodge collection; indeed, these small-flowered kinds are nearly always in bloom. The flowers are of a golden yellow shade, spotted with brown; the lip roundish and brown.

***Cypripedium Ashburtoniæ expansum*.**—A very fine form of this variety is in bloom in Mr. Measures' collection at Streatham, and proves the desirability of preserving varieties. The flower is brighter in colour and the dorsal sepal broader than

in the type; it has a broad marginal band of white. There are numerous species and varieties of these *Slipper Orchids* flowering at The Woodlands.

***Lycaste Cobbiana*.**—This is a singular and pretty species, named by Prof. Reichenbach in honour of Mr. Cobb, of Sydenham. The sepals and petals are white, with a yellowish green tinge; the lip is also white, elegantly fringed. It is now flowering in Mr. Smee's garden at Wallington, in Surrey.

***Aerides Lawrencei*.**—This amongst all the fine plants in flower at the present moment in the collection of Mr. Tautz is by far the grandest. It has a massive spike, and the colours are rich and distinctly marked. It is as easily grown as *A. odoratum*, but requires a little more heat. It belongs to this section of plants, but is the most gigantic of any yet discovered. A coloured figure of this species appeared in *THE GARDEN*, May 25, 1889.

BOOKS.

THE GARDEN'S STORY.*

THIS, one of the many works now sent to us by American authors and publishers, will appeal to all lovers of gardening, and of hardy flowers in particular, since it conveys within its 328 neat little pages a succinct and sympathetic view of an American garden with its many flowers and fruits, birds and insects, its sights, sounds, and products of many kinds. The volume is inscribed to the Rev. C. Wolley Dod, "master of gardening, whose work among hardy plants has done so much for the advancement of floriculture," a sentiment thoroughly and sincerely appreciated on this side of the Atlantic as well as in America. Not the least commendable portion of the volume is a good index. Among its more remarkable contents is a good recipe for "pot pourri," many notes on the wild flowers of America now pretty generally cultivated in the gardens of Britain and Europe, and some subtle remarks on perfumes and flavours. We are getting a little *blasé* and hard to please in the matter of books in praise of gardening and gardens. Already have we pored over "Days and Hours in a Garden," by "E. V. B.," and Mr. Bright's work on a Lancashire garden, together with Miss Hope's volume on a Scotch one are ever within our reach, as also are Hazlitt's "Gleanings from Old Garden Literature" and Sieveking's "The Praise of Gardens," an *omnium gatherum* of some of the best things ever said or written on the subject. Ruskin, Hamerton, Shakespeare, Bacon and Shelley are on our fingers' ends, but none of them has written about the garden in America; and if we except Mr. E. P. Roe, I know of no one who has touched the garden harp of America so gently, so firmly, and so musically as Mr. Ellwanger has done in the little work before us. One extract will show pretty fully the spirit in which this interesting book is written:—

I see in many an old homestead along the shaded highway the prim Box hedge enclosing the garden of old-fashioned flowers. Often as the swallow returns do they rise anew and blossom with perennial freshness. The flowering Locust trees and the Tansy bed running wild outside the fence give a hint of the fragrance within, where I see the water-bucket ready for its floral libation. I push open the wooden gate to be greeted by the first Snowdrops, the Daffodils, the yellow Crown Imperials, the Grape Hyacinths. I see the blue Irises, the Larkspurs, the Bellflowers, the Batchelor's Buttons, the Monkshood. I note the big double white Poppies, the clumps of sweet Clover, the drifts of Snow Pinks, the white Phloxes. I see the *Dielytras*, the Sweet Williams, the tall yellow Tulips,

* "The Garden's Story, or Pleasures and Trials of an Amateur Gardener." By G. H. Ellwanger. New York: Appleton and Co. 1889.

the Sword Grass, Ribbon Grass, and Tradescantia. I see, too, the double flowering Rockets, the spotted Tiger Lilies, the Dahlias, the stately rows of Hollyhocks, and the glory of the phalanx of Sunflowers.

One might say a good deal more about the contents of this book, but it is not at all necessary, as the book itself will be sure to delight all those who are really fond of their garden and its fruits and flowers.

F. W. BURBIDGE.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY

SEPTEMBER 17.

THERE was a small show of autumn flowers on Tuesday last in the Drill Hall, Victoria Street, but, unfortunately, few to see it.

A FIRST-CLASS CERTIFICATE went to each of the following:—

WATSONIA IRIDIFOLIA O'BRIENI.—A beautiful Cape Irid, the flowers of the purest white, and produced freely on a slender stem; the leaves are deep green, strong, and abundant. A flower of such purity and freedom as this should be valued. From Mr. J. O'Brien, Harrow.

CATTLEYA MISS HARRIS.—This is described as a cross between *C. Schilleriana* and *C. Mossiae*, and it certainly has much of the character of the first-named, but it is difficult to find a trace of *C. Mossiae*, except it may be in the growth of the plant. The flowers are quite unlike those of that Orchid and greatly resemble those of *Schilleriana*, being about the same size and of the same rich colouring. The sepals are narrow, the two lower ones slightly wavy at the edge and of a mauve-magenta shade of colour; the petals are broader and of similar colour, but the richest colouring is in the lobed lip, which in the front is rich crimson, veined with a deeper shade, this giving way to a lighter tint at the entrance to the throat. From Miss Harris, The Grange, Lamberhurst.

GRAPE DIAMANT TRAUBE.—We saw this white Grape on trial in the Royal Horticultural Society's Gardens, Chiswick, in 1887, and then expressed an opinion that it was a good variety. The bunches are of average size, the berries oval, somewhat like those of the Duke of Buccleuch variety in shape, and sweet and sugary in flavour. From Mr. W. Roupell.

AN AWARD OF MERIT went to each of the following:—

DAHLIA HESTER DOROTHY.—A single variety of rich crimson colour, the petals broad and making up a well-shaped flower. One great point is that the plant does not grow more than 2½ feet in height, which is a decided advantage. Such dwarf types as this should be encouraged. From Mr. T. W. Girdlestone, Sunningdale.

D. CONQUEST.—A show variety of a rose-magenta shade of colour, the flower well shaped, full, and handsome. From Mr. G. S. P. Harris, Orpington, Kent.

D. MARMION.—We do not admire such show flowers as this. The colour is bronzy-yellow, striped and suffused with red—a mixed, spotty kind of colouring that is seldom constant. From Mr. C. Turner, Slough.

D. CENTENARY.—This is an excellent addition to the Cactus varieties and of the brightest scarlet colour, the flower large, full, and of the true Cactus character. Several remarkably well-grown blooms came from Mr. J. T. West, The Gardens, Cornwall, Brentwood.

D. GULIELMA.—A distinct single variety. The flower is of good form, white, with each of the petals edged with brown, in which there is a trace of red. It is novel, but scarcely beautiful. From Messrs. Cheal and Sons, Crawley.

DIANTHUS SNOWFLAKE.—The flowers of this are pure white, and most useful we should think for cutting. From Mr. R. Dean, Ealing.

CHRYSANTHEMUM ANNIE STEVENS.—This is a very early Japanese variety, and on that account of value. Even if it appeared in November it would meet with reward, as the flower is of excellent shape, full, the petals narrow and creamy-white, except in the centre where it changes to pale yellow. From Mr. G. Stevens, Putney.

COLEUS CLEOPATRA.—We cannot understand the committee giving this large coarse-leaved *Coleus* an award of merit. It has no merit, not even of colour, which in a *Coleus* is supposed to be the great attraction. From Messrs. Hewitt and Co., Solihull, Birmingham.

A botanical certificate went to *Disperis Fanniniæ*, a curious white-flowered Orchid, the flower not unlike that of an Aconite; and *Masdevallia vespertilio*, cream-white spotted with chocolate. Both from Mr. A. H. Smee, The Grange, Wallington.

The frost of September 16 interfered considerably with the show of flowers, as in some districts as many as 9° were registered. Many of the flowers staged were touched more or less, very few showing their full freshness and beauty.

A large collection of Cactus, show and single Dahlias came from Messrs. Paul and Son, Cheshunt. The flowers were remarkably fresh, and the kinds comprised Miss Jekyll, bright orange-red; Honoria, one of the best of the yellows; Zulu, almost black; Mrs. G. Reid, a beautiful lilac-shaded flower; Amphion, Annie Harvey, a massive flower of a rich crimson shade; Cochineal, crimson; Queen of Lilacs, A. W. Tait, white; Constance, white; William Darville, one of the best of all the Cactus kinds; Germania Nova, rose; William Rayner, red, central petals shaded yellow; and General Gordon, scarlet. The single varieties comprised such excellent types as Canterbury Tales, crimson, the petals tipped with magenta; Miss Henshaw, pale yellow; Mrs. Bowman, brilliant purple-magenta; Miss Conick, white flushed with lilac (silver medal). Several stands of show flowers came from Messrs. Rawlings Bros., Romford, Essex, all the varieties shown being of their own raising. The finest blooms were those of R. T. Rawlings, Rev. J. Goodday, Queen of the Belgians, Henry Eckford, William Rawlings, Shirley Hibberd, Clara, and Dr. Reilly, a show flower of good quality, the ground colour almost white, petals tipped with a rich lake colour (bronze medal).

Mr. J. T. West had a large collection of show flowers of well-known varieties. It is scarcely necessary to say that the flowers showed that Mr. West is a thorough master of Dahlia culture (bronze medal). Messrs. J. Laing and Sons, Forest Hill, had excellent flowers of leading Cactus varieties, especially of Sidney Hollings, a beautiful variety of a rich maroon colour (bronze medal). Mr. Charles Turner had good show varieties, such as Sunrise, bright scarlet; Agnes, rich yellow; Maud Fellowes, of a pink shade; Glowworm, rich scarlet; and Eldorado, maroon. The same exhibitor had good blooms of the following Pompons: Admiration, crimson, distinctly tipped with white; Vivid, scarlet; Cleopatra, a beautiful shaped flower, fine form; and Juno, white, purple centre. Messrs. Cheal and Sons had good blooms of Cambria single Dahlia, a rose-pink self of good shape and substance. Mr. T. W. Girdlestone sent a number of seedling Dahlias, amongst which the best were Lady Leila, pink; Sweet Lavender, rich rose, white in the centre; Gruppo, brick-red; and Sybil, white, petals edged crimson. Mr. Hawkins, Hillingdon, had blooms of a good pompon Dahlia named Miss Blanche Mortlock; the colour of the flowers is yellow tipped with red. Messrs. H. Cannell and Sons showed Cactus variety Henry Cannell. The blooms are maroon shaded with a shining magenta colour.

One of the best exhibits was the collection of cut Roses from Messrs. William Paul and Son, Waltham Cross. The flowers were delightfully fresh for the season, and the list of varieties by no means a short one. Among the Tea kinds were fine flowers of Souvenir d'Elise Vardon, Rêve d'Or, Sappho, Marie Van Houtte, Maréchal Niel, Ni-phetos, and Corinna, the new Tea Rose of Messrs

William Paul and Son; the flowers exhibited were of exquisite shape, the colour reminding one of that of Marie Van Houtte, but deeper, and instead of white, Corinna is more of a cream shade, a charming colour to go with the rich pink of the other parts. In the Hybrid Perpetual class were such good autumnals as Ulrich Brunner, Ella Gordon, a delightfully free and beautiful Rose; Dr. Andry, Victor Verdier, Mrs. J. Laing, the finest unquestionably of recent varieties; Pride of Waltham, Marquise de Castellane, and Marchioness of Lorne, a new Hybrid Perpetual that decidedly improves on acquaintance. It is very free and of a rich rose colour (bronze medal).

A large group of miscellaneous plants came from Messrs. J. Veitch and Sons, Chelsea. They included greenhouse Rhododendrons, Nepenthes Burkei, a distinct form, the pitchers deep green, flaked with crimson; splendid masses of *Hydrangea paniculata grandiflora*, *Berberis vulgaris*, *Eucalyptus coccifera*, and *Ceanothus* in variety. The two best of the latter for colour are Gloire de Versailles and grandiflora, the last of the two having the richest blue flowers. *C. azureus albidus* has almost white flowers, and in those of Marie Simon there is a pronounced pink tinge. A seedling variety was shown which has pink close heads of bloom, not so free and graceful as those of the Gloire de Versailles type. Cut shoots of that noble Japanese shrub, *Daphniphyllum glaucescens*, were also exhibited. To judge of its ornamental qualities it should be seen in the Coombe Wood Nursery of this firm.

There were several miscellaneous exhibits. Mr. Ross brought from the Pendell Court Gardens splendid flowering stems of *Aphelandra cristata* and *Hibiscus pedunculatus*, both of which are described in "Notes of the Week," p. 262. Messrs. Dobbie & Co., Rothesay, Buteshire, had three varieties of French Marigolds. One had pure self-yellow flowers, fully double, and very striking. Another had double flowers of a rich crimson colour, each of the florets having a rim of gold, and the other was pure yellow, richly striped with maroon. These are three excellent types, far finer than the German strains, and not ungainly in size. A single variety, the flowers yellow, broadly margined with maroon, was very effective. Mr. R. Dean, Ealing, exhibited French Marigold aurea floribunda, dwarf, the flowers small, freely produced, and rich yellow; *Dianthus Snowflake*, alluded to above; and King of the Crimsons double *Dianthus*.

Mr. G. Stevens, Putney, showed good blooms of the incurved *Chrysanthemum* Sam Henshaw, the reverse of the florets silvery-white, the other side magenta. Messrs. J. Laing and Sons had a group of early *Chrysanthemums*, including Grace Attick, a white, thread-petalled Japanese variety, valuable for its earliness. We sadly want variety in early *Chrysanthemums*, both in the shape and colour of the flowers. Most of them are of the Pompon race, and more than half are yellow, or yellow mixed with bronze. A very pretty pink self-coloured border Carnation came from Messrs. Dicksons and Co., Edinburgh.

The only Orchid besides those mentioned above was a plant of *Miltonia vexillaria Leopoldi*, from Baron Schroeder. It bore a spike of four or five flowers, which are like those of the variety *superba* of Mr. Tautz. They are about 1½ inches across and rich rose, veined with a deeper shade; the centre of the flower is stained with chocolate.

Fruit committee.—There was a good show of fruit. Messrs. W. Paul and Son had a large collection of Apples and Pears. There were good fruits of Souvenir du Congrès and Louise Bonne of Jersey Pears; and of Apples the finest specimens were those of Scarlet Pearmain, brilliantly coloured, Melon Apple, King of the Pippins, Cox's Pomona, Pott's Seedling, Lord Derby, Fom Putt, Peasgood's Nonsuch, Beauty of Waltham, Hornmead's Pearmain, Emperor Alexander, Duchess of Oldenburg, Alfriston, Warner's King, Cellini and Bramley's Seedling (silver medal). Mr. W. Roupell, Roupell Park, had a very interesting exhibition of Frontignan Grapes, which are grown for their ex-

quisite flavour. There were excellent bunches of Purple Constantine, July Frontignan, Ascot, Grizzly, Trouveren, Primavis and Black Frontignans, Diamant Traube, described above, and Chasselas Musque. There were also good bunches of Mill Hill Hamburg, Canon Hall Muscat, and Dr. Hogg Grapes. Some of the bunches were cut from pot plants one year old, and all had been grown in the same house (silver medal). Messrs. John Laing and Sons had a good collection of Apples, the fruits large, clean, and representing first-rate varieties (bronze medal). A good show of Apples was also made by Messrs. Paul and Son, Cheshunt. Mr. Charles Edwards, Newtown House, Brickley, had unusually fine fruits of Lord Suffield.

NATIONAL CHRYSANTHEMUM SOCIETY.

FLORAL COMMITTEE.—A meeting of the floral committee was held on the first day of the recent show, Mr. E. Sanderson presiding, when the following awards were made: First-class certificates of merit to Messrs. Keynes and Co. for Dahlias Crimson Globe, a very bright self; John Hickling, a fine yellow self; Duke of Fife, brilliant crimson; and Alice Emily, yellow suffused with brown. To Mr. T. S. Ware for the following single Dahlias; W. C. Harvey, buff, with a crimson ring round the eye; Miss Jefferies, delicate pink, with broad crimson ring; and Duchess of Fife, amber, with side margins of reddish orange. To Mr. Charles Turner for Pompon Dahlias Cleopatra, plum, shaded with purple, a novel and distinct flower; and William Searl, orange-buff, quite distinct. To Mr. J. West for show Dahlia Mrs. West, a variety in the way of Mr. Dodds, but with a more perfect outline and better petal; and for Cactus Dahlia Centenary Year, a large, deep crimson variety in the way of Juarez. To Mr. T. W. Girdlestone for single Dahlia Gruppo. To Messrs. J. Cheal and Sons for single Dahlias Northern Star, red, with side margins of pale yellow; Eclipse, rosy mauve and salmon, with a dark ring round the eye; and to Cactus Dahlia Centennial, bright magenta-crimson, with side margins of maroon. To Messrs. J. Burrell and Co. for Gladiolus Gertrude, a remarkably fine white variety, with a purple flame on the throat; and Lilian, white, with slight flakes of rosy pink on the margins of the segments. To Mr. J. Crane for early-flowering Japanese Chrysanthemum, a pale silvery flower, highly spoken of by cultivators. To Messrs. Laing and Co. for Chrysanthemum Comtesse F. de Cerial, an early semi-curved variety, buff, with a dark shading. A collection of cut blooms of quilled Asters shown by Mr. Richard Dean, Ealing, was highly commended.

The Chrysanthemum Conference.

This meeting was held in the St. Stephen's Hall on the afternoon of the 11th inst., and was largely attended. Mr. Holmes presided, and the first paper, one of exceeding interest, was read by Mr. W. Piercy, of Forest Hill, who detailed his experiences in promoting the introduction of early blooming Chrysanthemums from abroad, and by raising from seed, in which latter effort he had been very successful. Mme. C. Desgrange, he said, was first discovered in a garden in Wales, and sent to him, but it afterwards came from the Continent under its present name. Mr. Piercy specially dealt with the difficulties which arose from seed-saving, which later led to an interesting discussion as to how some deep-coloured early varieties might be obtained by inducing some of the late ones to bloom early and getting them crossed with pollen from the early bloomers. Mr. A. Dean read for Mr. T. Turton, of Maiden Erleigh, a short paper descriptive of his method of culture for open-air planting, and the furnishing of a large quantity of flowers for cutting during the late summer and autumn. Mr. Turton dibbles his cuttings into old Asparagus hotbeds, and in these they root quickly in February, are then potted, returned to the frames, thence to cool frames, and after being well established in 4½-inch pots are finally planted out into the open ground in May, making fine edgings for single and Cactus Dahlias. After giving lists of the sorts

grown in three sections, Mr. Turton mentioned that having to send large quantities of flowers to Scotland during August, September, and October, he found none to travel so well as these early Chrysanthemums. Mr. Doughty, of Cranbrook, then read an admirable paper upon the treatment of the Chrysanthemum for exhibition from that date till November. In this paper the reader seemed to lay special stress upon the necessity for feeding the plants through top dressings and patent manures, specially referring to Thomson's and Clay's fertilisers. The general treatment of the plants, housing, nearness to the glass, &c., were also fully adverted upon. Later a discussion arose as to the chief pests of plants which eat holes in the leaves, a speaker stating that he could not put the evil down to the earwigs. Some attributed the damage to weevils, some to jumpers, others to thrips and fly, some to woodlice, and others yet were certain the earwig was the depredator. It was odd that no one should be absolutely certain which was the real enemy to the foliage. Acute observation should soon settle that matter. As most of the worst enemies of the Chrysanthemum ascend from the ground, it is a wonder none have yet tried the plan of putting a piece of brown paper tightly round the stick and stem, and smothering it with bird-lime, or some sticky compound to arrest the insects. Cordial votes of thanks were awarded to the readers of the papers on the proposal of Mr. G. Gordon, seconded by Mr. E. Sanderson, and supported by Mr. H. Cannell, and to the chairman on the proposal of Mr. Dean, who in asking for some information as to the centenary celebration next year, was informed that a sub-committee, which had the matter in hand, was very favourably progressing, and it was hoped such arrangements would be made with the Aquarium directors as would enable them to celebrate in a thoroughly fitting manner the centenary of the Chrysanthemum.

THE FRUITERERS' COMPANY AND FRUIT FARMING.

DURING the past few months the Fruiterers' Company have received several suggestions as to the encouragement of fruit culture in England, and it appears to be very generally thought by those persons best qualified to form an opinion that, if necessary care and judgment be exercised, the British growers of choice grades of hardy fruits can profitably compete with foreign growers. Undoubtedly a very large sum is annually lost to this country by reason of the neglect or want of knowledge of a judicious system of fruit production. This is, I believe, fully recognised at the present time. The subject is not confined to a few; it is a national industry, and affects landowners, land cultivators, fruit dealers, and, not least, fruit consumers.

The Fruiterers' Company, having received most valuable suggestions from the Lord Mayor of the City of London (who is deeply interested in the matter), Mr. Henry Chaplin, M.P., the President of the Board of Agriculture, and many other gentlemen, have passed a resolution, a copy of which I enclose for publication. The scheme will, I trust, receive the support of all classes, and, it is hoped, will result in encouraging and developing the fruit-growing industry in this country. The Lord Mayor has kindly undertaken to receive at the Mansion House subscriptions to the fund, and they can also be sent to the clerk of the company, Mr. O. C. T. Eagleton, 40, Chancery Lane, London.

R. S. MASON,

Master of the Fruiterers' Company.

65, Lincoln's Inn Fields, London, W.C., Sept. 13.

"Resolved,—That the Fruiterers' Company feel strongly the great importance of the question of fruit farming in England, and view with much concern the want of attention paid to the production of Apples, Pears, Plums, and other hardy fruits of fine quality, and deplore the frequently neglected state of many of the existing orchards.

"The Company, therefore, desire to encourage the development of the profitable culture of fruits

of high quality in England for the advantage of the grower and consumer, and for the better utilisation of agricultural land.

"With this object the Company propose to establish a fund of not less than £5000 (towards which they are willing to contribute £500), from the income whereof they intend annually to offer prizes for the best managed fruit-farms, plantations, or orchards."

MEMORIAL TO M. ROEHL.

AN international committee has just been formed to erect a monument to M. Roezl. This tribute, which we ought to render to a man who has done so much service to international horticulture, cannot be accomplished without the help of the horticultural journals. It has already been resolved to issue a circular inviting subscriptions for this object, and which ought to appear in the horticultural journals on the same day. I hope you will lend your help and join the international committee; also to say a few words regarding the memorial in THE GARDEN.

When the circular is ready, I shall have the pleasure to send it to all the papers. The international committee will be made up of—

ENGLAND.—Messrs. W. Robinson, H. J. Veitch, and F. Sander.

BELGIUM.—MM. Linden, Pynaert Van Geert, and Van Houtte.

FRANCE.—MM. Ed. André and Godefroy-Lebeuf.

SWITZERLAND.—MM. Froebel and Correvon.

GERMANY.—Dr. W. Wimarck and M. Kolb.

RUSSIA.—Dr. Regel.

AUSTRIA.—Baron Hruby and M. Thomayer.

Most of these gentlemen have received the idea with great favour. You will notice that the majority are editors of horticultural journals.

FRANZ THOMAYER, Prague, Bohemia,
Director of the Gardens of the City of
Prague, and Editor of "*Casopis
Českých zahradníků*" ("*Revue Horti-
cole*" of Bohemia).

* * It has been decided that the monument shall be erected at the birthplace of M. Roezl, that is, at Prague, and the Municipal Council of the town of Prague has already promised assistance. The monument will be erected in the public park.—F. T.

Hawkins and Bennett v. Ware.—The following is an extract from the award of the arbitrators: "We do award and certify that the plaintiffs' and defendant's Chrysanthemums, the subject of this action, are identical. That the plaintiffs are not entitled to any damages for the use of the name, title, or description "Mrs. Hawkins," as applied to a Chrysanthemum plant, for which the plaintiffs were awarded two first-class certificates of merit in September, 1888, and we award that the plaintiffs pay the whole costs of the action up to the date of the order of reference dated the 22nd day of Aug., 1889; and we further award that the whole of the costs of the arbitration and award be borne in equal moieties by the said plaintiffs and defendant respectively."

Correction.—On p. 253 of THE GARDEN (Sept. 14) in article on "Early Apples," please read Beauty of Bath instead of Beauty of Kent.

T. H. D.—Please send the bulbs. The flowers look as if the plants had been kept in a close, moist atmosphere.

Tojdholu.—Possibly you have kept the plant too dry. Please send more particulars as to treatment.

Names of fruit.—William Over.—Pear, Windsor.—Croft, Brixton.—Pear, Beurré Diel.—J. Bennett.—Pears: 1, rotten; 2, Doyenné du Comice.

Names of plants.—W. S. B.—Japan Asparagus (*Polygonum cuspidatum*).—J. R.—The Orchid is a form of *Cattleya Gaskelliana*; the other is *Hieracium aurantiacum*.—W. L.—No improvement on others already in cultivation.—H. G. Oeler.—1, please send in flower; 2, *Erigeron mucronatus*; 3, *Lysimachia clethroides*.—D. H.—1, *Heliotrope Miss Nightingale*; 2, *Aconitum autumnale*; 3, double perennial Sunflower; 4, *Lithospermum prostratum*.

WOODS & FORESTS.

WHAT SHALL WE PLANT?

THE LARCH.

IN THE GARDEN (Sept. 14, p. 258) I pointed out the utility of planting the common Ash as a thrifty hard-wooded tree, capable of being turned to a profitable account at all stages of its growth; but among coniferous trees grown under ordinary circumstances as regards soil and climate I have found the Larch to be by far the best, for, like the former, its wood is lasting and durable at all stages of its growth, and capable of being used for a great variety of purposes from the time of the first thinning of the plantations up to the time that the tree reaches the years of maturity. No doubt to grow the Larch to the best advantage, it should be planted upon loose friable soil, free of stagnant water, and not liable to become too dry during the summer; at the same time, experience teaches us that it can and has been grown to a profitable size on very inferior ground, provided that it is not absolutely waterlogged or composed principally of hard impervious till. Seeing that the tree is so valuable, a great deal has been said and written from time to time regarding its culture and general management, and it is to be regretted that a good deal of the matter brought to bear upon the subject is of a rather misleading character, and cannot be borne out by the test of actual experience and observation. I saw it stated, for example, in a paper some time ago that the Larch would add about 2 cubic feet of wood to its annual growth, but I have never found it capable of doing anything of the sort, and it is only under exceptionally favourable circumstances that it adds 1 cubic foot of timber to its annual growth. The annual increase of young Larch trees is from 6 inches to 10 inches, and although instances have been known of old-established Larch trees in a perfect state of health having added from 2 cubic feet to 4 cubic feet of timber to their yearly growth for a time, yet such is always the exception.

There are some districts in Scotland where the Larch has been planted extensively on damp, cold clay land, and after some forty years' growth the average cubical contents per tree were only about 10 cubic feet of hard red-coloured timber, which was found to be very durable and always commanded a ready market and a high price. From ground of a similar texture as the above that contained 300 trees per acre, about forty years old, I sold the trees at an average price of 10s. each, which amounted to £150, thus showing a yearly rent for the ground during that time of £3 15s. per acre. Although there is no account given of the value of the thinnings, yet it is assumed that the value of these for estate and other purposes will do more than cover the cost of the first formation and after management. Here, then, is an example where a crop of Larch paid a good rent to the proprietor on very inferior ground; in fact, the landlord told me that it was let to a tenant at a small rent, but as he failed to pay any rent at all, the ground was at length planted with timber trees, which have proved to be very remunerative. I should state that this was in Ireland. This ought to be an inducement to enterprising people to purchase cheap land in that country and have it planted with Larch, more especially as the tree thrives so well in the soil and climate, and is never affected with ulceration, blotch, or blister, which have proved so fatal to millions of trees of that species in this country. But Ireland is not the only country where the land-

lord cannot get his rent. Some short time ago when in England I was shown a considerable tract of arable land on a nobleman's estate where the tenant had paid no rent for some years, and although the land is not of the very best quality, yet it is good, open, fertile ground, and capable of yielding a fair crop under a proper system of tillage, as shown by the crops on similar land in the vicinity and by the timber trees in the plantations. While traversing one of the plantations at a distance of about a mile from the ground referred to, I was surprised at the size and appearance of some of the Scotch Fir and Cluster Pine trees, which reminded me of the Ballochbuie specimens on a small scale. Many of the trees had massive trunks of great size and uniformity throughout, the stems being clean and free of branches or twigs for a distance of some 40 feet or 50 feet from the ground. The ground is of a light, open, sandy nature, mixed with water-worn pebble stones. This class of ground is also capable of producing a profitable crop of Larch.

Landlords cannot do better than plant their inferior ground with timber trees. They add to the value of an estate immensely within a comparatively short space of time. But although the Larch does not attain a massive size on all soils alike, yet it is by far the most profitable tree to plant, for in cutting down and selling timber of different species of trees of the same age I have found the Larch to realise fully more than the double of any other tree of the same age. For this reason the Larch has been planted extensively on all classes of soil, as its timber is always looked after and commands a good price from the time it attains the size of poles and spars up to the size of shipbuilding timber. In planting this tree the planter should be very careful to only choose such trees as have been raised from the best of seed collected from the finest and healthiest trees in this country as well as plants raised from foreign seed gathered in the forests where the tree is a native. I have used both kinds, but prefer using the latter to that of the former in all cases where the plants have been raised from seed of a doubtful quality.

A congenial soil and thorough management are potent factors in the development of the Larch. The best class of plants can readily be distinguished by their clean glossy bark on the stem, free of bug and scale, full-sized prominent buds at the terminal points of the leading shoot and side branches, and their stout, stocky, well-furnished appearance, all of which go to show that they have been prepared with care and skill for forest planting.

J. B. WEBSTER.

Alder for hedges.—As a hedge plant the Alder is not so good as the Poplar, but as it is the most aquatic British tree that we have, it is worthy of being mentioned here as suitable to a class of soils and situations in which the Poplar will not grow freely. It delights in wet, swampy lands, and will grow tolerably even in the water. The plants for fences should be four years old, not more, because when older they are generally devoid of branches at the bottom. They may be set at a foot apart, and treated in every respect like the Poplar, trimming the fence with a hedge-bill, and keeping it at the height of 5 feet. The Alder will make a strong, branching fence, though not very close, and if pruned regularly as directed, is susceptible of a neatness in appearance much beyond what is generally believed of it. Few have the courage to keep it in subjection, being a tree of extraordinary exuberance, and striving for the first few years to put forth a leader, or, in other words, to assume its

tree-like shape. Afterwards, however, it seems to get reconciled to the form of the fence, which is to be accounted for by its producing, after repeated prunings, smaller spray or branches.—B.

Planting waste land.—As regards importance, it is generally admitted that our forestry interest stands next to that of agriculture; and it is satisfactory to observe that the reclamation by planting of numberless acres of waste land in these islands is at present attracting a good deal of attention. It is to be hoped that the owners of exposed or otherwise worthless tracts of land will take into serious consideration what so immediately concerns their interests. Were the subject of extended tree planting more generally understood, and the most judicious schemes acted upon, it is easy to anticipate the improved appearance and increased value of neglected districts in this country; for there is hardly a vacant corner or heathy waste which will not produce valuable crops of timber of one kind or other.—A.

Common brown Birch, as a nurse, is very superior to Oak, Ash, the white or ornamental Birch, and others. The brown Birch is common on our open plains, and among Oaks and Hazels in many coverts, holts, and thickets. It comes sufficiently true from seed, though differing only as a variety from the white Birch, and united with it by intermediate crosses or sub-varieties. The common brown Birch is the hardiest of all, and is the most ready to reproduce itself as coppice, which is a great merit. It does not become too tall, like the graceful and pendulous white Birch, which has been far too exclusively cultivated. The brown Birch is rigid and erect, of lower stature; its bark often partly brown, partly white.—R. C. E.

Transplanting Oaks.—Differences of opinion prevail respecting the advantages to be derived from Oaks raised direct from the acorns in the woods, as compared with those which are transplanted from the nursery, but there is every reason to believe that as good timber can be obtained by the one method as by the other. Where the young plants are undercut in the nursery they generally flourish more vigorously after removal, and the process of heading-down bark-bound and unhealthy-looking plants often, in a few years, gives them the lead of the uncultivated ones. Too much importance is attached to an undisturbed tap-root by those who forget that its main functions are lessened, or cease altogether, when the tree gets well established in the soil. Thus, when the top of an Oak assumes a rounded form, the tap-root ceases to descend, even though the lateral roots may still continue active.—A.

Wood of the Ailanthus.—Of trees introduced into the United States, the Ailanthus is said to be a much more valuable one than is generally admitted. For posts no timber is better suited. The testimony of many farmers shows that it is nearly as good as Locust, and for fuel it is equal to Oak. It is hardy, grows rapidly, and is said to be well adapted for the prairies in the western United States. In its native country (China) it often attains a height of 175 feet.

Destroying Moss on trees.—Some recommend sprinkling freshly powdered lime on the Moss in damp weather, which they say will kill the Moss without injuring the trees. A better way is first to scrape off the Moss with a light hoe, or the back of a knife, and then to wash the bark with lime-wash made from fresh lime, so thin as to give a slightly white appearance when dry—that is, with a consistency half-way between lime-water and white-wash.—A. C. G.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ROSE GARDEN.

T. W. GIRDLESTONE.

ROSES AT CHESHUNT.

THERE can be little doubt that among the main characteristics of modern Rose-growing in England, the far more general raising of seedlings in this country and the widely extended cultivation of the Tea-scented varieties rank most prominently. In old days, practically all the Roses were French, and even when one occasionally appeared with an English name, it generally turned out to be a French seedling that had been bought by an English grower who subsequently named and distributed it himself. Then, too, it was quite the exception to find a garden that boasted a collection of Tea-scented Roses, unless where they were coddled up indoors, as though they had been exotics.

But now all that has been changed; there are not a few extensive Rose gardens where practically the only Roses grown are the Tea-scented varieties. In some of the lists of new Roses published this spring, the number of genuine English novelties equalled the number of the selected French seedlings; and perhaps it would hardly be rash to prophesy that before long the number of Tea Roses in cultivation out of doors throughout this country will exceed that of any other class, and that every grower will be a raiser of seedlings. In the meantime, the extent of these modern developments in Rose-growing may be seen to conspicuous advantage in the "Old" Nurseries at Cheshunt. Mr. George Paul's raised beds for Teas are of world-wide reputation, and the employment of this simple device has probably facilitated the growing of innumerable Tea Roses with success in soils and districts at one time considered far too wet and cold for the purpose, while the Cheshunt firm was one of the first to take up the raising of seedlings systematically and on a large scale.

Among the seedlings in flower in the second week of July were two of those that were first distributed this spring. Of these, John D. Pawle is a promising dark Rose, with a fine substantial petal and a very bright flush of colour towards the centre of the flower, a variety that was on several occasions well exhibited this year. The second novelty, Cheshunt Scarlet, is a most brilliant addition in point of colour. The flowers are not large and are only semi-double, but the variety received a first-class certificate from the Royal Horticultural Society as a decorative Rose, and it is certainly a fact that the effect of a group of plants in flower in the garden, or of a bowl filled with the buds and half-expanded blossoms is irresistibly attractive. A third Rose was distributed from Cheshunt for the first time this spring in addition to the Cheshunt-raised seedlings, namely, Margaret Haywood, a sport from Mme. Clemence Joigneaux, that originated in the garden of Mr. T. B. Haywood, of Reigate. Mme. Clemence Joigneaux is a very early-flowering Rose, and consequently the new variety, which retains the vigorous habit of Liabaud's seedling, differing only in the colour of the flowers, was past its best on the 10th of July; but the colour is a very pleasing bright pink, and if indeed the

flower be worthy of its name, it cannot fail to prove an invaluable acquisition.

Of the seedlings not yet sent out two were especially conspicuous—a most vivid and beautiful crimson named Bruce Findlay, and a variety with a habit of growth as massive as that of Her Majesty, but more handsome, from the fact that the stems and prickles were of a rich red colour and the foliage of the deepest green, and apparently not liable to mildew, while the flowers were of a deep maroon-crimson colour.

A fine seedling was raised some time back of which great things were expected, but it was seen to bear some resemblance to Alfred Colomb; and as seedlings are rigorously tested at Cheshunt before being sent out, a row of the new-comer was budded alongside Alfred Colomb and Marshall P. Wilder, with the disappointing result of proving the seedling to be absolutely identical with the old variety. The word "variety" is here used in the singular advisedly, for Mr. George Paul has this year made the same experiment that was made at Sunningdale two years ago, of growing a considerable number of plants of Alfred Colomb and Marshall P. Wilder side by side, and has arrived at precisely the same result, namely, the absolute conviction that Alfred Colomb and Marshall P. Wilder are in every respect identical, and will next year unquestionably have to be bracketed together.

Among the new Roses from the Continent there have been during the last few years a considerable number of climbing or Dijon Teas, including several of Herr Drögemüller's seedlings of some promise from Germany. There is always a certain amount of difficulty in deciding upon the value of fresh additions in this class, as vigorous climbers rarely flower in character as maidens, and if they are transplanted they require a season or two to establish themselves sufficiently to show themselves at their best. The consequence is that many rosarians even among the leading growers are comparatively ignorant of the relative value and characteristics of the now numerous descendants of Gloire de Dijon, which ought to be among the most valuable and best known of garden Roses. With a view to clearing up this matter, Mr. George Paul has got together all the recent varieties of Dijon Teas, and has filled a large house with fine specimens in pots; of these he proposes to plant an example of each out of doors against high wire walls or fences in order that all may be grown together and carefully compared in every respect, so that for the next year or two the famous "wire walls" at Cheshunt will be of especial interest.

As a general rule, especially in a hot season like that of 1889, Roses in the south of England are liable to be somewhat past their best after the first week in July, and it was therefore a pleasant surprise to find on the 10th that the display of bloom in the Rose fields at Cheshunt was only just in perfection. This lateness, however, was quickly accounted for when it was seen what an immense extension had been made in the employment of the seedling Brier as a stock, for although there is little, if any, appreciable difference in the time of blooming of cut-back plants on various stocks, it is an established fact that maiden blooms on seedling Briers are produced considerably later than on Manetti stocks. One of the points most frequently insisted on at the Rose Conference held at Chiswick this year was the superiority of the Brier, and especially of the seedling Brier, as a stock for Roses of all kinds, and the uniform excellence of the maiden blooms of many of the smooth-wooded, dark, and Victor Verdier Roses at Cheshunt sufficiently attested the soundness

of this contention. In conspicuous beauty were seen the exquisite Suzanne-Marie Rodocanachi, Comte Raimbaud, Comtesse de Paris (Lévêque, 1882), a charming rose-colour; Mme. Georges Schwartz, a good Rose restored to cultivation by the employment of the Brier, for, like all the Victor Verdier race, it will not thrive upon the Manetti stock; Comtesse de Camando, a useful crimson; Comte de Paris, the youngest of that name; Duke of Connaught (Paul), which has been wonderfully fine this year; Her Majesty, which it is a waste of time to bud on Manetti; Mme. Bois, a lovely rose; Mme. Henri Pereire, a very vigorous and promising dark crimson; Rosieriste Jacobs, an excellent variety, at last obtaining the recognition it deserves; Victor Hugo, this year better than Xavier Olibo; and the beautiful Mme. Joseph Desbois, a more refined Captain Christy.

Mr. George Paul's excellent collection of Rose species and single varieties continues of increasing interest. The curious and beautiful simple-leaved Rose, *R. berberidifolia* (not the variety Hardyi, but the true Persian species), is now flourishing planted out in one of the houses, while on the rockery at Broxbourne it would have been impossible to imagine anything much more beautiful than the handsome examples of *Rosa lucida* covered with delicate rose-coloured flowers charmingly displayed against their natural background of lustrous, deep green foliage.

THE BEST ROSES.

TO THE EDITOR OF THE GARDEN.

SIR,—I place before you an idea which has no originality in it, but might be very useful to the great majority of either actual or would-be Rose growers. Invite opinions from all your readers who are experienced Rose growers on the points mentioned hereafter. As you will find considerable diversity of opinion, the results may be valuable and an analysis interesting.

1. Which are the six or eight most perpetual-flowering Roses?—Personally I would give La France, Gloire de Dijon, Belle Lyonnaise, Homère, Hon. E. Gifford, Viscountess Folkestone, Marie Van Houtte, Charles Lefebvre.

2. Which are the six sweetest scented Roses?—La France, Mme. de Watteville, Mrs. John Laing, Viscountess Folkestone, Marie Baumann, Celine Forestier.

3. Which are the six best red Roses?—Marie Baumann, Ulrich Brunner, Charles Lefebvre, Dupuy Jamain, Xavier Olibo, A. K. Williams.

4. Which are the six best pink or rose-coloured Roses?—La France, Mrs. John Laing, Baroness Rothschild, Her Majesty, H. Schultheis, Marquise de Castellane.

5. Which are the six best cream or white Roses?—Merveille de Lyon, Hon. E. Gifford, Innocente Pirola, Boule de Neige, Viscountess Folkestone, Niphetos.

6. Six best yellows?—Gloire de Dijon, Maréchal Niel, Belle Lyonnaise, Mme. Falcot, Francisca Krüger, Etoile de Lyon.

7. Six best Teas?—Catherine Mermet, Comtesse de Nadaillac, Marie Van Houtte, Mme. de Watteville, Souvenir d'Elise, Mme. Lambard.

8. Six best Noisettes?—Maréchal Niel, Lamarque, Celine Forestier, Caroline Kuster, Rêve d'Or, Bouquet d'Or.
C. J. GRAHAME.

Croydon.

Rose Mme. Caroline Kuster.—A very beautiful and desirable Rose is Mme. Caroline Kuster, a flower and leaf of which are shown in the sketch I send you. It was introduced by Pernet in 1873, and is usually classed as a Noisette Rose, though its bushy rather than climbing habit has led some rosarians to place it in the list of pure Tea Roses. It has, however, all the leading cha-

racteristics of a Noisette. The growth is very strong, more so than in most Tea Roses; the leaves are long and graceful, each composed usually of seven slender leaflets, and the flowers appear in loose, terminal clusters. The new growth is smooth and tinged with bronze, but with age the colour changes to a rich clear green. The colour of foliage as well as the manner of growth and flowering, and in fact the general appearance of the plant, is not unlike that of the Polyantha C. Brunner. Both buds and flowers are very much admired. The former are long and pointed, and of a cream-white colour shaded with pink, and flaked and spotted with carmine. As the buds develop this marking fades, and the central petals appear cream-white, shading to a rich golden yellow at the base. The broad, wax-like petals recurve in the most graceful and charming manner, and this, together with the exquisite shading referred to, the large, full, globular form, and delicate, pleasing fragrance, combine to make Mme. Caroline Kuster one of the most desirable of Roses for bouquet work or for personal adornment. As a bedding or outdoor plant this Rose certainly has few equals. Free in growth, profuse and continuous in bloom, not subject to mildew or blight, and erect in habit, it possesses qualities which commend it to every gardener who wishes a fine group or hedge of outdoor Roses.—GEO. W. PARK, *Fannettsburg, Pa.*

SHORT NOTES.—ROSES.

Princess of Wales.—This is a charming Tea Rose for supplying button-hole bouquets at this season. The form of the buds is perfect, while the delicate pink of the petals is very pleasing.—M.

Countess of Oxford is a vigorous free-blooming Hybrid Perpetual variety. Plants of it at Kew were last week covered with flowers, the colour of which is carmine-red. It is an excellent autumnal.

Rose Souvenir de Therese Levet, more commonly called red Niphetos, is a capital variety for supplying buds of excellent form for button-hole bouquets. On a south wall it flourishes capitally, flowering at this time of the year very freely.—E. M.

Corinna is the name of a new Tea Rose in possession of Messrs. William Paul & Son. Several flowers of it were shown recently, and their colour is like that of Marie Van Houtte, but richer, and instead of white, this is changed to a charming cream shade. We shall hear much of Corinna, as it has all the appearance of a first class Tea Rose.

Sappho, one of Messrs. William Paul & Son's new Tea Roses of this year, was well exhibited at the Royal Horticultural Society's meeting on Sept. 14. It promises to be a good autumnal, and the colour of the flowers is most delicate; the buds are fawn, flushed with rose, the expanded blooms shaded buff and yellow, with bright yellow in the centre.

Baronne de Maynard.—There are very few white Roses so useful as this variety for supplying cut blooms over a long season. Worked on the common Brier, capital standards may be obtained. Although the blooms of this sort are not very large, they are of exceptionally good form in a partly expanded state, and indeed when they are fully developed they do not show nearly so much eye as do some varieties. The deep green of its leaves enhances the value of the blooms, which are of the purest white, while the fragrance leaves nothing to be desired.—M.

Aimee Vibert.—What a wonderful supply of blooms this variety will give at this season if young plants are raised say every two years. Although its regular season of flowering is during July, more especially the latter part, at the present time there are numbers of both buds and blossoms upon plants which have thrown up stout sucker-like shoots, and which at from 3 feet to 4 feet of growth are terminated by large trusses of flower-buds. Nothing amongst the insect pests seems to trouble this Rose, so thickly is it clothed with dark green foliage, which very much enhances its appearance.—S.

Marechal Niel in flower in September out of doors is not a common occurrence, I should think, but where blooms of this grand Rose can be had from outside plants they must be highly prized. Our plant trained on a wall facing south, and which flowered freely and well during the early part of the summer, has now again some capital blossoms fully expanded. These contrast well with the bronzy leaves formed by the young growth. After the usual crops of blooms

in the summer had faded some older branches were cut away, thus causing young shoots to start, and which have now produced the flowers mentioned.—E. M.

ROSES AT COLCHESTER.

So far as the eastern counties are concerned, the season now drawing to a close has not been one of the most favourable for Roses. The almost tropical heat during the day and the cold at night which characterised the month of May, and the tremendous storms of hail and rain which came in early June had their effects upon the Roses, in some cases to a disastrous extent. September, however, came in warm and settled, and the thousands of buds upon the Roses soon opened out into brilliant and beautiful flowers. On a fine day in the middle of September I paid a visit to the extensive Rose grounds of Mr. B. R. Cant at Colchester, and the Teas, true to that valuable quality of perpetual blooming, were flowering profusely. Standards and dwarfs, old plants and young ones, each kind in a large breadth produced individual effects.

To divide this colour scene and to examine its component parts means that we must first pass in review briefly some of the different kinds of Teas, both old and new. Anna Olivier was a mass of flowers, both in the characteristic urn-shaped rosy-tinted bud state and the fully expanded flower, and Marie Van Houtte was as beautiful as in the height of summer, for the bright sun had been sufficient to tinge and suffuse with rose its delicate yellow blooms. Comtesse de Nadaillac had blooms of good size and substance, although they lacked those charming combinations of delicate hues which suffuse the earlier flowers. Comtesse Riza du Parc was charming, as in fact it always is, both in vigorous growth and abundance of bloom. In its clear, bright shade of copper-tinted rose we have a colour not common among the Teas, but beautiful withal. Francisca Kruger was exceedingly free and pretty, the bushes being quite covered with a mass of light fawn or copper-yellow flowers, whilst praise of Mme. Lambard would almost seem superfluous, for it is always good, and its exceeding variability of form and hue is not the least of its charms. Devoniensis was full of creamy white buds and blooms, and in its colour it is still one of the best in spite of the fact that it has been with us forty-nine years. Souvenir d'un Ami is almost as old, but quite indispensable; it was handsome in foliage and the glossy greenness of the leaves admirably set off the large globular rosy flowers. Upon Souvenir d'Elise Vardon there were fine blooms of exquisite form and delicate tint, and Rubens, an old but good kind now seldom seen, was loaded with creamy flowers. Innocente Pirola had some fine flesh-suffused creamy-white blossoms, and Jean Ducher was good.

Coming down to newer kinds, Mme. de Watteville was magnificent, especially a large breadth of standards, the clusters of bloom waving in a gentle breeze, which opened out the shell-like petals and disclosed the rosy centre of the flowers, rendering them conspicuous from a distance. Comtesse de Frigneuse was full of its canary-yellow, sweetly-scented flowers, this kind and Perle des Jardins, which was omitted from the notice of older kinds, being the two best dwarf yellow Tea Roses we have. Two more good kinds can be added to that vigorous and beautiful race of Dijon Teas. They are Duchesse d'Auerstadt and Henriette de Beauveau. Both have the Dijon vigour and both have yellow flowers, those of the first named kind being pure yellow in the bud and deepening into a chamois-yellow as they expand. Henriette de Beauveau has full, globular, sweetly-scented flowers of a clear pale yellow, which becomes deeper towards the centre of the flower. Ernest Metz is another of Guillo's charming kinds, and it will probably quickly advance into favour, for undoubtedly it is a grand new kind. Its tender rose colour is charming, and its large buds and blooms are borne stiff and erect upon strong stout footstalks. It is valued as an addition to exhibition kinds, but being a vigorous grower it should also become popular in gardens. Ethel Brownlow was

extremely pretty, having exquisite buds of a salmon-pink hue, but extremely variable both in shape and colour. Mme. Hoste is another of Guillo's kinds which appeared in 1887. It is good in every way, a vigorous grower, a free bloomer, with a fine flower of a pale primrose-yellow, but deeper internally. Luciole was bright and beautiful. It has long, pointed buds of an indescribable hue, shades of bright rose and yellow being blended in a charming manner. Two of Bernaix's new kinds, both of which appeared in 1886, are Mme. Etienne and Mme. Scipion Cochet. Both are promising kinds. Mme. Etienne has large, globular flowers of a flesh or tender rose colour, whilst those of Mme. Scipion Cochet have the same soft rose hue suffused over a white ground. Both kinds are characterised by handsome glossy foliage. Souvenir de Therese Levet is the best of the red Teas; it is dwarf and free, and of a clear decided colour. Princess of Wales was very fine, with large, long buds and full, well-formed flowers; and The Bride, which was growing in great quantity, was also flowering abundantly. This beautiful white kind is now too well known to need further description here. Marquise de Vivens was beautiful, and as a garden Rose it should become very popular, for its long, pointed buds tipped with bright rosy carmine suffused with yellow expand into flowers which, if not of exhibition merit, are charming as they droop in clusters upon the vigorous bushes. This kind was well figured in THE GARDEN for Feb. 16 of this year. That the Teas are the true Perpetuals is fully proved by the wealth of beautiful flowers upon these large breadths of Roses at Colchester. Comparisons can be made between the two great sections Teas and so-called Hybrid Perpetuals, and a pretty accurate conclusion drawn as to their respective merits, but the palm must certainly be accorded to the Teas.

Their greatest merit is their autumnal blooming qualities. This quality, of course, is also claimed for many of the Hybrid Perpetuals, but in their case what does it mean after all? merely the production of a few blooms which terminate the long and few shoots of the current season's growth. With the Teas it means another great outburst of blossom to wind up their long season, for many of the finer kinds of Teas, when the bushes become strong, practically do not cease flowering between June and October.

I do not wish to speak disparagingly of the Hybrid Perpetuals in this respect; they are beautiful and valuable in the garden; but I would like to see the Teas placed on an equal footing with them and receive the same amount of attention. Then, and not till then, shall we find out the capabilities of the Teas, or realise the important part they ought to play in good flower gardening. There is room enough in the garden for both classes, but Hybrid Perpetuals may practically be said to close with July, and often by August they are almost defoliated by red rust and other complaints. Now, rust is unknown among the Teas; their foliage is ever fresh and beautiful, and there are always flowers to be had. There is an important lesson to be learnt from what is done at Colchester and other places with Tea Roses in the open air. The success explodes that unfortunate, but much cherished fallacy of supposed tenderness. Mr. Cant gives slight protection to his Teas, but other growers do not; this, however, is only a little matter of detail, and soil, situation or aspect rules it; whilst in the end, even if protection must be given, what is it compared with that costly system of protecting and raising those poor bedding plants upon which so many smile and rest contented?

I visited Mr. Cant's Rose nursery not to report upon exhibition Roses, all of which are very well in their way, but to gain further information as to the value of the Tea Rose as an English summer garden flower.

The effect of the broad masses in the nursery may on a diminished scale be had and enjoyed in the flower garden by having large beds, good soil, and bold groups of Roses. Experiments have been tried in gardens I know with all these best

Tea Roses boldly grouped, and each successive season serves to give stronger proof of their value and exceeding beauty. In comparison with these groups of Roses the most elaborately bedded-out flower garden is very poor. The whole secret of success devolves upon one thing—planting strong open-air-grown plants worked upon the Brier stock. The planting out in spring of grafted pot plants is entirely wrong, and has done much harm. This is a long digression from what purports to be a notice of Roses at Colchester, but it is pardonable, in fact, necessary, as embodying important deductions drawn from observations which bring to light a not very creditable state of affairs, namely, that often when Roses are plentiful in nurseries, in gardens they are almost a blank. Although the Teas have been given special prominence here, it should be mentioned that the stock of all kinds of Roses was healthy, extensive, and good, and I could not but wonder what really becomes of the thousands of plants sold annually, considering how few are devoted to the beautifying of our gardens. The love of standard Roses is still strong in the hearts of many, judging from the great stock I saw, especially of the standard Teas, such kinds as Mme. de Watteville, Anna Olivier, Mme. Lambard, and others being remarkably fine. For the dwarf Teas, Mr. Cant pins his faith to the cutting Brier as a stock, contending that it gives an earlier and better bloom; the essential difference, however, is so small, that it is not a matter of much moment from a gardening point of view.

Among the Hybrid Perpetuals a few kinds were specially noticed. Ulrich Brunner was covered with magnificent blooms, borne upon clean, healthy growth which is never attacked by mildew or rust. In Mr Cant's opinion, this is the most valuable sort that has been introduced for many years, indispensable both for the garden and the exhibition table. On the other hand, Gloire de Margottin, an 1887 Rose, will become popular for the garden only. The blooms, though not of an exhibition standard, are beautiful, and of a brilliant red colour. It is a rambling, vigorous grower, and a very free bloomer even in autumn. A striking effect may be produced by planting this Rose in a bold group, and when established pegging down its long shoots. Upon Eclair there were some fine blooms, large, full, and vivid in colour. This fine old kind is hardly known, owing, Mr. Cant says, to the fact that it blooms so late that it is hardly ever possible to obtain a flower of it when the Rose shows are on. A brilliant and beautiful Rose that was flowering well was Gloire de Bourg-la-Reine. Its long name will be its greatest drawback, for in its distinct and beautiful form and striking colour we have a Rose of great merit.

A curious fact about that lovely old Rose Marguerite de St. Amand is that rabbits have a special liking for it, and Mr. Cant says, put it in what part of the nursery he will, the rabbits will find it and eat it to the ground in hard weather. To meet the requirements of a large trade in cut blooms of Roses, some of the old free-flowering kinds are grown in great quantity. La France and Souvenir de la Malmaison in large breadths were full of flower, although thousands of blooms had been cut from these plants during the season.

To supply cut blooms, it is important to have good kinds growing in quantity, for Mr. Cant says that it is not unusual to have an order for 1000 blooms of Baroness Rothschild or La France alone. But with 20 acres of Roses, whether the orders are for thousands of plants or cut blooms, Mr. Cant's resources are equal to any demand likely to be made upon them. A. H.

Length of Rose names.—“The fact that the Rose Her Majesty has an English and readily understood name is almost certain to make it popular, but all Roses, especially those with long French names, cannot claim such a distinction. I noted in Messrs. Veitch and Sons' stand at the recent Ealing show a glorious flower of Gloire de Bourg-la-Reine, but, let a Rose be ever so beautiful, it is to some extent handicapped by such an intolerably long name, and reporters too often

carefully omit mentioning it. Would it not be possible for our home traders, in selecting French Roses, to have these abominably long names revised, and, still further, to some extent anglicised?”—D. The *Journal des Roses* in quoting this note makes the following comments. While we object to their names, they object to ours. A Rose should have one, or at most two names. “It is very evident that certain French Roses have names of inordinate length; but we believe, however, that the variety mentioned above (Gloire de Bourg-la-Reine) could not be classed in this category, for we do not find that this name is longer than the following: William Francis Bennett, Princess Mary of Cambridge, Mistress Ethel Brownlow, Lady Mary Fitzwilliam, &c. They are, however, varieties of English origin, or named in England.”

NOTES OF THE WEEK.

Pear Beurre d'Amanlis.—I send you a photograph of a tree of this Pear. The tree was moved in October, 1888. This season it bore 2 bushels of fruit, and we have fifty other trees quite as good. It is a free pyramid on the Quince.—G. BUNYARD, Maidstone.

Amasonia punicea.—There is a bright group of this in Messrs. Veitch's Chelsea nursery. The scarlet bracts and primrose-yellow flowers make bright colours in a warm house. A coloured plate of it was given in THE GARDEN, February 14, 1885.

Ceanothus Gloire de Vaise is the best of the Ceanothuses. The plant is of very dwarf habit, free-flowering, and has small leaves. The long racemes of rich blue flowers make a good show in autumn. It has been in the Chiswick Gardens for many years.

Dendrobium Dearei lasts in bloom perhaps longer than any Orchid. A plant in Messrs. Veitch's Chelsea nursery has a spike of flowers which have remained fresh for nearly two months, and are still in good condition. It is a beautiful white-flowered species.

Diplacus glutinosus is planted out in the borders at Castle Howard, Yorks, and remains unprotected through the winter. It flowers freely and grows vigorously. It is usually regarded as a greenhouse plant, but this note may tempt some to plant it in the open.

Darlingtonia.—A plant grown by Mr. Duncan Welsh at Mount Merrion has now thirty or forty pitchers of all sizes, the highest 3 feet 8 inches, and several others are over 3 feet. The plant is in a small pan, and I do not think a Californian bog could do better so far as leaf stature is concerned.—F. W. BURBIDGE.

Lilium nepalense.—This is in bloom with Messrs. Veitch at Chelsea. It is a beautiful Lily, the flowers unusually distinct in colour, which is purple-lake in the centre of the flower, the reflexed half of the segments rich yellow. A coloured plate of it was given in THE GARDEN, January 19, 1889.

Vanda tricolor planilabris.—This fine variety is flowering in several collections round London, and it is worthy of note that this kind is always an autumn and winter bloomer, and upon this account is valuable, as it may be depended upon to produce highly fragrant flowers when the other species have passed.

Lælia elegans.—From Mr. Cannon, of Merton, comes a flower of this species. It is one of the light-flowered forms, and is now very beautiful in his collection. The flowers are large, the sepals and petals white, flushed with flesh colour, the middle lobe of the lip being rich magenta-purple, which renders it very handsome.

Double Cornflowers.—We send you herewith a few flowers of our new double-flowered Cornflower, just to show the different colours; the form of the flowers (being the last ones) has been more developed during the summer months.—HAAGE & SCHMIDT, Erfurt.

*** Our experience with the Cornflower is that the prettiest of all is the common blue form.—ED.

China Asters from Langport.—We beg to enclose a few blooms of our Globe Quilled Asters (named varieties) of which we have half an acre now in perfection in our seed grounds here.—MESSRS. KELWAY AND SON, Langport.

*** Good types. The colours rich and decided.—ED.

Seedling Gloxinias.—Of recent years there have been marked strides made with the Gloxinia. A large batch of seedling varieties in flower now in the Chelsea nursery of Messrs. J. Veitch and Sons shows

this. The colours are brighter and more diversified, especially amongst the spotted kinds, but the showiest are the self crimson.

Bramley Apple.—Mr. Merryweather tells us that the Bramley Apple is as fertile as ever this year, when the Apple crop generally is so bad. Young trees with us grow more vigorously than other kinds.

Sea Buckthorn (*Hippophae rhamnoides*).—This is planted at the edge of the round pond near the Palm house in the Royal Gardens, Kew, and it is as brilliant as any flower, with its masses of yellowish berries. These crowd the twiggy branches and make a bright effect. Few think of our common native Sea Buckthorn for such a position.

Flowers from Dublin.—Mr. Burbidge sends us from the Trinity College Gardens a gathering of autumn flowers—the large-flowered *Helianthus multiflorus maximus* and *H. m. simplex*, which produces its flowers back to back on the stem; a spray of the white *Clematis Jackmani* is delicate and beautiful; a mass of *Acaena microphylla* shows bright colour.

Nepenthes at Chelsea.—These are in full character with Messrs. Veitch. There are masses of *N. Mastersiana*, one plant having quite fifty pitchers. *N. Dicksoniana* is a beautiful kind, the pitchers large, rich, blotched with bright red. *N. Curtisii superba* has the pitchers richly mottled with almost black on a deep green ground. There are all the leading kinds in this collection.

Achimenes coccinea.—Those who seek novelties miss good things like this scarlet-flowered *Achimenes*, which though introduced from Jamaica as far back as 1778 has lost none of its brilliancy. It is as good as any of its class. The flowers are rich scarlet, small, and by their profusion hide the growth. One house in the Castle Howard Gardens was almost filled with it.

Clematis Davidiana.—This fine species was referred to in very favourable terms by “A. H.” in a recent issue of THE GARDEN, and it well merits the praise given it; but your contributor omitted any reference to the fragrance of its dense flower clusters, which is assuredly one of its strong points. It appears to love a rich and rather damp soil, in which the growth of established plants is very vigorous.—W. T., Ipswich.

Annual flowers at Scarborough.—Those who think annuals have only a brief season of flowering in midsummer should have seen the rich beds of them at Scarborough during August. A beautiful public garden is cut out of the steep North Cliff, and here, in full view of the ocean, annual flowers of the commoner kinds flower as we seldom see them in the south. This picturesque sea garden was planted with nothing but annuals, except for a few perennials at the entrance gate.

Hardy flowers at Kew.—Those who say that after July there are few hardy flowers should have seen the Royal Gardens, Kew, in the middle of September. There were rich beds of *Rudbeckia speciosa*, masses of *Aster acris*, Japanese *Anemones* in both rose and white colours, *Roses*, *Snape dragons*, perennial *Sunflowers* of the best types, *Pampas Grasses* in perfection, and numberless pretty rock plants in bloom. Already tender bedders are spoilt, though not blackened by the few early morning frosts that have not touched hardy flowers.

History of the Cactus Dahlia.—A few interesting facts, in addition to those on p. 298, I have received from Mr. Cannell, from whose flowers the coloured plate of Juarez (which was published in THE GARDEN, May 7, 1881) was prepared. He writes me that he sent a plant of Juarez to Portugal to grow from seed, and from that seed obtained the varieties Lady M. Marsham, Lady Kerrison, Lady E. Dyke, and Lady Hume Campbell. Since then Mr. Cannell has raised the kinds Sir T. Lawrence, Lady Ardilaun, Black Knight, and A. W. Tait.—C.

Cestrum aurantiacum.—This is a very useful plant for covering a pillar or wall in a cool greenhouse or conservatory. Its habit is closer and more compact than that of *C. fasciculatum*, Newell, or any of the species common under cultivation, and it is also very free-flowering. A plant in the temperate house at Kew has for some weeks been an object of great beauty, the dense panicles of orange-yellow flowers being produced in great abundance. It blooms several times a year. To obtain the best

results with this and all the other species of *Cestrum* they should be planted out in rich, loamy soil, giving them abundance of water at all times. The difference such treatment effects in a few months on a plant previously starved in a pot is simply astonishing.—W. B.

Schubertia grandiflora.—From what I have seen of this plant, it does not appear to me likely that it will ever become very popular as an exhibition specimen. The colour of the flowers is a dirty white, and although the blooms are freely produced, they, on account of the reason stated, do not appear to receive much favour. Certainly it will never rival, let alone supersede *Stephanotis floribunda*, which it slightly resembles in form of flower. In a small span-roofed house at Hazelholt, Bishop's Waltham, I lately saw a fine plant of it, freely flowered and carrying excellent foliage.—M.

Apple Huntingdon Codlin.—Messrs. Wood and Ingram, Huntingdon, send us samples of this Apple with the following note: "We find it one of the best when cooked and a most prolific bearer. The seedling tree is in our kitchen garden, and has not failed to have a big crop of fruit ever since it was a three-year-old; we suppose it is now between twenty and twenty-five years old. The fruit is not nearly so large this season, neither is it so clean and pretty as it generally comes." This is a large, conical Apple of a pale orange colour, and as shown at the Apple conference in 1883 was much handsomer than the specimens to hand this season.

Clerodendron paniculatum is a shrub with large, cordate, lobed, dark green leaves on long stalks, four-angled stems, and terminal loose heads of bright crimson flowers. It belongs to the same set as *C. fallax*, but it will probably prove capable of cultivation in an ordinary greenhouse, as it appears to grow in temperate parts of China, &c. A plant of it is in flower at Kew. It is about 18 inches high, well furnished with stems and branches, and is in every way a good-looking garden plant. There are some first-rate flowering greenhouse plants among these Chinese *Clerodendrons* if cultivators would only look after them.

Orchids in the Chelsea Nursery.—There are several Orchids of interest in bloom in Messrs. J. Veitch & Sons' nursery, and the rockery in the annexe to the large Cattleya house is gay with flowers. This has been tastefully planted with Ferns, intermixed with Orchids, whose racemes of flower give bold relief to the delicate fronds. *Vanda* or *Renanthera Lowi* was bearing a splendid raceme of flowers, and the several specimens in baskets of *Cœlogyne Massangeana* were in full beauty. This is a distinct Orchid, its long pendulous spikes of flowers showing a distinct colour from the ordinary kinds. The white, strongly-scented *Saccolabium Harrisoniæ*, well marked varieties of *Odontoglossum grande*, *Cattleya Bowringiana*, *Oncidium varicosum* (one of the showiest of the genus), *O. Lanceanum*, *Pleione lagenaria*, *Dendrobium formosum giganteum*, *Lælia Dayana*, *Cattleya gigas*, *Lycaste Skinneri alba*, and *Miltonia candida* were also in full bloom.

The finest Ceanothuses.—These are shrubs that compel attention from spring till severe frosts occur, but it is just now they are most beautiful, partly for the reason that there are few things of this class in bloom. In the Royal Horticultural Gardens at Chiswick, at Kew, in Messrs. J. Veitch and Sons' nursery, at Coombe Wood, these shrubs thrive vigorously. There are good and bad kinds, and the most useful is *Gloire de Versailles*. It bears its blue flowers in free graceful clusters, unlike some kinds, which produce small close heads. *Sceptre d'Azur* is the same as *Gloire de Versailles*. *Azureus albidus* is of a weak colour, a kind of pinky white, but it is free; *grandiflora* has rich blue flowers, also *Gloire de Vaise*, a variety that is very seldom seen, certainly not so much as it deserves. *Marie Simon* is of a pretty pink colour. *Ceanothuses* make excellent plants for walls, as the foliage is rich and abundant, but distinct beds may also be made as we saw at Chiswick. Unless the winter is severe they will stand unharmed against walls if protected by mats, but otherwise it is necessary to lift them, as in the case of *Fuchsias*.

Those plants in beds at Chiswick are about nine years old, and are lifted each autumn, potted up, and kept in a cool house until spring, when they are again planted out.

Leucojum autumnale.—What a graceful little plant this is when doing well and flowering freely. This year our clumps have been unusually fine, and though somewhat delicate and requiring a little care, we have never had any mishap with it in the open air. The soil must be well drained, sandy, leafy soil suiting it best, and we have always taken care to choose a warm sheltered spot to plant it in. The flowers are medium-sized, white, faintly diffused with rose, becoming more intense towards the base of the segments. They are borne from three to eight on a longish stalk and droop.—K.

Primulina tabacum.—We noticed the other day in the herbaceous grounds at Kew this curious new plant from China. It is a new genus, and from its striking resemblance to a *Primula* it has been called *Primulina*, and indeed it is difficult without examination to believe it to be anything else. It, however, belongs to the Gesneraceæ, having the two arched stamens. Dr. Henry, who collected it in Kwangtung, says that when touched it emits a strong odour of tobacco, and is called by the natives *Shek-in*, that is, rock tobacco. The flowers are numerous, though small, rich violet, with white throat, the leaves roundish, cordate, with lobed margins. It is said to be very difficult to cultivate, and, from the appearance of the plant at Kew, we should say it is a miffy subject.

Crocus speciosus.—None of the autumn *Crocuses* now in flower equal, in our opinion, the beautiful *C. speciosus*, an old, well-known species, and one that has so far held its ground against all comers. It is one of the earliest of the autumnal kinds, usually beginning to flower about the second week in September and continuing into October. For a striking, effective, distinct-flowered, and perfectly hardy *Crocus* this has certainly few equals in the whole genus. Besides being perfectly hardy in almost any district, it is one of the most prolific, the small corms being produced annually by the score round a small tuft. These flower the second and third years as vigorously as the older ones. It is one of the most widely distributed, being found in Northern Persia, Georgia, Caucasus, Crimea, Hungary.

Notes from Almondsbury.—*Gladiolus dracœcephalus* should become very popular. I know no variety that increases so rapidly; a stock of three, collected in the Transvaal, has increased marvellously here. I have over 100, and have given away many. I only divide them once in three or four years, as they are quite hardy. There are few months in the year in which I do not have *Gladioli* in bloom. Labels are my trouble. The Kew label, Aspinall's black enamel on white paint, does not always answer. The whole material comes off sometimes. Is it necessary to put on two coats of white paint? Wooden labels painted white and written on when wet with a pencil are good, but who cares to carry about labels covered with wet paint? Zinc labels written on with an acid are lasting, but then the trouble of carrying a pot of ink round the garden is great. What we want is some kind of preparation to be painted on a zinc label which can easily be scratched with a nail or sharp point and is indestructible. What chemist will give us this? Then, perhaps, we shall get a cheap, legible, indestructible label, and I for one shall be a happy man. I shall be glad to give away packets of seed of *Iris Milesi*, which bloomed so well here in the open border, though only planted in March. It is quickly raised from seed.—C. O. MILES.

Stenoglottis fimbriata.—Of the comparatively few South African Orchids which find a place in English collections this is one of the most attractive. The foliage alone is sufficiently ornamental to warrant its cultivation. The leaves are arranged in a rosette and spread horizontally near the ground. In the typical form they are strap-shaped, 3 inches to 4 inches long, and of a deep green prettily blotched with black-purple. From the centre rises the erect spike, generally about 6 inches

high, the upper part of which is crowded with small, pale rose-purple flowers. A considerable variation, however, occurs in this species. A distinct and unusually vigorous form is now in flower at Kew. The leaves are three times the usual size, but almost unspotted, whilst the flower-spike is 18 inches high, the upper half bearing scores of flowers. The specific name refers to the lip which is irregularly cut into narrow segments. In its native condition this Orchid is usually found growing on rocks on the surface of which a shallow layer of vegetable mould has accumulated. Under cultivation it thrives when potted in an open compost of sandy loam and leaf soil, keeping it fairly moist at all times. Provided a vigorous growth be obtained it never fails to flower.

Oxalis Bowieana is one of the most beautiful of all Wood Sorrels. Few people grow the forms of *Oxalis* as greenhouse plants, because probably they do not know that many of them bear large, bright-coloured flowers in great abundance. If anyone is looking out for a good free-flowering plant less than a foot high, with bright green leaves and graceful stalks of rose-red golden-eyed flowers the size of a florin, he had better go to Kew and see this *Oxalis*, which is in full beauty in the succulent house there. It is planted on the edge of a brick bed 3 feet high, and its flowers droop over most elegantly.

Dahlia coccinea.—As a casual observer, I have been much struck with the want of brilliancy, so far as scarlet is concerned, at any rate in the numerous single *Dahlias* one sees at shows, and which you are told are all advances on the old ones. I carefully examined all those shown at the last meeting at the Drill Hall, and in not a solitary instance did I find anything to approach the old *Dahlia coccinea* in brilliancy of colouring. This is an old thing that one can only find now in botanic gardens, but with a little cultivation, to increase the size and breadth of the rays, it would have few equals amongst the newer kinds to-day. I may say I do not favour those striped, white, fawn, and other marked kinds that appear to be so much sought after. A bed of the old *D. coccinea* has this year been one of the most effective I have seen.—W.

Michaelmas Daisies.—These are the most beautiful of autumn flowers, though absent from many good gardens. Those who know very little of hardy flowers tell us their season is over when July is out. They know nothing of the many charming *Michaelmas Daisies*, the best of which out of a family of over 200 kinds are *Amellus*, its variety *bessarabicus*, *linearifolius*, a lovely early flowering variety of a soft blue colour; *Chapmani*, *horizontalis*, *elegans*, *versicolor*, *Townsendi*, *Shorti*, *turbinellus*, *lævis*, *Novæ-Angliæ*, *acris*, the dwarf *dumosus*, and *longifolius formosus*. These are amongst the finest, and in gardens of sufficient size all may be planted without fear of forming monotonous effects. It is thought the only place for such flowers is the herbaceous border. Here the perennial *Starworts* of the wildest type were planted, running here and here and soon covering the ground. But these better kinds are of less vigorous growth and send out graceful sprays of flowers that may be used when cut with charming results. A good way to plant *Starworts* is amongst *Rhododendrons* and shrubs. In early September *linearifolius* and *acris* begin to bloom, followed by the other kinds, which throw their flower-stems over the shrubs in rich profusion. It is this kind of planting that charms one with its simplicity. No special soil or position is needed for the hardy *Starworts*.

Tomato Chemin.—In the collection of *Tomatoes* grown out of doors at Chiswick is this new variety of Messrs. Vilmorin. It is very free in the open, the fruits large, very deep red, and of rich flavour. We are astonished that the committee passed over such a variety when lately exhibited at Westminster. It is as good for indoor culture as for the open ground.

Tomato Chiswick Hybrid.—This *Tomato*, which has been often noted of late in THE GARDEN, was finely shown at the conference. As grown out of doors at Chiswick, it is quite distinct in appearance and is much freer than any of the other varieties. This promises to be a useful outdoor *Tomato*. The fruit is not large, but size counts for nothing. It is quality that is wanted, which this variety has.

BEAUTIFUL LEAVES.

ABOVE all things powerful in the great laboratory of Nature we must give the place of honour to the green leaves of the meadow or forest, or the gardens of the world. Some people prefer flowers, but we may agree most cordially with Scotia's ancient matron who on being closely questioned as to her maternal preference for one of her two handsome boys, settled the matter laconically by saying "baith's best." And so were we closely tied to a preference between leaves and flowers, we should agree with the wise woman of Edina; but if still more severely cross-examined, we should then revert to first principles, and decide in favour of green or beautiful leaves. Our illustration of stove or hothouse foliage will speak for itself. As a choice bit of leafy portraiture and of wood engraving you may compare it with "Bewick's Birds," since the principles are the same, white

favour of newer and less worthy things. As well grown in small pots of rich compost, this metallic *Alocasia* is one of the plants to grow in a tiny stove. The pale Fern above, with its great pinnate fronds, is quite as distinct in its way as is the Aroid. It is *Polypodium aureum*, its leafy surface of a pleasing grey-green or glaucous tint, its specific name being derived from the golden sori which display themselves beneath its ample fronds. In the top left hand corner is a *Croton* of the *C. pictum* type, and beneath a few great fronds of an *Alsophila* or *Aspidium*, or can it be *Davallia Mooreana*? Whatever it is it is well placed and beautiful in the group to which it belongs. What the flower is below is not so very easy to decide. It may be a *Maranta*, but one leans towards its being the brilliant *Scutellaria Mocciniana*, or perhaps an *Aphelandra* of the *Leopoldi* type. Whatever it may have been, it no doubt added

one of the chief features in the greenhouse. The flowers, in large drooping racemes some 18 inches in length, are bright scarlet, with a tube about 2 inches long.

FRUIT GARDEN.

INDIAN MANGOES.

THE time has come when these fine fruits will be obtainable in England. Ships now go from Bombay to Plymouth in twenty-two days, and ice and careful packing go a long way now-a-days. Mangoes will keep often twenty-two days in the cool. The Mangoes most valuable when they can be obtained fresh are the Bombays, Afooz, or Alphonzo. I have now on my table a dish of these fruits in prime condition. I know no fruit that has such a satisfying charm about it as a really good Mango. You can make a meal off a Mango. The natives in some parts live on them for at least one month in the year. The bark of the tree is an astringent, the leaves are given to cattle to eat, and the urine collected, and a fine yellow dye is produced. Cakes are made from the pounded seeds, and many sorts of preserves from the fruit.

Since I came to India I have collected nearly 500 kinds of Mangoes. I was once invited by an old Mahometan gentleman of high family, Mr. Shadigally Khan, of Durbhungah, to visit his Mango plantations. I paid him a visit first at his house, and he told me he had ordered a few Mangoes to be gathered for me. On riding out to his plantations we came to a long thatched house or shed in which were laid in rows on the mud floor about 100 sorts of Mangoes, consisting of all the finest and ripest fruit. This same Mahometan gentleman has over 500 sorts of Mangoes growing on his lands, all or nearly all I have had fruit of, which has greatly assisted me in collecting and naming them. From these I have selected a few of the best, and the following list will give you some idea of what sort of fruit they are. The names I have adopted are those by which they are best known; in only a few instances have I given new names, and these to totally unknown fruits.

Mangoes are only to be distinguished by their shapes, viz., those where the stalk is always raised above the top of the fruit, and the others in which the stalk is depressed. These are the only two distinctions. The "nose" of the Mango, or, as the natives call it, the "nak," is the point to which the pistil adhered to when the plant was in flower, and from which the seed always germinates. Of course there are hundreds of shapes of Mangoes. I have seen notes on Mangoes in this country by several men who have written a lot on this fruit about leaf distinction. It is perfectly impossible to tell a Mango from its leaves any more than an Apple or Pear; one may be able to do it in a few instances, but always under doubt.

Mr. Chatterjee, the nurseryman, of 78, Narcondanga Main Road, Calcutta, has many of these fine sorts of Mangoes, having taken a great interest in them. I simply give his name if anyone wishes to go in for Mango growing, particularly in the Tropics, where your paper is often seen.

AFOOZ (syn., Alphonzo Bombay).—Weight 6 oz. to 8 oz. Colour reddish orange, green. This is considered to be the finest of all the Bombay Mangoes, and is equal to many of the best fruits I have tasted. In flavour it resembles the *Gouraya* Malda, but in shape is quite different, being a one-sided, heart-shaped Mango. This sort comes from Madras Presidency, and is really not a Bombay fruit at all. It should be in every plantation. The fruit should be gathered when nearly ripe and kept on a shelf for a few days. This remark applies to all



Stove foliage. Engraved for THE GARDEN from a photograph sent by Mr. Tabor, North Street, Ashford.

on black, and not black on white, being the true and natural function of the wood engraver's art. In the woodcuts of to-day we look for portraiture, and in this instance we find it readily, and without any difficulty recognise several old friends. Bottom corner to left *Anthurium crystallinum*, to right of which is *Lomaria gibba*, one of our handsomest and most distinct of sub-arboreal stove Ferns. It really might be *Brainea insignis* or *Cycas revoluta* in a small state, but as merely judging from the engraving I should at once say it is the *Lomaria*. Above the Fern, to the right, we have the massive shield-like leafage of *Alocasia metallica*, one of the most distinct of all the species of a remarkable group. Some of us remember the sensation caused in gardening circles and at the floral exhibitions when its metallic lusted leaves were first seen. Now-a-days it is but too often totally neglected in

to the green, grey, and bronzy tints above and around it, and whenever we see a beautiful group of this kind so varied in form and aspect we instinctively long for the day when the exquisite tints and colours as seen reversed in the camera shall be possible of reproduction by the negative. Then, and then only, will the triumph of the great Daguerre and the other inventors of photography be complete. As it is, no one can look upon the exquisite results now obtained by the camera and the graver without much inward satisfaction and content, especially as applied to the illustration of our garden vegetation and its friends and foes.

Dublin.

F. W. BURBIDGE.

Fuchsia dependens.—It would be difficult to overrate the value of this lovely *Fuchsia* for climbing up the roof of a greenhouse. It is just now in perfection at Kew, where it is used for this purpose, and it is certainly

Mangoes, as they are seldom good if eaten ripe from the tree or when freshly gathered. Afooz is a man's name; Alphonzo the Portuguese corruption. The tree is rather sickly on this side of India.

KUA BOGH.—A Tirhoot Mango; weight 4 ozs. to 5 ozs. Colour greenish yellow, sometimes orange on one side. It has a fine aroma and good flavour. It is of the same shape as Afooz. The skin is thin and hairy; flesh reddish in colour. This is evidently a seedling variety of Afooz, which I think it equals, except in size. It is our earliest Mango, ripening here on or about the 24th of May. It is also a first-rate cropper, and deserves a place in all plantations. The name signifies crow's food.

DURBHUNGAH BOMBAY.—Weight about 8 ozs. Colour dark green, sometimes whitish or yellow or reddish on the top side. The stalk is generally raised and on one side of the fruit. Flesh is reddish, not stringy, and the stone hard. This is the bazaar fruit of this part of the country, and thousands are sent away to all parts of India from Durbhungah, a great trade having sprung up since the opening of the railway. It is a very sweet Mango, and one everybody likes. There is something very pleasant about its sweetness, although it has really not much flavour compared with other kinds. I have often given ladies this fruit who said they did not care for Mangoes, and they have expressed their opinion that they thought they liked that sort of Mango, and never tasted anything like it before.

SAFADA, OR WHITE BOMBAY.—This is a variety of Durbhungah, and if anything better in flavour and a trifle larger; it ripens a little later, hence it is a valuable variety. It is evidently very rare, as I have only received it from a few places. The shape is the same as that of Durbhungah, but the skin is always of a whitish colour, and not easily mistaken. It is a very desirable sort.

MAHADEB PERSHAD'S BOMBAY.—One of the finest fruits I have ever tasted. A perfect shape, a lovely green, often tinged with whitish orange on the top; stone hard. It weighs 12 ozs. to 14 ozs., and has reddish flesh. The flavour is very fine, and slightly, but agreeably acid. A gentleman said it was the finest Mango he had eaten on this side of India. I first received this from a native friend in Mozufferpur, Baboo Mahadeb Pershad, an admirer of Mangoes. I have since met with the fruits in the bazaar, and the vendors asked absurd prices for them. Knowing its good qualities, I have named it after the original sender.

GOPAL BOGH.—A Maldah sort, and much esteemed by lovers of Mangoes. This is the celebrated Mango of Maldah, the one that is said to be equal to the Bombay sorts, and I quite agree with the report that it is as good as the best Bombay. It is a dirty green-looking fruit, weighing only 6 ozs. (covered with yellowish specks); the stone is hard, roundish, and deeply ribbed. I received fruit and plants, which have since borne fruit, from Mr. Reilly, of Maldah. We have also several large trees. It is evidently a shy bearer here. It is a very desirable sort to have in a plantation. The season is June. The name means the food of the god Gopal.

KAKUREA (syn., Kellua or Cucumber or Plantain, resembling the Cucumber or the vegetable Plantain).—This is a most distinct fruit and most appropriately named, for it is often almost like the *Desi*, i.e., native Cucumber. The fruit weighs from 10 ozs. to 1 lb.; it is generally yellowish when ripe, and measures as much as 7 inches or 8 inches long by 2½ inches wide. The flavour resembles that of Vanilla—most luscious and refreshing. This Mango should never be cut with a knife; it is quite different when skinned and eaten. This is a plentiful variety in the bazaar here, and is sold cheap often under the name of Langeria and Kellua.

KURELLUA, like the fruit of the Kurela, a bitter vegetable used in curries, has the skin covered with warts or lumps. This Mango is only a distinct variety of Kakurea, and I have only met with one tree, the fruit of which was quite as warty as that of the Kurela. The flavour is superior to that of Kakurea. It is a very curious variety.

BANKA, meaning twisted.—This looks like a fruit that had been twisted half round. The native theory is that it is so named from being like the head of a native fop, half turned round. The fruit is rather kidney shaped, sometimes weighing 1 lb.; the stalk is much raised and thick, the flesh very red, strong flavoured and rather fibrous. It is worth growing as a curious fruit, and it is very rare; I only know of one tree.

AMEER-COLA.—This is a Madras Mango. I had fruits from young trees received from the Agri-Horticultural Society of Madras. The fruit weighs about 10 ozs.; the nak, or point to which the pistil adheres, is very pointed and prominent. The skin is covered over with small lumps like the skin of an orange, and can only be mistaken for a kind we have in this district called Kemukht, an extremely fine Mango. As my fruits were blown off unripe, I could not form a fair opinion, but as they were they were fine.

DIL PUSUND, or Heart's Delight.—This is a large, kidney-shaped fruit, weighing from 12 ozs. to 2 lbs. The skin is very smooth and clean and often turns a bright yellow. It is ripe in June in this part, and is a very fine Mango. I received this from the Agri-Horticultural Society, Madras, with the following kinds: Peter, Offic Pusund, Mayagon, all of which are said to be fine fruits, but as I have not seen them, I cannot express an opinion. The plants I have will bear soon. Dil Pusund is very much like a sort we have called Chupki Malda, or localised Chupra Malda; it really has nothing to do with Chupra, but means flattened or Chupki. A desirable sort and a handsome fruit.

CHUPKI MALDA.—Season, June and July, like Dil Pusund.

DURMA OR DERRINIA really means "without price," and if you get a good one it is perfectly true. One gentleman to whom I sent some, and who was always praising Bombay fruit, said, "It is the finest Mango I have ever eaten;" but there are many inferior varieties. The colour and shape resemble those of a nice red, rosy Blenheim Orange Apple. The stalk is very much depressed or sunk in the top of the fruit. The flesh is rather hard or solid; stone very small, roundish; flesh yellow or Maize-coloured; no nak nor point, or, as the natives call it, nose; where this should be there is generally a depression; weighs 8 ozs. to 1 lb., and is a very variable-shaped fruit. It is evidently a very superior variety of the Kishun Bogh, and also a rare Mango. My trees bear all red fruit; other trees I know all yellow. Season, June and July.

KISHUN BOGH (Food of the God Kishna).—One of the celebrated Tirhoot Mangoes, and much talked of. It is a very good fruit, and unless eaten just in prime condition very strong. It is a large green (sometimes yellow on top) fruit, covered over generally with black specks. It weighs 12 ozs. to 1 lb.; the stalk much depressed. A very round, regular-shaped fruit; one of our commonest Mangoes. It often hangs on the tree till the seed germinates inside; and on one occasion I saw a young plant growing out of the fruit as it hung on the tree.

LERRUA.—A fine and highly-coloured variety of Kishun Bogh, the fruit often beautifully streaked with green, yellow, and red, like some Apples in England. It is rather finer in flavour than Kishun Bogh, and one of the most beautiful Mangoes I have seen. This should be in all collections.

SHAH PUSUND (the Shah's Delight, generally known as Malda in the north-west of India) is so called because one of the old rulers of India had a tree somewhere near Delhi that was guarded regularly in the fruiting season by soldiers, and thought to be the only tree of that kind in existence. I have never seen samples of this fruit in the bazaar. The one I have is a very large fruit, weighing as much as 2½ lbs., very irregular in shape; also a very juicy, refreshing Mango of delicate flavour. Some people are very fond of it. I think it is a second-rate fruit comparing it with the Bombay or Madras. It is generally green or yellowish green, and ripens in June and early July.

DURGI LAL'S KELLUA.—Very like Shah Pusund, but much larger and more irregular in shape. I think it is very insipid. It is, however, much prized by some, and one sometimes gets a good-flavoured fruit when not too large; weighs sometimes 3 lbs. to 4 lbs.

GOURAYA MALDA OR SAFADA.—One of our finest Mangoes. Very thin stone (sometimes like paper and no seed inside), no fibre, thin skin, and a very fine-looking fruit. It is oval in shape, the stalk being slightly raised on the top. The true colour is whitish yellow; hence the name Safada. Oftener it is deep green and has a very smooth skin; weight about 12 ozs.; very fine flavour and very luscious. One of the common bazaar sorts. I have two fine varieties, one from Shadigally Khan, and another from Mr. Buckley, both great admirers of Mangoes. The one from Mr. Buckley I have thought sufficiently distinct to be called by another name. I have named it Buckley's Gouraya Malda. Season June and July.

SUBZ MALDA.—Another local kind, and one that would make excellent chutney, being a little acid. It is a fine large kind, weighing as much as 1½ lbs.; also a prolific bearer. It is a dirty green in colour, kidney-shaped, rather flattened. Seed is thin and no fibre; flesh rather tough, not strong, but like jelly with too much isinglass in it. A very distinct kind. Season, June, July.

KEMUKHT (meaning a kind of leather covered with little lumps).—One of our rarest Mangoes, and also our finest. It is a round fruit; the "nak" or nose is sometimes elongated in a most peculiar way, hanging down from the fruit a quarter of an inch in exceptional cases. I have only received this from Shadigally Khan, whose collection of Mangoes is one of the rarest in India, and perhaps one of the oldest. The flesh is hard, granular, but melting. The fruit is orange when fully ripe, with a fine aroma.

KUSH TARASH ("clean cutting").—This is a beautiful and rare Mango. The fruit is rich orange, and sometimes red. It is much esteemed by some. Only received from one native gentleman.

BHUPALI (coming from Bhopal State).—One of the handsomest and finest flavoured Mangoes I have seen. Some fruits bright vermilion and orange, with an aroma of vanilla; the flesh is hard, granular, and melts in one's mouth; in fact, I think this the finest of all the Mangoes. It weighs about 6 ozs., and is a long oval-shaped fruit, with a rather prominent "nak." I have received this from several places in this district, and also from Mozufferpur. It is evidently a rare local sort. Ripens in July.

INERUA (meaning "spontaneous").—This, I am told, was an accidental seedling. It is a magnificent fruit, weighing as much as 4 lbs., with a fine appearance, shape, and flavour. The stone is thin and the flesh solid and fibreless. It is only to be found in one plantation, and is a shy bearer. I had one fruit last season over 3 lbs. It was of excellent quality. Season, July.

NURSING BOGH ("Food of the God Nursing," or, as I call it, the Blue Mango).—It weighs generally over 1 lb. It is of a dark bluish green colour, very regular shape, and about the only Mango I can tell by its leaves, which sometimes measure 18 inches long. The flesh is rather acid, but agreeable and refreshing. This is one of the most distinct Mangoes. Anyone seeing it would recognise it again. Season July.

KHAJA KA BUDAYA.—A most remarkable fruit. A roundish Mango, weight about 6 ozs. I have seen sixteen fully developed fruits on one stalk. It is also of very fair flavour, but is valuable through being a late Mango and coming in between the early and late sorts. Season, late July.

MAHARAJ PUSUND.—A lovely looking Mango, of the brightest yellow or orange colour when ripe, often covered with black specks, with here and there a large black blotch that adds to its good looks. It is rather a pointed fruit. The nak is not very prominent. It has a fine aroma, resembling that of camphor. It has a delicate flavour, weighs about 6 ozs., and is not very com-

mon. The unripe fruit is of a dark bluish green, and it ripens in July. A first-rate sort.

MOHIDINUGGUR KERBUZA, or the Melon of Mohidinuggur, a village in Durbhungah district.—This is a small round yellow fruit, beautiful to look at, about 6 ozs. in weight, lovely yellow, with brownish-black dots. As its name implies, it is scented like a Musk Melon. Beautiful flavour and a most distinct fruit, and very rare.

NARVI KA KERBUZA, another Melon Mango, weighs about 10 ozs., reddish-orange colour and heart-shaped; beautiful Musk aroma and very fine flavour; flesh is reddish, and I think better than that of any Bombay Afooz. Only one tree exists that I know of, and this is a seedling in one of Shadigally Khan's plantations. For shape and quality I think this as fine a Mango as any I have eaten.

DOOLA WALLA KERBUZA.—This is also a Melon Mango, very much like a very oval Kishun Bogh, which it resembles, except that it is better flavoured, I think, and ripens later. It is a perfectly oval Mango and very regular in shape; weighs about 10 ozs. or 12 ozs.

I now come to the Budaya and Kaitkee Mangoes, or the late fruiting sorts. These are very little known in India, and we possess a great variety in this district. I shall, however, only give you some of the best sorts. They are generally difficult to ripen, and I have found it necessary to protect the fruit; as many of the fruits fetch 8 annas each, they are worth saving from birds and wasps. A net should be hung under the trees, so that when the fruits ripen they will fall into the net. The fruit should be kept a day or two before eating it, and then some of the kinds equal the finest early sorts. Budaya Mangoes, again, should only be grafted on late sorts. If they are inarched or grafted on early kinds, I think their season of ripening will be brought forward into months when there are plenty of other kinds. If they are only grafted on seedlings of late or their own sorts, then the probability is their season of ripening will be extended even later than it is now. This has never been done, but I think it would improve the fruit. I have kept Budaya Mangoes hanging on the tree till October. This is long after all Mangoes are over, and the fruit was pronounced by judges to be excellent.

RHARI BUDAYA.—A local sort of which there are several very superior varieties. The ordinary Rhari is very fibrous, but a good flavoured fruit. The best varieties are the Red Rhari and the Yellow Rhari, both received from Rai Goberdenal, who has sent me many fine fruits. The ordinary sort weighs 5 ozs. or 6 ozs., the good sorts as much as 8 ozs.; slightly acid with a trifle of pine-apple flavour, very luscious, altogether good. This sort originated in the village of Rhari, in the Durbhungah district, from whence it has been distributed throughout Tirhoot. It ripens in July and August, and is the first of the Budayas.

TERHA KELLUA BUDAYA, or the one-sided Plantain Mango.—This always has the stalk on one side of the fruit. The latter weighs from 1 lb. to 1½ lbs. It is generally a dirty green, long, and kidney-shaped. When in good condition it is a fine Mango, but seldom to be obtained. A most distinct fruit.

FUZLEE BEWA (Widow Fuzlee's Mango), a description of which was published by Mr. Reilly, late of Chanchal Estate, Malda. This is a very fine Mango and a good late sort. I have had specimens 2 lbs. each. I believe they grow larger. The flavour I think is rather poor. It is not to be compared with some of the sorts mentioned hereafter in this list. It should, however, be in all Mango collections, as it is most distinct, and for market has a great reputation.

JHALHI BUNDI (Tied in a Net).—The reason it is called this, when you skin the ripe fruit it leaves fibres adhering to the flesh, and gives the flesh the appearance of being enclosed in a net (most Mangoes do this), hence the name. It is a good fruit with dark red flesh; the skin, like that of most Budayas, is of a dark green colour. This is a Malda sort. A variety of the same is

Chota Jhulli Bundi. I received fruits of this from Malda.

NUKUA LEUGERA.—Also a fine late sort with a very distinct nak, quite half an inch long on some fruits. It is distinct from all other Mangoes, of very fine flavour, and extremely rare, only one tree existing that I know of. The fruit ripens in August, and sometimes hangs till September.

DURBHUNGAH BUDAYA.—The finest of all Budayas. It weighs about 12 ozs., is a lovely orange-yellow in good samples, very flat, rather heart-shaped, thin skin, no fibre and a stone almost like paper. Flesh reddish and in flavour like that of a fine Afooz. It ripens in August. I first found this Mango in the bazaar shops. The dealers did not know the name, and I traced the fruit to a place called Sauria, some distance north from Durbhungah. It seems that the plants were brought by a fakere some years ago, and I was told on good authority that the small plantation of some twenty trees sold one season for 1200 rupees. I have only seen this Mango from this one place, and none of the native Mango experts could tell me what it was. Ripening as it does in August, and being of such excellent quality, makes it very valuable.

MOHUN BOGH.—Another late Malda sort, weighing as much as 2 lbs. It is a large, round, greenish yellow fruit, irregular in shape and with the stalk much depressed. The flavour is delicate, very juicy and refreshing. Much esteemed by some. It is a common fruit now amongst the natives, but seldom seen in the bazaar. A fine looking fruit.

MOHUR THAKOOR, or Desi Kaitkee or Jaffer Khan's Kaitkee.—One of the latest and finest of Mangoes. It is also the most irregularly-shaped fruit I know. It also varies in colour from fine brownish orange to dirty green, seldom two fruits being alike. The flesh is reddish, and the fruit often weighs 1½ lbs. I have gathered fruits on October 30 in perfect condition. This should be in all collections of Mangoes. I believe it is a local variety.

We have many more good Mangoes that are worthy of cultivation, but they are generally very rare and seldom seen, never in the bazaar. It is absolutely impossible to obtain plants. Many of the above named sorts can be obtained from different nurserymen. Mr. Chatterjee, having obtained grafts of most of them, will shortly be able to supply them, I daresay. The common sorts are always obtainable in the Durbhungah Bazaar, but the names are generally not true.

Gwalior State Gardens. C. MARIES, F.L.S.

Colouring Gros Colman Grapes.—Will you kindly tell me the best treatment I can give Gros Colman Grapes to make the berries colour well? They began to colour about a month since, but are now quite three parts green, and I am afraid they will not finish. I keep the pipes always warm now, and have done this month, and keep the borders watered. These Vines are four years old, planted inside, and the foliage is fading fast. I always keep a little air on at top, and when not too cold at the bottom also. They were started the first week in March with a little fire-heat until the weather got warm when I let the fire out, but lighted a fire in damp or cold weather, always giving plenty of air in sunny weather. The Vines were kept damped down. I always give the border a few cans of sewage at each watering. If you will please tell me how to treat Colmans to finish them well I shall be thankful. Other sorts are doing well.—T. WARE.

* * As you do not give any clue to the weight of Grapes your Gros Colman is carrying, it is impossible to form an opinion as to whether tardiness is due to overcropping or other causes. But judging from the rapid ripening of the foliage, it is reasonable to suppose the Vine has received a check. It may be from want of water earlier in the season, or it may be by a too liberal use of sewage. The foliage of this variety frequently turns rusty under powerful sun, but the roots being right and laterals abundant the Grapes generally finish well. Indeed, unlike all other Grapes, the berries of Gros Colman

frequently lay on colour up to the day on which the last leaf falls. This variety, again, requires a very long growing period, plenty of heat, and liberal ventilation, always provided the latter can be managed without subjecting the Vines to sudden depressions of temperature. This steady treatment in a full average temperature without the aid of fire-heat in a changeable season like the past you could hardly expect to secure, and it is to this, combined possibly with overcropping, that you must set down the present hitch. It is not, however, quite certain that the Grapes will not finish, as green berries side by side with black ones sometimes change in a few days, and yours, having been brought on so steadily, may come on better than you anticipate at the finish. Keep the pipes gently warm and ventilate as freely as climatic conditions will admit, allowing the temperature to range from 70° to 80° during a continuance of this favourable weather. Aim at 60° to 65° at night with air, or a little lower, in preference to hurrying the Vines, and keep the borders moistened on sunny days when the heat is most trying to your faltering foliage. A common fault in the management of this late Grape is keeping the Vines too near the glass. There should be at all times a free play of air above the foliage.—W. C.

WORK IN FRUIT HOUSES.

PINES.

FAVOURED by an exceptionally fine September, Pine plants generally have had a good time for maturing their growth and gliding into rest, which means more air and less water. As days become shorter, darker, and colder, the mean temperature must be lowered gradually, otherwise a weak, enervating growth will continue, when the fine gain of the past month will be lost. All the plants, very young stock excepted as a matter of course, will be in their winter quarters, and having their heads near the glass the brisk heat from the newly renovated beds will favour this steady reaction without exposing them to extra fire-heat. A second summer cannot be expected to continue, but so long as it does last, abundant ventilation through the early part of the day must precede equally early closing in the afternoon. Overhead syringing may be discontinued and watering reduced, but not to an extent that will produce an untimely check amongst any of the plants, as Queens, which throw up too early, are simply useless. In all cases where frigi-domo, canvas or oiled canvas can be used the pits should be covered up at night, not only to economise fuel, but also to maintain a soft equable temperature when the escape of heat and moisture is most active. These arrangements for counteracting and softening the sudden fluctuations are very important, and equally so the system of supplying atmospheric moisture and water to the roots. If new beds do not exhale sufficient vapour, it can easily be supplemented by damping available surfaces, including the floor, and keeping the evaporating pans charged with water. Then as to watering. Although slow perspiring plants like Pines never require very much, they cannot do without it; therefore from this time forward they should be carefully examined, plant by plant, once a week. Early starters generally require one or two supplies of guano water in October, when the pots may be mounded up and in many cases left dry for a couple of months. The next batch and successions will take more, but dribbling to keep away want being ruinous, there must be no question as to the dry condition of the ball when the plants may receive a good supply. Late plants swelling fruit should be kept well together in small compact pits just large enough to hold them, otherwise the extra temperature will necessitate great waste of fuel.

CHERRIES.

The past month has been rather too hot for trained trees upon trellises under fixed roofs, especially where spider earlier in the season injured the leaves. Direct syringing aggravates the evil, as the moisture, no matter how cold, induces the leafless buds to swell. Every inch of ventilation must be left on by night and day, and shading from bright sun may be resorted to; but the best of all

supplementary checks will be found in working round the balls and shortening the roots. I have often impressed the importance and advantage of growing Cherries and Plums under portable roofs, for not only can the trees be kept dormant, but, having full exposure, they are benefited by night dew, and every particle of the borders gets evenly soaked by soft refreshing rain. Artificial watering keeps the roots wet enough, but there is nothing like a copious downpour from the clouds.

Trees in pots now plunged to the rims in the open air will have had the benefit of cool nights, and, provided the foliage is still hanging, the buds will now be safe. A mass of rootlets being essential to success, water must be given in sufficient quantity to prevent an unduly dry condition of the balls. If well covered up with any old non-conducting material the demand for water will not be frequent, but when it is wanted it must penetrate right down to the crocks.

PLUMS.

The preceding remarks upon Cherries are also applicable to early and midseason Plums, which cannot be kept too cool, and most certainly no quarter must be given to insect pests. Green and black-fly sometimes crop up after or during a warm dry time, and, left unchecked, soon destroy every vestige of young leaf. A good washing with the hose produces a wholesome check, but soapsuds through the syringe not only kills, but renders the shoots distasteful to latent broods. Where a house is devoted to Golden Drop, the king of dessert Plums, the fruit will now be in perfection and worthy of the greatest care. The plague of wasps and flies has been almost beyond endurance, and having so little outside to devour, nothing short of a complete covering of hexagon netting has kept these voracious enemies out of the house. A free circulation of dry air being imperative, the ventilators and doors have been kept constantly open of late, and being so extremely thin, strong, and light, the Nottingham netting still stands unrivalled for the protection of choice fruit. As the Plums improve in quality and value after they are ripe, the balls of the trees should be kept moderately moist and well covered to prevent drying out.

VINERIES.

Early Vines may now be pruned and cleansed and slung from the wires, where they may remain until properly started and ready for tying in position. If nothing worse than red spider has prevailed, double washing with strong soap water or a solution of Gishurst, 6 ozs. to the gallon, should suffice, especially if the Vines be young and not overburdened with loose bark and old spurs. Where the latter prevail, the old bark may be carefully removed, and after paring down the dead wood, the smallest holes and cracks may be stopped with pure Gishurst direct from the box. This by degrees will penetrate and reach the most intricate parts of their stronghold, when, provided washing is thoroughly performed, there should be no necessity for the barbarous practice of divesting the rods of every bit of sound old bark. Bug, far too prevalent, is a more formidable foe, and must be dealt with accordingly. In this case, every bit of loose bark must be removed prior to scrubbing and stopping, when the whole of the canes, but sparing the young buds, must be painted with the tar mixture. Half a pint of tar worked into a peck of dry, stiff loam and reduced by boiling water to the consistency of cream makes a strong paint, but being dangerous, half that quantity of tar should be used by the inexperienced. Every part of the house, including the woodwork and walls, also should be scrubbed, painted, and lime-washed, and last, but not least important, all loose mulching and soil, especially near the stems, must be removed, burned, and replaced with new compost. Cleansing the Vines themselves being less difficult than cleaning old structures, every crack and crevice in the joinery and walls must be closely watched throughout the following spring. All outside borders that were cleared quite down to the solid staple and top-dressed with fresh loam and bone-dust may be left freely exposed to the elements until the end of October, when a thin covering of fresh stable litter

will prevent the new compost from being lifted by frost.

Pot Vines intended for starting in November may now be shortened back to their proper length, well washed, and placed in position where they can be kept quite cool and sheltered from heavy rain. All loose surfacing must be removed, and when the balls have been made properly moist, they may be re-dressed with good turfy loam enriched with twelve per cent. of bone-dust.

Succession vineries in which the foliage is changing from the deep green to the mottled tints, indicative of ripening, will be the better for another thorough washing with the hose, if only to remove any traces of spider, which had such a jubilant time early in September. The inside borders, too, will take another soaking of ordinary water from the tanks or, better still, soft water from the clouds where the roof-lights are movable. The inside borders of summer vineries frequently become a shade too dry in the autumn, especially when long periods of drought prevail, and having been cleared of the crop and thrown open, are apt to be overlooked. Indeed, many people think extreme drought is favourable to the ripening of the wood not only of Vines, but of fruit trees generally, and so it is, provided it is warm drought, and the roots have the run of a moist medium capable of supporting the gradually declining foliage. But when roots and leaves feel the want of water, and the soft oily feel of the latter, a true index of all being right below, is substituted by a sharp harsh texture and rapid fall, conditions are greatly in favour of imperfect shows the following season. Then, of course, comes a time when warmth and moisture push properly formed and matured buds too forward; but so long as the leaves retain vitality and the house is flooded with fresh air, no one need be afraid of giving inside roots liberal supplies of water.

Late Grapes.—Alicantes intended for use after the Hamburgs are over should now be quite ripe, but another month should pass before they are in the best condition for eating. There prevails an opinion that Alicantes do not require a high temperature—neither do they—to colour them; but all Grapes should hang for some time after they are black, and this, like Lady Downe's, richly repays being kept in a warm dry house until the Vines are nearly leafless. Lady Downe's, unfortunately almost beaten out of the field by her coarse inferior rival, Gros Colman, requires a long season, and those who still appreciate high quality give it Muscat treatment. The weather lately has been highly favourable to this treatment, but firing must not be relaxed until the foliage, the true test of maturity, shows signs of changing. Being a strong and late grower, autumn laterals in this house will still be persistent and abundant, but the time has now arrived for shortening back to an even canopy through which air can circulate freely. The borders, too, must be examined, for although feeding is over, the fact that the Grapes have three months to hang must not be overlooked by those who would have the berries fresh and plump when the time arrives for cutting at Christmas. Tepid water at a temperature of 80°, in quantity sufficient to make the whole of the soil moist, should now be given; and then to prevent damp rising into the house the whole border should be well mulched with some dry non-conducting material.

Muscats, now fairly ripe and well coloured, may be let down by degrees to a lower temperature, a reduction in the supply of atmospheric moisture being in proportion. Being so subject to damping, the house may be kept quite dry and temperate when the external atmosphere is moist and heavy, whilst the use of water on the brightest days must be confined to the early morning. Although light and indirect glints of sun favour the colouring of Muscats, the laterals must not be too freely reduced, otherwise when quite ripe the shoulders may be disfigured by scorching. Old-fashioned, heavy-timbered houses glazed with intermediate squares never scorch; indeed, their fault lies the other way; but broad, close-lapped sheets of roofing,

many feet in length, attract heat to an extent which no delicate Grape can withstand; hence the necessity for very light shading where the foliage is thin and faulty. First class white or amber winter Grapes being but poorly represented after the Muscats, I would again draw attention to Mrs. Pearson. The Muscat, of course, out-distances all other amber Grapes, but very few succeed in holding it long after Christmas, the climax of its season, whilst Mrs. Pearson runs side by side with Lady Downe's from December up to the end of April. Nervous supporters of the Muscat, a variety needing no champion, have dubbed Mrs. Pearson a Frontignan much too small in the berry, a pretty fair proof that their soil does not suit it. Like Lady Downe's, it requires plenty of time, and when well finished, the berries, which never crack, are quite equal to those of that variety in size, and although rather thick in the skin, as all keeping Grapes must be, but little inferior to those of a Muscat flavour. The Vine is a strong grower and crops profusely. Were I planting an extensive range of vineries I would devote one house to this, not as a rival, but as a successor to the Muscat. If any late Vines, having the run of outside and inside borders, require renovating, the outside borders should be taken in hand when the foliage is ripe. The inside roots cannot be interfered with until after the Grapes are cut, but December and January being the worst months in the whole year, these should stand over until the buds show signs of swelling in March or April.

WORK AMONGST HARDY FRUITS.

Any late Apples and Pears still hanging upon the trees should be carefully watched and gathered as soon as they part freely on being turned upward with the hand. The fruit-room tables unfortunately will not be overcrowded, at least in this locality; therefore in storing, each fruit simply touching its neighbour will be in the best possible position for keeping. But never within my memory have I seen so large a percentage of full-sized Apples occupied by grub, and as these cannot be expected to keep, frequent attention to the store for some time will be necessary. Another important duty this condition suggests, and that is the application of greased ligature bands to the stems of the trees. Reports from those who tried this method of intercepting the female moths vary, some praising, others condemning the practice as useless. Those who started early last autumn and caught thousands of moths upon the greased bands were most likely too late, but then the method was quite new and the habits of the insects being so imperfectly understood, one may reasonably hope that those who have but partially succeeded will be able to give a better report next year. In plantations of clean smooth-barked trees minus Moss and Lichen, the eggs must be deposited in the ground, when timely greasing should ensure a clean bill of health. Upon very old trees so plentiful in sleepy hollow orchards, the accumulations of Moss and dirt are so thick and inviting to the parents, that it is just questionable whether they will not baffle the trappers by depositing their eggs above the fatal line, when, as a matter of course, the plague will go on until some climatic change destroys every vestige of these pests in orchards, be they young or old. I do not profess to know much about these destroyers' domestic arrangements, but one thing I must reassert, and that is, the wasteful imprudence of leaving a thick coating of cold wet filth upon the trunks and branches when brine or lime-water can so easily be applied.

PLANTING.—Unless young trees have been grown for a year at least upon the premises, it is somewhat early to commence lifting; preparations, nevertheless, should be pushed forward especially during the prevalence of dry weather. Upon light sandy loams, perhaps not the best for Apples, planting may be conducted within a few hours after rain, but on the heavy red Herefordshire soil almost approaching marl and proverbial for the growth of the finest Blenheims, such a course would be suicidal, as no amount of tilth would restore it to fertility for a year at least. Conjointly with preparations

would-be planters should pay timely visits to the nurseries, not only to make selections, but also to note the character and quality of the new and popular varieties so splendidly exhibited by the trade, some of them not so well known as they should be. I do not advocate the removal of first-rate old sorts which do well in the neighbourhood, neither do I approve of filling a garden with endless variety; same time if one type of any particular family is better than the original, the improved form should be encouraged and cultivated. Reduction, indeed, has long been the motto of THE GARDEN, and it is not a little gratifying to gather from Mr. Barron's report, just published, that out of some 1500 varieties staged at the Chiswick Conference last year a very small percentage indeed were popular.

Bush planting and root-lifting may now be pushed on with all possible speed, and renovating where trees are too weak may be brought to a close. Grossness, however, owing to the lightness of the crops, is the general complaint, but in some sections of the fruit garden, notably amongst Gooseberries, Currants, Raspberries, and Strawberries, the crops were unprecedentedly heavy; consequently the trees will be the better for liberal supplies of light rich top-dressing.

W. C.

KITCHEN GARDEN.

ENDIVE.

WELL-GROWN and thoroughly blanched Endive is only slightly inferior to Lettuce in point of crispness and flavour, and as far as appearance is concerned—a very important consideration, too—it surpasses it any time after the end of September. It is doubtful, however, if the value of a good supply of Endive is fully appreciated by either amateur gardeners or the proprietors of comparatively small gardens, or otherwise very much more of it would be grown. Those who have to cater for the wants of larger establishments, where perhaps a salad must be forthcoming daily throughout the year, well know how important it is that abundance of Endive should be grown and taken good care of, and it is to be hoped the time will come when it will be more extensively grown, or as generally as Lettuces now are. To a certain extent, the taste for Endive has to be acquired,



Moss Curled Endive (one-eighth natural size).

especially when it is served whole and without any dressing; but the slightly bitter taste accompanying it is pleasing to many palates, my own included, and hereabouts it is never wasted. It is rather late in the season to advise upon the cultural details to be followed, more especially as regards raising and planting, but the equally important work of preserving the crops from frosts and blanching the produce may be discussed with advantage. The most

valuable crops, as a rule, are those obtained from plants raised in July and the early part of August, these being the least liable to run to seed prematurely, and arriving at a serviceable size when Lettuces are less abundant. If the plants fail to grow strongly after being put out, it is most probably owing to the ground being either too poor or too cold and heavy. The finest Endive is the most easily produced on freely-manured light soils, there being no better sites than those cleared of early Potatoes, and extra fine produce can be obtained between the rows of newly-planted Asparagus. Unfortunately, the more strongly they are grown the more liable are the plants to be spoiled by frosts. Quite small plants, or say any obtained by sow-



Broad-leaved Winter Endive (one-eighth natural size).

ing seed in August or the early part of September, if put out rather thickly on a warm raised border, will usually withstand very severe frosts, and if covered with frames when these can be spared, the growth through the winter will go on steadily, a serviceable lot of hearts being available in February, March, and April for mixing with the earliest Lettuce.

Many succeed in growing a capital lot of Endive only to spoil the greater portion either by blanching too much at one time, or else because they have neglected to store the bulk of the crop where it is out of the reach of severe frosts. It should be remembered that the blanching process effectually stops the growth of the plants, and should not, therefore, be commenced too soon; also that Endive keeps badly after it is blanched, thus rendering it imperative that the process be piecemeal rather than wholesale. When it is known in addition how quickly the plants decay after the tips of the leaves have been crippled by frosts and other causes, it will be more fully realised how much care and judgment are needed to preserve and prepare the crops for use during the late autumn and winter months. In some seasons the plants left in the open escape injury as late as the end of November, but I hold that the bulk of the crop should be stored or attended to in some way much earlier, or say by the middle of October, and the most forward plants either protected where they are, or transplanted to frames by the end of September. It is in the low-lying districts where the greatest difficulty is experienced in preserving Endive, a very moderate frost damaging the plants sometimes in September. The safest course in all such localities is to grow the Endive in beds as much as possible, these at the present time being enclosed by frames and covered by lights or mats whenever frosts are imminent.

Moss Curled, a variety of compact growth, is sometimes grown for the earliest supplies,

but it is very tender, and ought not to be much relied upon. Green Curled, of which there are two or more forms, all more or less distinct and serviceable, can be had fit for use quite as soon as Endive is required in most establishments. The French selection, Louvier's fine lacinated, is of sturdy growth, and promises to be of superior quality, but I have not yet had an opportunity of testing its keeping qualities. Picpus Fine Curled is a reliable form of Green Curled, and is planted extensively here. For use when Lettuce is not available, and also for cooking purposes, there is none to surpass a good stock of the Batavian Broad-leaved, this also varying considerably. What is known as the Improved Form, when it can be obtained true, is undoubtedly the best, but not unfrequently quite another thing is supplied by seedsmen. The Lettuce-leaved Batavian (Scarole blonde) is a favourite variety in France, and this we are trying for the first time. It is of rather ragged growth, and in all probability will not prove so hardy and useful as the Batavian Broad-leaved Improved. All will be treated alike as regards protection and blanching, nothing being left to



White Batavian Endive (one-eighth natural size).

chance. Early in October a considerable number of frames, span-roofed and otherwise, will be at liberty for protecting salading. Some will be placed directly over the Endive where grown, and completely filled if need be by transplanting the requisite number from other quarters. Others will be set on a dry warm border, and eventually closely filled with both Green Curled and Broad-leaved forms, these being fully grown and previously tied up to facilitate the process of moving them with a good ball of soil about the roots. This will not wholly exhaust the supplies of large or moderately large plants, and several hundreds more will be transplanted to empty vineries and Peach houses, these being disposed only moderately thickly in fresh soil on the surface of the border. Had we no such conveniences, sheds with open fronts, or any other moderately light and dry sheds would be largely utilised for storing Endive. When lifted carefully and before frosts have injured the foliage, Endive will keep surprisingly well in sheds, and where space is limited it may be stored in conical heaps surrounded by dry sand, the points of the leaves being brought up well together so as to protect the hearts facing outwards. The best Endive, and for a greater

length of time, can, however, be had by keeping the plants in a healthy growing state in frames or the borders of cool fruit houses, blanching these as they are required for use.

Blanching, as before pointed out, should not be commenced till the plants are nearly or quite fully grown, from thirty to fifty plants, according to circumstances, being prepared at weekly intervals. As long as the plants can safely be left in the open, the blanching can be most simply effected by tying the outer leaves well up together, this excluding the light from the hearts; but if they are enclosed singly in 6-inch or larger pots inverted over them and the holes stopped, the process will be more rapid, and protection will also be afforded. The earliest Endive may be quickly blanched by having either slates, tiles, or thin boards laid on them, and fresh hay is often used for a similar purpose. The most perfect Endive can, in my opinion, be obtained by placing strong plants in a Mushroom house or a warm dark cellar in batches. Here they blanch quickly and beautifully, and are more crisp and sweet than is the case when otherwise prepared for use. We always bed the plants, wherever stored under glass, in fairly good moist soil, and keep this moistened as much as possible without resorting to overhead watering. Dryness at the roots causes the leaves to become tough, and also induces premature flowering.

W. IGGULDEN.

NE PLUS ULTRA RUNNER BEAN.

In a collection of six, nine, or twelve dishes of vegetables, one of Scarlet Runner Beans, when in season, the pods straight, long, fresh, and equal in size is always a good point. I think that until Mr. Neal gave us, after over twenty years' persistent selection, his fine Ne Plus Ultra Runner Bean, we had no thoroughly good type for exhibition. I had previously seen fine pods of the Champion Scarlet Runner and other selections, but they lacked evenness. They were more or less curved in shape, and as a dish of vegetables, rarely equalled others in point of quality. The fact that pretty well every exhibitor of vegetables grows the Ne Plus Ultra for exhibition purposes is one of the best testimonies to its value on the exhibition table. When well grown it is not difficult to have this Bean 10 inches and 12 inches in length, pretty equal in width and girth all the way along, straight, and thoroughly handsome. When at Banbury a short time ago I called upon Mr. Coupland, gardener to Captain Benyon, Nethrop House, to see some lines of Ne Plus Ultra Runner Beans he was growing. When I state that Mr. Coupland was placed second in the recent competition at Banbury with dishes of this Bean for the special prizes offered by Mr. H. Deverill, it will be understood he is a successful cultivator. Mr. Coupland had two remarkable lines of this Bean in his kitchen garden raised from seeds sown in the open ground in May. It would seem that Mr. Coupland and other growers of this Bean for exhibition sometimes sow in pots and then transfer their plants to the open ground as soon as it can be done with safety, or they sow in the open. I need scarcely state the soil is previously deeply trenched and well manured. The Beans are then sown a foot apart, and when they have sticks placed to them, each plant sends up three shoots, one to each stake. The plants are kept well earthed up and watered when required. In this way the plants develop with surprising vigour, and they blossom and fruit with amazing freedom. I counted some clusters of Beans composed of from eleven to fourteen pods, with others still setting at the point of the inflorescence. And the stock is so good and true—the Beans so even in character, having been so rigidly selected by Mr. Neal—that they hang down long and straight, and have a very handsome appearance. I think this variety is one that will pay well for market pur-

poses, but it should be well grown. It might be said, that after all it matters little of what size and shape a pod of Scarlet Runner may be if it be only fresh and crisp; but living as I do near a large market garden where Scarlet Runner Beans are much grown for market purposes and where they are well cultivated, I have often thought the crop a spare rather than a prolific one. Now as the Ne Plus Ultra Runner Bean is, as before stated, a remarkably prolific one, I think it might be grown with great advantage for market purposes. As an exhibition variety it certainly cannot be surpassed, if indeed equalled.

R. D.

KITCHEN GARDEN NOTES.

THE FIRST FROST.

VERY low temperatures prevailed during the early part of the week ending September 21, a considerable amount of damage having been done by frosts in low-lying gardens, especially on the morning of Tuesday, September 17. The thermometer within 18 inches of the ground registered 6° below freezing point, and this proved too severe for the more tender vegetables and flowers. In some gardens the runner Beans are badly crippled; in others, ours included, the late-sown kidney Beans and Vegetable Marrows are the worst sufferers. Fortunately, we are to a certain extent prepared for these early visitations, the bulk of the latest tender crops being grown on comparatively high ground, and these are apparently uninjured. Many of our Vegetable Marrows have rambed under standard Apple trees, and this protection has saved them. The spell of dry, hot weather has been taken advantage of hereabouts, and weeds, at one time much too plentiful, have been largely destroyed. Most probably rain will follow closely upon the hoar frosts, and this will not be before it is wanted. Water is scarcer now than at any time previous this year, yet it has been much wanted by Celery, late Peas, Califlowers, salading, and other crops. The hot sunshine has, however, been of great benefit to the garden crops, the growth in very many instances being far too sappy and immature to stand well through the winter. It has also afforded a capital opportunity for harvesting seeds generally, or such as do not often fall to our lot, and this will have an important bearing on next year's labours and successes.

KIDNEY BEANS IN POTS.

It is to be hoped that those being prepared in the open for housing when frosts were imminent were got under cover in good time, or otherwise their usefulness will probably have been seriously impaired. There are few vegetables more highly prized on the dining-table, and those with suitable houses at command ought to grow as many kidney Beans as they possibly can. Small batches are of little service, and not less than fifty 9-inch pots should be sown each time or at intervals of a fortnight to three weeks. Sowing the seed in the pots in which the plants are to produce their crops is a much simpler and better plan than raising them in small pots and shifting into larger ones. Nor is there any necessity for or wisdom in leaving space for subsequent top-dressings of rich compost, the latter rarely being taken possession of by the roots. The simplest plan is to nearly fill the pots with moderately rich loamy compost, and after about nine seeds have been sown on the surface, to cover these with 2 inches of soil. New seed always germinates most strongly, and Ne Plus Ultra is the best variety for pot culture. If wanted quickly, the pots ought at once to be placed in a Cucumber house or Pine stove, where the plants will grow rapidly, and, failing these, a forcing house where the night temperature seldom falls below 60° will answer as well, plenty of light, heat, and moisture being the conditions that suit them best. The seedlings should be thinned to about six in each pot and duly supported with Birch spray or stakes and strips of raffia. Not till the pots are well filled with roots will much water be required, liquid manure being applied with advantage when the plants have arrived at a bearing state. Those started earlier in the open air should not be introduced

into a strong heat till near the time the first gatherings are required, or not till any in frames or pits or on a warm border are nearly exhausted.

TRANSPLANTING TOMATOES.

It is not generally known that Tomato plants may be lifted from the open ground, and on the whole this is the most satisfactory method of ripening off the late clusters of fruit. This season the plants are bearing heavy crops, the later clusters being unusually well developed. When cut and hung up in heat the greater portion of them will colour and become fit for use, but the quality is only second rate; whereas if the plants are carefully lifted with a good ball of soil and roots and placed in a forcing house of some kind, the fruit will all ripen well and prove of superior quality to any that ripened in the open. It is advisable to loosen the surface and to well moisten the ground a few hours prior to lifting, and the plants can then be dug up and either placed in rather large pots or be set closely together on the front staging of a house, the roots being surrounded by good loamy soil and the plants trained near the glass. Plants treated in this manner have yielded a good supply of fruit till mid-winter, and have also produced profitable crops very early in the following year. Healthy plants growing in cool houses, and which have not ripened all the fruit set on them, might in many instances be transferred to warmer structures in succession to Melons and Cucumbers. If they are already in moderately large pots set these on a bed of soil, or soil and manure, and allow them to root through into this. Tomatoes invariably succeed best when trained near the glass, and must be given this position especially if it is desirable to set any bloom that may be formed soon on either lateral or leading growths that may be laid in. Nor will they set freely in a high temperature. What they require is an intermediate temperature ranging say from 55° by night to 65° in the daytime, with air given whenever the weather permits, freely in the daytime and in small quantities at night. The flowers when fully open should towards mid-day be touched over with a camel's-hair brush, this being one of the best aids to a good set. I must not omit pointing out how unwise it would be to introduce plants with diseased foliage into a house where clean Tomato plants are already growing, and in any case it is necessary to remove what diseased leaves there may be on the plants brought in from the open, and to at once cut off affected portions that may subsequently be found. There is no remedy for the worst forms of fungoid growths that are so destructive among Tomatoes, but the ordinary Potato disease is not so difficult to contend with. A rather dry atmosphere, a good circulation of warm air, and coating the hot-water pipes with linseed oil and sulphur are the best preventives of disease.

EXHAUSTED CABBAGE BEDS.

A showery summer has just suited the old breadths of Cabbage or those planted last autumn, and abundance of strong heads is being formed. Naturally these hungry crops have much exhausted the ground, and they would well pay for irrigation with sewage or liquid manure freely diluted with water in each case. Rains will have already in many instances softened the surface of the ground, and this will render loosening the surface with forks after the plants are cleared of dead leaves a comparatively easy matter. If drills can be formed between the rows, these can be filled with sewage water or liquid manure quickly, and a thorough soaking of the ground be the result. The effect will be surprising, the old stumps thus treated being capable of producing a valuable crop of good hearts and greens which would be available throughout the winter, frost very rarely killing vigorous Cabbage plants. The least that can be done is to stir the surface of the ground and liberally dress with some kind of nitrogenous manure, or even soot only, the rain washing these down to the roots gradually.

IRRIGATING BRUSSELS SPROUTS AND BROCCOLI.

Heavy rains left the ground in a poor, hard state, and a spell of exceptionally hot and dry weather soon assisted the crops of Brussels Sprouts, Broc-

coli, and Borecoles to rob the ground of the moisture it contained. In some cases this check was needed, the plants growing much too rankly to be either hardy or very productive. Where, however, the ground is naturally poor and shallow such a check will prove injurious unless something be done to counteract it. Where the foliage does not cover much of the ground, it is advisable, after a soaking rain has fallen or a good watering has been given, to draw up the soil to the stems, this both steadying and protecting them, and also leaving a furrow mid-way between the rows. Fill the latter with sewage water or liquid manure, which will find its way to the principal portion of the roots, a more vigorous top-growth and an improved prospect of profitable crops being the result. Late Cauliflowers and early Broccoli, should they need it, will be greatly increased in size if similarly treated. W. I.

ORCHIDS.

W. H. GOWER.

CATTLEYA HARDYANA.

THIS beautiful *Cattleya* is very little known on account of its rarity, and those who have it are too proud of possessing such a beauty to attempt to increase it for distribution. It may be described as one of the very finest of all the *Cattleya* family, and this is admitting a great deal, but when I say that this plant is supposed to be a natural hybrid between *C. gigas* and *C. Dowiana aurea*, one can be fully assured that a combination of these two gorgeous species cannot but be beautiful. This plant is now flowering in Mr. Measures' garden, and is bearing six of its very large, highly coloured, and deliciously fragrant blooms. It is a free-flowering plant, as the specimen now in bloom is the same that last season developed one spike, and I have little doubt but that the care taken by Mr. Simpkins, who has charge of these plants, to keep them dormant after the flowering season is one of the chief causes of his success in this matter. I wish to call special attention to this point in autumn-flowering *Cattleyas*, especially those of the *labiata* section. After flowering, the plants should at once be removed to a cooler atmosphere, kept nearly dry, and be subjected to a free circulation of air and the sun's influence. This will enable the growths to become well ripened, and will cause them to start strongly and vigorously next time. After this ripening the plants must be kept dormant and quiet through the winter, for unless this is done the growth must come weakly and no flowers are produced. Want of attention to this matter has, I feel persuaded, brought these plants into bad repute and caused many to relinquish their cultivation. I saw a grower of these plants and a reader of these pages a short time since point out with pride how strongly his plant of *Dowiana* was again breaking, and he was quite indignant when I told him it would end poorly and would not produce any flowers next season. Time will prove, however, which is right and which is wrong, and as I frequently look into these gardens, I must keep a look-out as to when this plant finishes its growth. All these plants should be kept cool through the winter months, that is to say, the temperature should range between 60° and 65°, and they should be kept drier than the majority of the kinds, such as *C. Trianae* and *C. Mossiae*, although I have seen this latter plant run into premature growth and ruin its flowering prospects for next season by being kept too moist during winter.

C. Hardyana first appeared in the garden of Mr. Hardy, of Timperley, in Cheshire, and for a long time was the only specimen known in Europe. Its hybrid character was naturally indicated by its appearing from amongst a batch

of *C. gigas* and *Dowiana aurea*, which are said to grow together in their native home, and by its exhibiting the characters of the two flowers in one. In growth it resembles a strong form of *C. gigas*, whilst the flowers are exactly intermediate. In the sepals and petals the colour is of a deep rosy hue, the same as that of *C. gigas*, the lip very large, profusely lobed and undulated on the edges and deeply bilobed in front, the ground colour being rich velvety crimson-magenta, as in *C. Dowiana aurea*, the front portion being plain, but in the tube and outside it is ornamented with a beautiful network of bright golden veins, and at each side of the tube is a blotch of plain golden yellow, corresponding to the eye-like blotches of *gigas*. The flowers are also very fragrant, which puts the finishing stroke upon this truly gorgeous flower; whilst its flowering in the month of September is an additional recommendation.

C. Massaiana is another plant which has cropped up out of the importations from Antioquia of *C. gigas* and *C. Dowiana aurea*, and therefore I would advise anyone who has an opportunity of looking over a consignment of these plants from that district to secure, if possible, any abnormal or slightly different plant from either of the above-named kinds, as something new may accrue from it. The plant in question is, I believe, very scarce, as I have only seen the flowers once, in a cut state in a gentleman's establishment in the neighbourhood of London. The combination of colours is the same, but in this plant the golden network on the lip is quite wanting and is confined to the throat, the whole front portion of the lip being rich velvety crimson-magenta, and at the mouth are two golden-yellow spots. It is a superb and beautiful plant. I cannot settle in my own mind which is the superior, and both flower at this dull season.

Oncidium splendidum.—A very fine form of this species was recently sent me. It is by far the largest and deepest coloured variety I have yet seen. I shall be glad to see the original plant flower. This I found recently in the Cambridge Lodge collection. It passed into the possession of Lord Lonsborough after the sale of the collection of Mr. Mendel, and from the former into that of Mr. Measures. The plant is still a small one, but as far as I can remember it is a finely coloured variety.—W. H. G.

Lælia elegans Emilie.—This is a superb variety now flowering in Mr. Tautz's garden at Studley House, Shepherd's Bush. It has somewhat the appearance of *L. Schilleriana*, but the form of the lip is that of the true elegans; the sepals and petals are pure white, as also are the side lobes of the lip, the tips being recurved and slightly marked with mauve, middle lobe large, undulated at the edges, and rich magenta-purple, this colour being continued to the base in a central band or stripe, which is very conspicuous on the white ground. It does not appear to be a very strong growing plant.—W. H. G.

Cattleya gigas Shuttleworthi.—This is a most superb form of the typical plant. It is, I imagine, the very finest variety of the species which I have ever seen, the size of the lip is so great and the colour so very intense. I am frequently taken to task for using M. Linden's name of *gigas* instead of *Warszewiczii*, which I am told is the true name. I am not sure *Warszewiczii* is the true name. A plant with a large lip was supposed to be *Warszewiczii*, and when *C. Trianae* was found in quantity it was pronounced to be *Warszewiczii*, was so called, and was so figured. When a larger-flowered kind comes to hand, we are told to throw over our old teachings, and to ignore the figures, and to know this plant as the true *Warszewiczii*. It is from no disrespect to the Polish gentleman and veteran plant collector,

whom I had the pleasure to know personally, but I think such a distinct plant as this would have been sufficiently well noted and described by him to have left no doubt about it, and, therefore, I do not like this learning and unlearning of names, and, moreover, Linden's name was the first the plant obtained under cultivation, and it is by far the easiest to use.—W. H. G.

SEEDLING HYBRID ORCHIDS AT OAKWOOD, WYLAM-ON-TYNE.

IN Vol. XXIII. of THE GARDEN, at page 135 is a note by Mr. N. C. Cookson on "Hybrid Orchids and their Culture." It is there stated that the first small collection of Orchids had been purchased by him about five years previously. Hybridising had been begun almost with the culture of the plants, as *Cypripediums* and *Calanthes* were at the flowering stage at the end of five years. The crossing of cool house *Odontoglossums* had been tried, and capsules with good seeds obtained. The seeds began to germinate, but did not even reach the stage of development of the first tiny leaf. No other cultivator has been more successful, although most hybridisers of Orchids have tried. Mr. Cookson crossed *O. crispum*, a good variety, with *Uro-Skinneri* or *gloriosum*. I have crossed *O. crispum* with *O. triumphans*, *O. Rossi majus*, *O. membranaceum*, *O. Pescatorei*, &c., and have never had any difficulty in obtaining promising seed-pods, but the seeds, though placed in good positions in the cool house, have never showed any signs of germination. I believe this is the experience of all hybridisers so far. We do not yet know the conditions necessary for the germination and development of these beautiful alpine Orchids. Mr. Cookson began his work with the production of seedling *Cypripediums*, *Calanthes*, and *Zygopetalums*. Beginners are recommended to try the crossing of *Zygopetalums* first as being the easiest, but so far as our present knowledge goes, it is not possible to obtain plants from *Zygopetalum* crosses unless the flowers are pollenised with species of the same genus. Messrs. Veitch, of Chelsea, were the first, I believe, to obtain plants from *Zygopetalum Mackayi* by crossing it with *Odontoglossums* of various species. They had capsules with good seeds, and were successful in raising plants, but every one that has yet flowered is *Zygopetalum Mackayi*, and nothing else. I saw plants in Mr. Horner's garden presumably raised from *Z. Mackayi* crossed with *Odontoglossum*, but they do not look as if the cross had taken. Mr. Cookson also has some, which will soon flower, but they are not expected to be anything but the seed-bearing parent pure and simple. This is a very singular fact in relation to Orchid hybridising, for the greatest care is taken not to allow the pollen masses of the *Zygopetalum* to become attached to the viscid matter on the flowers intended to bear seeds, and the flowers show the usual signs of impregnation having taken place soon after the *Odontoglossum* pollen has been applied. The sepals close in over the column almost or quite close at the top, and open at the lower part. Mr. Cookson believes this to be a wise provision of Nature to protect the vital part of the flower from rain. There are scores, perhaps hundreds, of *Zygopetalum* seedlings, and when I saw them some few years ago they were germinating freely amongst the pieces of broken coke under the plants, and were also pricked out in boxes as if they had been Ten-week Stocks.

Mr. Cookson is a most enthusiastic amateur, and is fortunate in his gardener, who spares no pains to bring to a successful issue the instructions of his employer. I received some useful hints from Mr. Murray, the gardener, who freely imparts of his knowledge to anxious inquirers. Hybridising the flowers consists in removing the pollen masses from the top of the column and attaching them at once to the viscid matter near the base of it. It is well known that bees when searching for honey in the flowers carry off the pollen on their heads and leave it in the next flower they settle upon if it touches the viscid matter. The flower fades soon after being pollenised, and the seed-pods rapidly swell, even if they do not contain good seeds. As

soon as the capsule opens the seeds must be sown; if a few of them are placed in vinegar, the germ can be seen with a good microscope in the form of a small black speck. Calanthes ripen their seeds in three months; indeed, plants had been obtained in eight months from the time of fertilising the flowers. Cattleyas require from twelve to sixteen months to mature their capsules, and the seeds are seldom good if they ripen under twelve months. When looking over the seedling Orchids the other day I was surprised to see Orchid seeds vegetating in what I would term unlikely positions. They are all sown on the surface of the soil in which established Orchids are grown. The seeds are merely scattered on the surface, and it was pointed out to me that in some instances the seeds are never lost sight of from the time they are sown until they vegetate, and it is very interesting indeed to watch the process of germination through a magnifying glass. As an instance of how different cultivators attain the same object by different means, I may observe that Mr. Dominy, who so successfully reared seedling Orchids when in Messrs. Veitch's employment, told me that it was best to allow the small plants to attain considerable size before removing them into the small pots in which they are first planted; whereas Mr. Murray removes his seedlings as soon as he can see the first tiny leaf. They evidently succeed remarkably well, as during the last three or four years upwards of 11,000 seedlings have been raised from hundreds of different crosses. *Cypripediums* are the most interesting subjects that have been dealt with, and nearly a hundred crosses have been made and many interesting results obtained. One of the most singular characteristics noted was found in a cross of *Cypripedium Lowianum*. About two years ago when I called there I found most of the small plants from this cross in what seemed to be an unhealthy condition, but Mr. Cookson says they are always like that at first, and most of them grow out of it. It seems to be an illustration of the survival of the fittest, as the plants are now large, quite green, and vigorous. Certain species not remarkable for vigour have produced in their offspring more vigorous growing plants than either parent. This fact has been proved in other gardens besides that at Oakwood, as witness *C. grande*, the most vigorous of all known *Cypripediums*, raised in Messrs. Veitch's nursery by crossing *C. Roezli* with the pollen of *C. caudatum*, an Orchid rather difficult to manage. *C. Veitchi* (superbiens) and *C. levigatum* crossed have produced much more vigorous plants than either.

I noted the following crosses in this genus of which good plants are approaching the flowering stage, viz., *C. levigatum* crossed with *C. Lowianum*, *C. Fairrianum* with *C. niveum*, *C. niveum* crossed with *C. Spicerianum*, the lovely *C. Fairrianum* again with *C. Stonei*, *C. hirsutissimum* with *C. niveum*, *C. Sanderianum* with *C. Spicerianum*, *C. Godefroyæ* with *C. Curtisi*, *C. Godefroyæ* again crossed with *C. ciliolare*, *C. Fairrianum* again with *C. Spicerianum*; yet another, *C. Fairrianum* with *C. Io*, the last named an Oakwood hybrid.

Dendrobiums have also been very successfully dealt with. In the illustrations given with Mr. Veitch's paper on hybrid Orchids, read at the Orchid Conference in 1885, seedling *Dendrobies* are figured at four months old; but plants have been actually pricked out here within two months of sowing the seeds. There are thousands of them mostly growing in small baskets suspended from the roof glass. Some of the most promising crosses are *D. nobile* crossed with *D. Falconeri*, *D. luteolum* crossed with *D. nobile*, and what may be expected to be a wonderful production, *D. nobile nobiliss* crossed with *D. nobile Cooksoni*, *D. aureum* crossed with *D. Wardianum*, *D. McCarthiae* crossed with *D. Dearei*, *D. Bensoniæ* crossed with *D. McCarthiæ*, and *D. albo-sanguineum* crossed with *D. nobile*.

There are also many seedling *Cattleyas*, but these do not arrive so quickly at the flowering stage. Mr. Veitch in his paper already alluded to stated that the shortest period known to him from the time of sowing the seeds until the flowering of

the plant was in the case of *Lælia triophthalma*; the seeds were sown in 1875, and the first flowers produced in 1883. The longest period was in the case of *Lælia caloglossa*, the seeds of which were sown in 1858, but the first plant did not flower until 1877. Others took periods that might be said to average from ten to twelve years. Mr. Cookson has plants of *Cattleya Mendeli* crossed with *Lælia purpurata*, *Lælia præstans* crossed with *C. Dowiana*, *C. Trianæ* crossed with *L. harpophylla* and the reverse, *C. gigas* crossed with *C. Gaskelliana*, *C. Dowiana* crossed with *C. speciosissima*, *C. Dowiana* crossed with *C. gigas* and the reverse. It will be interesting to note the flowering of these two crosses, as the beautiful species *C. Hardyana* is said to be a natural hybrid between the two. There are also *C. aurea* crossed with *C. Gaskelliana*, *C. Trianæ* crossed with *C. amethystoglossa*, *L. anceps* crossed with *C. Bowringiana*, and *Sophonitis grandiflora* crossed with *Lælia marginata*.

J. DOUGLAS.

Acineta densa.—This is a very pretty species which one does not see in every collection, but it is now flowering freely in Mr. Smee's garden, where so many of these old and discarded gems are to be found in a thriving condition. It is a bold growing plant and produces long pendent spikes of bright yellow flowers, which are more or less dotted with red on the inside. It requires to be grown in a hanging basket in the *Cattleya* house.

Cattleya speciosissima.—This is a plant which appears to be flowering freely in many gardens this season, but although very handsome and welcome too at this season, I have not seen many forms which called for extra praise. This section of the genus, however, I believe, has yet to yield us many extra fine varieties, and that too as soon as our gardeners can be persuaded to keep the plants dormant, and thus prevent late growth.—W. H. G.

Odontoglossum grande.—I am glad to see remarkably fine forms of this species, and in some quantity too, in various gardens, notably in Mr. Sander's establishment at St. Albans, where the numbers are large. In Mr. Measures' garden there are some fine varieties, and the same may also be said of Mr. Tautz's at Shepherd's Bush. In both of the last named private gardens I believe the species is to be encouraged and grown in quantity, so that at last my old favourite will receive the attention it deserves.—W. H. G.

Lælia elegans melanchilos.—This is one of the prettiest of the forms of *L. elegans* now flowering in The Woodlands collection at Streatham. It is a round, well-shaped flower; the petals are light purple, more deeply coloured and broader than the sepals; side lobes of the lip rolled over the column, white, faintly tinged with rose on the recurved tips; middle lobe broad and short, rosy purple, the colour being continued in a central band to the base. It is a charming variety, and lasts many weeks without losing its beauty.

Stanhopea Wardi.—This is one of the most charming species we have, and I saw a plant of it recently in the gardens of Mr. Tautz bearing fifteen spikes of its beautifully aromatic flowers; the sepals are broad, whilst the petals are narrow, rich yellow, dotted and freckled with crimson; base of the lip deep yellow, with a spot of velvety black on each side at the base, the broad front lobe and horns yellowish white, freckled with crimson; column broadly winged, white, freckled with crimson. This superb species comes from Guatemala.—W. H. G.

Angræcum Chailluanum.—This very fine species is now in great beauty with Mr. Tautz at Shepherd's Bush, and bears two long and many-flowered spikes; the flowers are of the purest white, the sepals, petals, and lip almost equal and recurved; the spur is long, measuring nearly 6 inches, tapering to the end, and tinged with a shade of yellowish-green. This plant was first received in this country from my old friend Mann when travelling on the Nun River, but his plants, arriving in a bad condition, had not bloomed on the arrival of M. de Chaillu's specimen. It is a truly

beautiful species as seen as it now is with Mr. Tautz, and leads us to hope for more beautiful kinds from the same country.—G.

Lælia Schilleriana.—This beautiful kind is usually called a variety of *L. elegans*, with which it can have no affinity, and I quite agree with Reichenbach in considering it a distinct species. Some excellent varieties of this plant are now flowering in Mr. Measures' collection at Streatham. In flower and growth it resembles a light-flowered *elegans*; the sepals and petals are white, more or less flushed with rose; lip not distinctly three-lobed, which is a striking character of *elegans* and has not been studied sufficiently by various authors; it is rich purple in front, pale yellow in the throat.—W.

Bolbophyllum umbellatum.—In the note attached to the figure of this species in the *Botanical Magazine* it is stated to have flowered at Kew in 1846, but, judging from the absence of any mention of it in popular horticultural works, it has probably always been, as it is now, a rare plant. It is certainly a charming little Orchid, and perhaps, if it had not the misfortune to be a *Bolbophyllum*, might become a favourite. It bears the flowers in a whorl at the top of a scape 6 inches high. The lower sepals are pale yellow, spotted with reddish-purple, whilst the upper sepal and the two petals are of a brighter yellow, freely dotted with crimson. The lip is purple, the apical part being jointed to the base so as to move up and down when touched, as is characteristic throughout the genus. The whole flower is three-quarters of an inch in diameter, and six or seven are produced on one scape. It is one of the few *Bolbophyllums* worth growing which succeed in a cool house. Potted in peat fibre and Sphagnum, and never allowed to become very dry, it thrives admirably. It is now in flower at Kew.

GARDEN FLORA.

PLATE 720.

AFRICAN IRISES.

(WITH A COLOURED PLATE OF *I. TINGITANA*.)

THE bulbous Irises, and especially the section *Xiphion*, are found generally in dry exposed places, and if the full measure of success be aimed at, they must be treated to extremes of drought and moisture, as in the case of many of the Cape bulbs. This applies more particularly to the section we are dealing with now, and which differs from both the *Xiphion* (Spanish) and *xiphioides* (English) in the presence of a distinct cylindrical tube to the perianth above the ovary, and the spreading segments. That those of this group are the most difficult to grow is well known by all who have tried them, not so much on account of minifness as for the want of the proper accommodation. With the exception of *juncea* and *filifolia*, both of which may be grown as we treat other plants from the Mediterranean region, the others certainly require protection to give anything like satisfaction. Treated in this way, however, they produce abundance of young bulbs which quickly attain flowering size, so that little difficulty need be experienced in procuring a supply for trial.

I. FILIFOLIA, though closely allied to the Spanish Irises, differs abundantly in its funnel-shaped flowers, of a reddish purple, with a large golden blotch on the fall. It was first discovered by Boissier in sandy calcareous rocks on the Sierra Bermeja at from 3000 feet to 4000 feet (French). Its introduction is due to Mr. Maw, who gathered it on the rock at Gibraltar in 1869, where it flowers in April, and it first bloomed at Benthall Hall, July, 1871. The leaves are very narrow, the flowers one, rarely two to a stalk, of a distinct violet-purple,

* Drawn for THE GARDEN in Messrs. Barr's grounds at Tooting, May 27, 1889, by H. G. Moon. Lithographed and printed by Guillaume Severeys.



IRIS FLORIBUNDA

and each from 2 inches to 3 inches in diameter. This Iris is well worth growing on account of its distinctive character; it is much hardier than *I. tingitana*, and flowers freely on a warm border in a deep rich soil.

I. FILIFOLIA VAR. INTERMEDIA, or *latifolia*, is a Tangerian Iris of great beauty. It is of recent introduction, and we believe almost unknown previous to 1871, when Sir J. D. Hooker made the tour of Morocco. From the account of the tour, p. 62, we quote the following:—

Maw had made good use of his time. In a first excursion to the lakes he had failed to find a beautiful Iris which we first admired on Sir J. D. Hay's dinner-table, and which we had taken to be the true *I. tingitana*. Not easily foiled from his purpose, Mr. Maw returned two days later and succeeded in his object. Subsequent examination has convinced us that the plant from near the lakes is a luxuriant form of *I. filifolia* of Southern Spain, though intermediate between that and *I. tingitana*. The present plant, which is one of the most beautiful of a beautiful group, is figured in the *Botanical Magazine*, tab. 5981, as *Xiphion tingitanum*. Nothing can surpass in the scale of rich sombre decoration the gradations of dark purple and dark velvet that enrich the petals.

It seems curious that although Salzmann collected it in 1825 in meadows near Tangiers, his locality has never been verified nor known to residents who are well acquainted with the plant. The leaves are each about an inch broad, tapering to a fine point, and of an agreeable bright green. The flowers are rarely less than 5 inches in diameter, of a brilliant violet-purple, and very striking in a clump or patch. This species, which has been largely distributed as *I. tingitana*, requires protection, and should be grown in a cold frame if possible. In mild winters it will do in the open, but its flowering is very uncertain.

I. FONTANESI also belongs to this group; it is a native of Oran, in Western Algiers, and is referred to *I. tingitana* by Mr. Baker. The flowers, which are deep lilac-purple, are as large as those of *I. tingitana*, the leaves intermediate between those of that species and those of *I. filifolia*. In a note Mr. Baker says the only appreciable mark of difference from *X. vulgare* is in the presence of the cylindric tube between the segments and the ovary. It has not yet been introduced to cultivation, though many efforts have been made to get it.

I. JUNCEA, another of this group from the south of Spain, North Africa, &c., is by far the loveliest and best of the bulbous Irises. Its extremely graceful habit and charming bright golden yellow flowers of a delightful fragrance are all points in its favour, and when one adds that it can be grown almost as easily as the English Irises, nothing else is wanted. It requires a light, rich deep soil, and will be all the better if planted where it can be kept fairly dry during winter. Salisbury, in the *Trans. of the Hort. Soc.*, vol. i., p. 305, describes this species as *Diaphane stylosa*, and says several bulbs of this species gathered by Prof. Broussonet near Mogador, in 1801, were given to me by Sir J. Banks and flowered in the following year. He was unsuccessful in the open air, and finishes by remarking, "I suppose it requires a deep soil with great extremes of drought and moisture."

THE TANGERIAN IRIS (*I. tingitana*)—see the accompanying coloured illustration—though one of the most beautiful and delicate of our bulbous Irises, is still comparatively rare in gardens. It was first discovered long ago by Schousboe and Salzmann in the neighbourhood of Tangiers, but only recently, not more than half-a-dozen years or so, has it been known in a living state. For its introduction we are indebted to the indefatigable efforts of Mr. Maw, of Kenley. Besides differing from all the other Irises in its longer tube, the difference that appeals to the grower most is the fact of the growing bulbs shooting in spring instead of autumn, as do those of the *Xiphion* group, in the stouter leaves, which with their broad clasping bases entirely hide the stem, and in the much larger limb of the flower. *I. tingitana* is certainly more difficult to keep in good condition than its older and better-known allies, the Spanish and English Irises. It is more suscep-

tible to the baneful effects of our wet winters, and seems to require the protection of a cold frame to see it at its best. We have managed it very well by planting the bulbs close to a south wall, but even here it causes trouble and anxiety in keeping the wet off. Indeed, we should not advise its being planted in the open at all, unless it can have the shelter of a coping or some other contrivance that would answer the same purpose. As a frame plant, on the other hand, where it can have plenty of space it is a charming flower and well worth care.

D. K.

CHRYSANTHEMUMS.

SEEDLING CHRYSANTHEMUMS.

THE growth of plants from seed must be an interesting occupation to lovers of this autumn favourite, especially where ample means are at hand to carry it out on a large scale. The development of the flower buds forms the crowning point after much labour has been expended on the raising of the plants and growing them on. Possibly the reward may be but small as compared with the labour expended. I had lately an opportunity of inspecting a number of seedling plants in the gardens at Coombe Warren, the pleasantly situated estate belonging to Lady Wolverton. The seedling plants in question were growing in long beds, each about 4 feet wide on an open piece of ground, and, judging from their stout healthy appearance and prominent buds, gave abundant promise of bloom, but whether the flowers will be better than those of existing varieties remains to be seen. In one respect, viz., dwarf habit, they are superior. At the time of my visit, September 7, many of the plants were not more than 1 foot high, and the tallest 3 feet only, and they were not expected to grow scarcely any higher, as the buds were nearly all "taken." After the flower buds are set and all growths removed, the plants make but little progress upward. From Mr. Woodgate I gleaned a few particulars as to the manner in which the plants had been grown from the time the seed was sown. These notes may prove as interesting to others for future use as they did to me.

The seed was obtained from both English and French houses, and was sown early in February in a gentle heat. The seedlings were pricked off into boxes when large enough to handle, gradually hardened off and finally planted out in May. Three and four branches are allowed to each plant, and from the point of each a single bud is swelling evenly. All side shoots and suckers have been kept pinched so as to divert the whole strength of the plants into the selected buds. Sufficient space was allowed for the growth of each plant without overcrowding its neighbour. Provision will be made to protect the plants from frost before they expand their blooms. Any varieties which give promise of improvement or novelty will be marked with a view to future cultivation under the orthodox system adopted to produce large flowers. The first step in raising seedling Chrysanthemums is the introduction of new and distinct colours; form of bloom and the quality will follow by a better state of cultivation. A most important item for hybridisers to consider is the reduction in the height to which many varieties grow. I fear it is useless to try to obtain the best results from some existing varieties under any other method of culture than that adopted at the present time. Happily, many new sorts of sterling quality introduced during the last two or three years are of much dwarfer character than was previously the case.

E.

Earwigs on Chrysanthemums.—If those persons who declare that earwigs do no harm to the growth of the plants could have been with me on the morning of the 7th inst., they would have seen a sight which I shall not easily forget. I had no idea there could have been so many earwigs on one particular place. Mr. Woodgate, Warren House Gardens, Kingston Hill, cultivates about 500 plants on the large bloom method, and from what I saw he must be sorely troubled with earwigs. He adopts

the remedy of placing Broad Beans stems cut in lengths for trapping them, but he has quite a unique way of destroying them after they are once within the Bean stalks. The stems are cut in lengths of about 9 inches to 1 foot, and instead of thrusting them among the leaves of the plants he lays them on the top of the pot crosswise with the side touching the stem of the plant in the middle of the pot. He thinks that when removing the Bean stalks from among the foliage some earwigs may be lost, and by laying the traps on the pot top as the earwigs descend they crawl along the stalk until they come to the end, when they take shelter from the light. Early in the morning a boy examines each Bean stalk, and by gently blowing at one end the earwig runs to the opposite end, and instead of its being allowed to fall on the path, as is generally the custom, a small clean empty glass bottle is held in the left hand into which the earwigs fall. Searching for them is so much more quickly done than by any other way I know. A glass stopper fitting the bottle is then put into it, and the earwigs can be destroyed at any time and in a quick manner. In three bottles I saw as many as one quart of earwigs in a solid mass. One plant of Duchess of Albany they had paid especial attention to, and to see what they would do if left unheeded, Mr. Woodgate had not trapped any from this plant, the consequence being that all the points of the shoots were crippled, the leaves riddled, and the whole a total wreck. No less than 100 earwigs had been seen on this particular plant in one night when searched for by lamp-light. What must the difficulties be to cultivate Chrysanthemums in a district like the above? The recent hot dry weather favoured the spread of earwigs, especially where the soil is of a sandy and consequently dry nature, as in the Coombe Warren district. Perhaps as the plants are now growing in the kitchen garden they are more troubled with this insect pest, as there will be more harbour there for them. It is to be hoped that when the plants are removed to their flowering quarters—a quarter of a mile distant—they may not be so much troubled with these pests.—E. M.

CHRYSANTHEMUM HEDGES.

CULTIVATING Chrysanthemums in such a manner as to form hedges may appear to some people strange, but grown in this manner they create quite an interesting feature in the garden, provide a quantity of blooms for cutting, and do not entail a great amount of labour. Mme. C. Desgrange is the variety best suited to this method of culture, being of a bushy, free-growing habit, not too tall, requiring little support, as the branches are stiff and almost self-supporting. The blossoms expand long before frost sufficiently severe to hurt the blooms can be expected. The blooms, also being white, are very useful at this time of the year. I lately saw a hedge of this variety fully 60 feet long and from 3 feet to 4 feet high. On an average the plants carried six dozen blooms each. The plants were growing in a cottage garden, and were trained to a light iron fence about 3 feet high. The aspect being north and south, both sides of the hedge equally received the sun's rays. To successfully cultivate hedges of Chrysanthemums after the manner of the one described above the following details should be carried out. About the middle of December insert stout cuttings in sandy soil, which may be made up on a bed of leaves in a cold frame within 3 inches of the glass to prevent the plants being drawn up weakly if placed at the bottom of an ordinary cold frame, a circumstance to be avoided, as upon the preparation of the plants by keeping them stocky in their early stages depends their successful culture. If more convenient, the cuttings may be inserted several together in 3-inch pots, placing them on a bed of coal ashes in the frame. Directly the cuttings are well furnished with roots place them in 3-inch pots, returning them again to the frame. The next shift should be into 5-inch pots, gradually hardening them off, and as soon in April as it is safe plant them in their permanent quarters, allowing a space of 18 inches between each plant. About the roots place some new soil with which is mixed some partly decayed manure, treading the

whole firmly about the roots to induce a firm growth. When the plants are about 1 foot high pinch out the point of each leader, which will induce a number of shoots to spring from this point; by this means the plants will not grow quite so tall as they would if allowed to grow uninterrupted. Should the weather be dry, abundance of water at the roots and vigorous syringings over the foliage will be of immense advantage in producing a free as well as a clean growth. The shoots should be secured in some way or other to prevent their being broken by strong winds, heavy rains, or any other cause, by placing a few stout stakes in the ground 2 feet high and about 4 feet apart, tying one cross rail to these; to this support the branches should be loosely secured on both sides as growth proceeds. When the flower buds are formed, if the plants can be liberally supplied with some stimulant, the blooms will be much improved, and numerous short side-shoots will push from the stems all the way up, which will not only hide the branches, but will prolong the flowering period as well as add a richness by the colour of the leaves, without which the beauty of such hedges is considerably shorn. E. M.

NATURALLY GROWN CHRYSANTHEMUMS.*

Treatment of Plants Grown for the Production of Exhibition Blooms a Short Time Previous to the Shows.

In consequence of the different conditions under which Chrysanthemums are grown it is somewhat difficult in referring to the treatment naturally grown plants for the production of exhibition blooms should receive to fix upon a starting point. Much, as the majority of you are aware, depends upon the strength of the plants, the firmness of the wood, and the treatment they have hitherto received.

Speaking as a southern grower, I will suppose that the plants have been well cultivated and are now strong and healthy. I will also assume that the wood is well hardened, and that the plants have their buds in various stages of development. At the outset I will call your attention to a matter of the greatest importance, and that is the application of a rich top dressing. I top-dress my plants at the end of July or early in August, a space of about 2 inches being left at the final potting for this purpose. About an inch of the material to be used is placed upon the surface of the pots and pressed down rather firmly, the application being made when the soil in the pots is moderately dry, so that it does not work into a paste. The mixture used for top dressing consists of one part of loam, one part of decayed manure, a small quantity of old mortar, and a sprinkling of bone-meal. For some time afterwards the plants are watered with a can, to which a rose is affixed to avoid the risk of the top dressing being washed out of its place, or indeed being greatly disturbed. Whatever feeding the plants may have had previous to this surface dressing should be continued afterwards, as the top dressing has no immediate effect unless a fertiliser of quick action be added to it. But the addition of manure that will act rapidly I do not think absolutely necessary, although I used it previous to last year. Now if the surface material be examined about three or four weeks after its application, strong healthy roots will be found working their way through it, and when the time arrives for housing the plants the surface will be seen to be more or less covered with these healthy, vigorous feeders. In my opinion nothing can be of greater assistance in the taking up of supplies of food so essential to the plants during the development of the buds than these newly-formed fibrous roots. This may at first appear to have but little bearing upon the future treatment of the plants. I have, however, explained this to show the condition the plants must be in as regards root action. Having, then, secured plenty of newly-formed rootlets for the taking up of the food, I now feed chiefly with Clay's fertiliser and Thomson's Vine

manure. These I use alternately, at intervals of about eight days, but in this matter I am guided by the state of the weather. If prolonged dull wet weather sets in the manures must be used more sparingly, so as not to cause too quick a growth, or the flower-stems will be weak and the blooms lacking in substance. I use both manures at the rate of about one ounce to each plant of the strongest growing varieties, such as Fair Maid of Guernsey, Grandiflorum, Maiden's Blush, Princess of Wales and its sports, and the Queen family. The latter I consider the grossest feeders of all. In the case of weaker growing varieties, such as Meg Merrilies, Criterion, Jeanne Délaux, Lady Hardinge, and Mrs. W. Shipman, I use the manure more sparingly, about three-quarters of an ounce to each plant being a very suitable quantity.

This rate of feeding is continued after the formation of the flower-buds, with an occasional watering with liquid manure from the cesspool, as an occasional change of food is, I believe, very beneficial to them. The water used is previously placed in a large tub standing in the open, fully exposed to atmospheric influences; hence it is maintained at a somewhat similar temperature to that of the soil about the roots. As a still further assistance to the plants, a bag containing soot is placed in this tub. This bag is refilled with soot about once a fortnight, as the strength is found to be washed out of the soot in about that period. The plants are fed in this way until the blooms commence to expand, when all feeding ceases, excepting when the bloom is late. Then a little sulphate of ammonia is applied. But I do not advise the use of the sulphate excepting for the purpose of assisting in bringing forward late varieties, as it tends to shorten the durability of the blooms after their expansion.

Mildew is a most troublesome disease, and generally makes its appearance with us early in September. Sometimes it attacks the plants earlier, and this season they were attacked at the end of August. We are situated in a low-lying spot, and consequently the Chrysanthemums are more subject to its attacks than are those grown in gardens occupying a higher and drier situation. On its first appearance every plant is dusted with flowers of sulphur, usually early in the morning when the leaves are wet with dew, as the sulphur will then adhere to the under surface. This is a very important point, as the rain cannot remove it from the under surface as it does from the upper surface. I seldom have to repeat its application, and I have not on any occasion, since adopting this practice been troubled with mildew after housing the plants. Black-fly is very troublesome here every season about this time. To eradicate this pest, I dust with tobacco powder immediately it makes its appearance. Also, after the plants are housed and before the blooms commence to expand, I fumigate slightly two or three times to free the plants from any aphides that may remain.

Much depends upon the time the plants are housed, especially the late varieties. As to the time of flowering, I do not care so much whether such varieties as Boule d'Or, Grandiflorum and the like form their buds early in August, or at the end of the month. Their blooms can be expanded by the middle of November. Last season I took Boule d'Or buds on September 1, and Grandiflorum buds on September 8, and exhibited them both in good form on November 12. These, with such varieties as Princess of Teck and its sports, Barbara, and Thunberg, should be housed earlier, and placed in a favourable position. The above varieties, with others correspondingly late, are placed on the side stages of the greenhouse immediately over the hot-water pipes, and by means of large flower-pots are raised as near to the glass as possible. These receive a little sulphate of ammonia twice a week, and when the solar influences are not favourable, a little artificial heat must be applied. The cultivator must use his own judgment as to the time of housing his plants, taking into consideration the locality in which he resides, and the state of the buds (whether late or early), and also what means he has for forwarding them. These are important points which well repay a little study, and cer-

tainly cannot be ignored by those who would achieve success in a close competition.

Having stated how the late varieties are treated, I will allude to the general collection. The earliest varieties, which require very little fire heat, *i.e.*, only sufficient to maintain a dry atmosphere, are placed in an early vinery; and those that are naturally a little later are arranged upon the centre stage of the greenhouse. All are raised as near to the glass as possible by means of planks laid upon drain pipes placed in an upright position upon the stage. The plants are placed upon the platform thus provided, the tallest plants being arranged at the back and the dwarf ones towards the front. The plants nearest the front are raised by means of various sized flower-pots, so that when all is complete they form a very sharp slope to the south. By this arrangement the upper growth of every plant receives a full share of light and air—a matter of great importance if good blooms are expected. Again, every bud can be seen when the cultivator is standing in front of them, so that should they require attention a plant or two can easily be removed for that purpose.

I will not occupy your time in alluding to dressing the blooms, as most growers will have acquired that art from practice and from the directions so well given in Mr. Molyneux's eminently practical book. But, in conclusion, I should like to draw your attention to one further important point, and that is arranging the colours on the exhibition board. I have noticed scores of stands arranged with sometimes as many as four, and even six, blooms of a bronze or other dark shade placed together. This is not as it should be, for by a judicious intermingling of the light and dark shades of colour each bloom will add to the effect of its neighbour, and consequently to the attractions of the exhibition table. It may also make all the difference between a first or second place in a close competition.

TREES AND SHRUBS.

THE WEEPING INDIAN JUNIPER.

(JUNIPERUS RECURVA.)

MR. COLEMAN, in THE GARDEN, Sept. 7 (page 215), has fallen into the old error of describing the beautiful *Juniperus recurva* as *diœcious*. Gordon, in his "Pinetum," made the rather unfortunate mistake of describing this *Juniper* as *diœcious*, an error into which subsequent writers ("Senilis" in his "Pinaceæ," and Veitch in his "Manual of Coniferae") have either fallen or followed. Fully two years ago, so as to prove the *diœcious* character of the tree, I forwarded twigs bearing both male and female flowers to the editors of both the *Gardeners' Chronicle* and THE GARDEN, and to the latter paper I contributed a rather lengthy article (February 13, 1886), correcting the mistake hitherto made regarding this handsomest of all *Junipers*. What has heretofore been known as the male or pollen-bearing form of *Juniperus recurva* is nothing more than *J. densa* in an unfruitful condition. This latter has likewise become confused in nomenclature with *J. squamata*, from which it may at a glance be distinguished by the yellowish-green and somewhat sickly-looking foliage, much taller, erect habit, and by its never spreading to such an extent as *J. squamata*. Dr. Masters, in acknowledging receipt of the *Juniper* twigs, stated that others similar to what I had forwarded had been received at the office some time before.

This specimen figured in THE GARDEN is the largest and finest I have heard of, although one in the famous Hafodunos collection must be nearly as tall. Perhaps, should this note meet the eye of Mr. Sandbach, he would favour you with the size of the tree to which I refer. In every case where this *Juniper* is brought under notice, I consider it to be a great omission not to make mention of the pretty dark purple berries with which healthy specimens are usually well loaded. In winter and spring they have a pretty appearance, the pendu-

* Paper read at the National Chrysanthemum Society's Conference, September 11, 1889, by J. Doughty, Angley Park, Cranbrook.

lous greenish-grey foliage contrasting so markedly with the oval-shaped richly-coloured berries.

Often have I noticed three crops of fruit on the trees at one and the same time, some green, others suffused with a bronzy hue, and the full ripe ones an enticing purple. Seeds have been abundantly produced on several trees I know of, and young plants raised without much trouble. Anyone about to plant this distinct and very desirable Juniper, should place it in a semi-shady situation, or where it will not all day long be exposed to direct sunlight.

I hardly think that more healthy and better clothed specimens of this Juniper could be pointed out than those on Sir William Verner's estate in the north of Ireland, or those near the famous Penrhyn Slate Quarries in Wales (at Brynmeirig), all of which are growing in partially shady situations. Too deep a soil is by no means a necessity in the culture of the tree, for I fancy that it likes to send its roots amongst broken rocks or boulders if these are hidden under ground for a couple of feet. This Juniper soon becomes rusty and insect-infested if planted in light and too warm and dry soils, and it is then about as repulsive a Conifer as could well be imagined.

A. D. WEBSTER.

GRAFTING CRATEGUS PYRACANTHA.

THERE is certainly no occasion to graft the *Pyracantha* as a means of propagating it, for cuttings strike readily and grow away freely enough afterwards, quite as freely (according to my experience) as when grafted on the Quince. I have put in cuttings at various seasons of the year, and find that they root most quickly if taken soon after midsummer, and kept close and shaded in an ordinary garden frame till they strike, which will be in a couple of months or thereabouts. Cuttings may be put in at almost any season, and where a quantity is required they may be dibbled into a bed prepared for them at any time during August or September, when if covered with a frame they will be well rooted by the following spring. The *Pyracantha* may also be struck in the open ground, but of course in that case larger cuttings are necessary. For a frame a length of 4 inches to 6 inches is quite sufficient, while for the open ground the cuttings will require to be nearly twice as long, of which three-fourths, or thereabouts, may be buried in the soil.

Another subject that has had a considerable amount of attention directed towards it during the discussion on the grafting question is *Prunus triloba*, which can also be struck from cuttings, but not nearly so readily as the preceding. I have met with a fair measure of success by taking cuttings of the weak shoots that are produced by forced plants early in the spring, and having inserted them into pots of very sandy soil they are kept in a close case in an intermediate house temperature, in fact subjected to much the same treatment as othersoft-wooded cuttings, such as those of *Fuchsias*, *Heliotropes*, and like subjects. When rooted the plants must be gradually hardened off and in time planted out. The cuttings at all times need especial care, more particularly to guard against their decaying, which from their succulent nature they are liable to do. Such a mode of propagating a hardy shrub may appear to savour too much of the coddling system, yet the fact remains that it is the only way I have succeeded in striking it even fairly well, as of cuttings taken when deciduous very few will root. Of course, propagating by layers is available, but the number that can be raised in this way is limited, unless a considerable number of stock plants are pressed into the service. Plants propagated other than by budding or grafting will of course be dearer than those raised in that way, as they take much longer to attain a saleable size; still I would prefer one specimen of this beautiful Plum on its own roots to a dozen of the others, as I consider no better subject could have been chosen to illustrate the evils of grafting than this, which produces suckers in such profusion that nothing short of continual attention will keep them in check. I have had under my observation

for the last twenty years a grafted specimen of this grown in bush form, from which every year quite a bundle of suckers has to be removed.

The little double-flowered *Prunus sinensis* can also be struck from cuttings in the same way as the species previously mentioned, but it strikes more readily than *P. triloba*; indeed, I see it is offered by Messrs. Transon in their catalogue both in the shape of plants on their own roots and grafted. These last are somewhat cheaper, but the difference between them in this respect is not great. The various garden forms of *Clematis*, again, are not at all difficult to strike from cuttings if the stock plants are early in the year introduced into a gentle heat, just as is done where grafting is carried out. The young shoots that are speedily pushed out in a growing atmosphere will strike root readily enough if taken off and inserted as above recommended for *Prunus triloba*. They must be hardened off as soon as rooted, and if potted will form nice little plants the first season. Another class of subjects the grafting of which appears to me quite unnecessary is the Indian *Azaleas*, which are universally grafted, yet they strike root readily from cuttings formed of the young growing shoots, more especially if they are taken from plants that have been forced. When grafted the object of the cultivator is to hide the naked stem as far as possible, but where plants are struck from cuttings, they naturally break out bushy from the base and thus form handsome little specimens.

H. P.

TREES AND SHRUBS IN CHEVENING PARK.

HARDLY half a mile distant from the famous Knockholt Beeches—a landmark on the face of Kent—and amongst gently undulating ground nestles the pretty mansion of Earl Stanhope. The chalky mounds and ridges are just what one would expect to grow to perfection a few at least of our biggest forest trees, and in this, one is certainly not disappointed, for the huge Beeches and Yews tell but too plainly that the conditions under which they are growing are far from unfavourable. Then the Austrian Pine puts on its best garb in these chalky woodlands, the beautiful glaucous hue discernible for a long distance away being only equalled by what one sees in the limestone soils of lower Austria.

Hard by the house and on the beautifully green and level lawn are some of the finest Elms that I have ever seen; indeed, I question very much whether three trees of equal or greater dimensions than those I refer to could be pointed out as growing on an equal space of ground anywhere in the British Isles. As showing their huge proportions I may state that at a yard from the ground the well-rounded stems girthed 18 feet 5 inches, 18 feet, and 18 feet 4 inches respectively. Such stems, towering to fully 90 feet in height, straight as arrows, and with but a slight taper throughout, are not often met with. That they were in excellent health a glance at the bright green and plentifully produced foliage clearly demonstrated.

Tulip trees of rather unusual proportions and with the freshest and brightest of foliage stand out in bold relief here and there along the margin of the lake; one of these of which I took the measurements was 5 feet in girth of stem at a yard from the ground, had a branch-spread of 11 yards, and was fully 50 ft. in height. The *Liquidambar*, too, are worthy of note, they being of large size and as healthy and free-growing as could well be desired. Both this and the Tulip tree are of great value in ornamental grounds on account of the ample and handsome foliage. A Silver-leaved Elm pleased me greatly, it being well placed for effect in front of some dark-leaved Beeches, but at sufficient distance therefrom to allow of its free and full development. It was about 50 feet high, had a spread of twiggy, thickly-leaved branches 36 feet in diameter, and a stem that at 3 feet girthed 52 inches.

The Purple Beeches are of large size, but that is only what one would expect from the chalky formation of the soil; while the typical tree could be seen by the score with stems girthing from 8 feet

to 12 feet. One of the purple forms was 60 feet in height, and girthed 5 feet at a yard up, while the well-branched head ramified to fully 50 feet.

Pinky barked Dogwoods are always pleasing, but particularly so when arching over a pond or lake, and those at Chevening were no exception to the rule, for the big irregular masses betrayed something of the grandeur that one sometimes sees in unclipped and unmutated specimens. The Venetian Sumach, too, with its great woolly heads, far more imposing than those of the *Spiræa arifolia*, or Old Man's Beard (*Clematis Vitalba*), was here in all its grandeur, for who can deny that a full-grown specimen of this curious shrub is not a fitting subject for any garden.

Amongst Conifers that I noticed doing well at Chevening, particular attention might be directed to that best of all Firs—*Abies Pinsapo*—for limestone or chalky soils. How well it does where a calcareous medium is present in the soil may be noticed in not a few of the woods in Kent and Surrey, the bright healthy foliage and rapidity of growth betokening that the tree is quite at home, and peculiarly well suited for the special class of soil.

Lawson's Cypress (*Cupressus Lawsoni*) was also growing freely, several fine tapering specimens relieving the too dull monotony of the grey-barked Oaks and Birches. Of Oaks with massive heads and gnarled mossy stems not a few were visible from the lake walk, some being of unusual proportions, and showing from their decayed and hollow stems (the mark of age) that they had stood not a few of the wild storms to which the southern parts of England seem peculiarly susceptible.

In the wood amongst the Yews and Beeches our native Hellebores grow freely enough, while the Helleborine (*Epipactis*), with its nodding flower-heads, was conspicuous wherever an open spot of sufficient width for its creeping root-stems could be found.

The Knockholt Beeches are known to everyone for a radius of fifty miles around, they occupying a knoll of considerable height on the outskirts of the park. Growing in and around the margins of a disused chalk-pit one would naturally expect these Beeches to be fine trees, and so they are, only it is not hard to decipher on their topmost boughs the marks of many a storm, for their giant height and fully-exposed situation render them liable to the effects of every wind that blows.

There are about ninety trees in the clump as well as a few straggling dwarfed specimens that have, through "the survival of the fittest," reached nearly their allotted span. Generally speaking the trees look well, and show only a few effects of the rather fierce struggle that must almost constantly go on between them and the sweeping winds to which they are subjected.

One of the biggest trees that I could single out girthed 11 feet 3 inches in size of stem at a yard up, while the towering head reached a height of nearly 90 feet.

There were others, perhaps a dozen, of similar size, but the one whose dimensions I have recorded was about the best. The majority of these Knockholt Beeches had fine, well-rounded, glossy stems, only such as one meets with when the tree is growing in chalk or limestone, and destitute of branches for half-a-hundred feet up, the ground beneath them being bare as a parched mountain ridge, and with only a few flints and lumps of crumbling chalk cropping up here and there over the surface.

It seems quite surprising in how small a quantity of soil the Beeches will build up giant stems if only on the chalk formation, some instances I know of puzzling one to account for how such ponderous trees could eke out even a miserable existence on the dry, chalky escarpment.

A. D. WEBSTER.

Cyclamen hederæfolium.—Why is not this oftener seen in our gardens? It is a native of Southern Europe, naturalised in some few places in England, and flowers splendidly from August until

October. At the present moment it is in full flower, and as a rock plant has few equals. It may be planted with success in woods and semi-wild spots, the only care required being in keeping the rank weeds from smothering the tubers during the summer months, which is the natural resting season. The purplish red or rosy flowers are borne in the greatest profusion, and even after they are done the handsome marbled foliage is a source of interest all through the winter. It is plentiful in the trade, and ought to become an inmate of every garden.—K.

FLOWER GARDEN.

THE CACTUS DAHLIAS.

ONE HUNDRED YEARS have elapsed since the Dahlia was first introduced to England, and great changes in the flower have taken place within that time. The event was worthily celebrated by a beautiful and instructive exhibition at the Crystal Palace, when those interested in the flower could judge of the progress made during the century. All the classes of Dahlia were there, the show types, that have always held their own, the Pompon, the single, and the Cactus varieties. Of this throng none is more popular or promises to develop more rapidly than the Cactus Dahlia. Its strange character, freedom, distinctness, and effectiveness in the garden are sufficient to account for this decided favour. Neither the show, single, nor Pompon varieties are like it; it has a striking individuality, and bears most graceful flowers that may be used when cut without lumpy effects. The history of the Cactus Dahlia is romantic. Mr. J. T. Van der Berg, of Juxphaar, near Utrecht, in the year 1872, received a box of flower seeds and roots from Mexico, and by reason of delays on the journey the contents were for the most part rotten, and those alive in but poor condition. All the seeds that had any life were sown, and amongst the seedling plants was a small tuber, which proved to be the Cactus Dahlia, at that time unnamed. As it was then winter, cuttings alone were taken; these with care made good plants, so that in the spring of 1873 there was a stock. In the following June plants were put out in the open ground, and the rich scarlet, strangely shaped flowers filled everyone who saw them with astonishment. They were unlike those of the Dahlia of that day, and foreboded a great future for the new type. A leading French firm purchased the stock in the year 1874, and from thence it went to Messrs. Ant. Roozen and Son, the great Dutch nurserymen. Its introduction to England occurred at this time, as Mr. W. H. Cullingford, of Phillimore Gardens, Kensington, purchased it from Messrs. Ant. Roozen, but it was not for a year or two that it appeared at an English exhibition. Mr. Cullingford gave plants to Mr. Cannell, and by him the first flowers were exhibited at South Kensington on 3rd of September, 1880. Their peculiar character at once suggested the name "Cactus" Dahlia, which has been retained for the race generally, though they are more commonly known now as "decorative." Juarezi is derived from Juarez, a President of Mexico, after whom the plant was named.

With such a distinctive flower to work upon, the hybridists soon commenced to raise new varieties, which have come to the perfection we see them in at the present day. Considering only nine years have elapsed, great things have been accomplished; but each year sees the introduction of new varieties that extend the range of colouring, and give us those soft and charming tints which are to be found in the showy single and Pompon classes. The

type itself, Juarezi, still retains a firm place in public favour. It is the "Paragon" of the Cactus race, and, like that beautiful single Dahlia, seems to be more grown each year, in spite of the addition of many new varieties. Juarezi has one bad trait, and that is its habit of smothering the flowers beneath a canopy of leafage, so as to hide them from view. This fault has been rectified in the newer introductions, which throw the flowers well above the leaves, and give a good length of stem to cut. Juarezi is the only flower that has the true pointed petal, and already we are beginning to lose that free, graceful, and unique form, the most recent varieties showing a flat, broad petal, which makes a good "show" bloom without, unfortunately, much of the true Cactus character in it. This should be carefully guarded against. The Cactus character should not be lost, but retained in its fulness as far as possible so as to keep the race distinct and unique. There is a wide field for the enterprise of the hybridist. A smaller flowered race, such as might be obtained by infusing the Pompon blood into the Cactus class, would possibly give good results. The tendency is to force the flowers to their utmost limit of size. Nothing is gained by it, as their characteristic points are lost by this unnatural treatment, and we gain only a severe formality, which should be the very thing to avoid.

The following are a few of the best varieties:—

BEAUTY OF BRENTWOOD.—This is of splendid Cactus character, with less of the show style in it than many. The flowers are purple, shaded with a pellucid magenta tint.

CHARMING BRIDE.—An American variety and a charming flower, white, richly suffused and tipped with pink.

EMPRESS OF INDIA.—Without doubt the finest of the maroon-coloured flowers. It is of bold handsome form and very free.

HENRY PATRICK.—A lovely pure white flower now much grown.

LADY M. MARSHAM.—The flowers of this are like those of Juarezi in expression, and of an unusually distinct salmon shade.

WILLIAM DARVILLE.—This throws its flowers well above the leaves; the colour is bright purple, richly shaded with magenta. It is exceptionally free and handsome.

WILLIAM RAYNER.—A good salmon-buff coloured flower.

WILLIAM PEARCE.—One of the best of the yellow varieties.

ZULU.—This is valuable for the rich purple-maroon colour of the flowers; they are almost black. Its growth is not so free and handsome as that of some.

A. W. TAIT.—A beautiful pure white variety that should be in every collection.

JUAREZI is still one of the best.

MRS. HAWKINS.—A distinct and beautiful flower of good Cactus expression, full, and handsome; the colour is rich sulphur, which is faintly suffused with a pinkish shade at the tips of the pointed petals.

PANTHEA.—A brilliant scarlet flower of true Cactus form. It has been well exhibited this season.

HONORIA.—This yellow-flowered variety has been exhibited this season; the colour is decided and the form of the flower good. C.

Double perennial Sunflowers.—The more good varieties of these we have the better, but the one Mr. Beswick (*THE GARDEN*, Sept. 14, p. 238) describes is not a third kind, but only a condition of one of the two, resulting simply from cultivation and age of the flower, and, unfortunately for his description, Soleil d'Or as drawn by Gertrude Hartland has not erect quilled petals, but distinctly reflexed ones, exactly as he says multiflorus plenus has. If

next season he will leave a clump of either Soleil d'Or or multiflorus plenus alone starving where it has grown for a year or two, and will pull another similar one into single crowns and plant them in a Celery trench, he will learn something about double Sunflowers that so far he does not seem to know.—T. SMITH.

NOTES ON ANEMONES.

WE expect to have Anemones in winter and spring, but I never thought to see them blooming freely the first week in September, and the fact that a bed of the famous St. Brigid strain is producing plenty of really good flowers is a proof that we may enjoy these fine hardy flowers for a period of not less than nine months out of the twelve. The rapidity with which these plants now in bloom have reached the flowering stage is striking, for they did not come into existence until April was well advanced, so that four months' growth from the seed has sufficed to give them the strength to produce good blooms. I should much like to know if any of the readers of *THE GARDEN* have had a similar experience with Anemones. I should have thought it impossible for them to have done so much in such a short time. In a general way I have found seedlings raised in spring to come into bloom late in autumn, but the production of bloom almost before August is out is a rather different matter. I cannot pretend that this precocious blooming is due to high culture, for the ground in which the seeds were sown was by no means in good heart, but I took care to well work it. In order to ensure germination I followed my usual plan, in the case of choice seeds sown in the open, of covering the bed with old lights, shading with mats. If seeds have any goodness in them they will respond to this treatment, and all the Anemone seeds appeared to come up much too thickly indeed for the seedlings to remain untransplanted. Had the seedlings more room they would be much stronger and the blooms would of course be larger. Although the plants have never been watered and the weather lately has been very hot and dry, the foliage is as fresh and green as Parsley; indeed the leafage of Anemones forms one of their greatest charms, as even when not in bloom they form a carpet of verdure that is pleasing to the eye through the winter months.

Anemones are amongst the few hardy flowers that do not seem to gain much by association with other things. I like to see them in large masses in sunny, breezy positions. There is no place that so fully displays their beauty as the slope of a hill, and I think that if the soil is made right for them they enjoy such a position more than any other. The Pasque Flower and the Pau Anemone are naturally found in such situations, and the more free and open a position they get in gardens the more likely are they to develop handsome and abundant blooms. One reason for this is probably that the roots get better ripened, and growth being made at a time when most hardy flowers are at rest, the best of drainage is a prime necessity for them. I do not think that Anemones are ever likely to do thoroughly well unless the soil about them gets a good baking at some time in the summer. In raising Anemones from seed it is much better to put it in the open ground than to sow in boxes and transplant. Some old mats laid on the soil will ensure germination, and the young plants get well established and grow away without check, no matter what the weather may be, and there is no necessity for watering, although to favour the production of early and good blooms a good soaking now and then is decidedly beneficial. I think that not nearly enough is made of Anemones for brightening the outdoor garden through the autumn. The drenching rains and cool nights that work such havoc in the flower garden in October only impart strength to Anemones, and the sharp frosts of that month they do not fear. It is something then to have beds of single Anemones bright in leafage and throwing up bold, handsome blooms. With a bed of the giant single Victoria and the double Irish strains there will be no difficulty in loading up the flower basket, and the dwelling can be made bright with their richly hued blossoms at

a time when the beauty of the outdoor garden is over for the season. To be able to thoroughly appreciate the capabilities of Anemones for beautifying the open-air garden seed should be sown as early in March as possible, and again towards the middle of April. Anemones are like other hardy flowers; there is a limit to their blooming powers, and plants that have bloomed freely through the early autumn cannot be expected to do so during winter and spring. With the two sowings, leaving some roots in the ground and planting again in October, the succession of bloom will be maintained. J. C. B.

Sedum Telephium.—When found growing in quantity this native Sedum is both effective and handsome. It is a very variable species, and many varieties of it are in cultivation, but the typical form is the handsomest of all. Upon dry banks, in thickets, and among the Furze on barren Heaths it thrives, spreading into broad, healthy, and vigorous colonies. Some strong colonies in our Suffolk thickets are now in full bloom. It grows about 18 inches high, and the shoots terminate in a broad, flat head of rosy purple flowers, which last long both upon the plant and in a cut state. This pretty species would look well naturalised in any rough spots about the garden.—A. H.

Lilium speciosum Kratzeri.—I consider this is the best of the white-flowered forms of *L. speciosum*, which in all its varieties is an extremely useful Lily for the decoration of the conservatory at this season of the year. The variety under notice is one of the dwarfest of the speciosum section, the sturdy flower-stem being well furnished with rather pale green pointed leaves, while the flowers are pure white except a greenish stripe in the centre of each petal, which commencing at the base extends for about half way towards the point of the petal. This Lily is easily distinguished in all stages from the white variety grown in Holland (album), and imported in such numbers to this country during the autumn and winter months, for album has the stems and exterior of the buds tinged with chocolate, which is totally wanting in *Kratzeri*, while the prettily reflexed petals of *Kratzeri* are more pleasing than the somewhat irregularly disposed ones of album. I cannot understand why the Dutch bulb growers do not take *Kratzeri* in hand and produce it in quantity, for in this country at all events it is quite as vigorous as any other form of speciosum, and we have principally to depend for our supply upon importations from Japan, which during the season arrive here in large numbers and nearly always in very good condition. The bulbs will flower beautifully the first season, and being disposed of at a very moderate rate are within the reach of all. A very superior form of *L. speciosum rubrum* is also sent here from Japan, and then the question again suggested is, why are the Dutch varieties so much inferior to these? The bulk of the Japanese ones consist, as above noted, of a good form of rubrum, but interspersed with them to a greater or less extent occurs another variety with very deep coloured stem, leaf-stalks, and buds, the leaves too being somewhat broader and rounder than those of the others, while the flowers are of a remarkably rich tint, the effect of which is heightened by a narrow whitish margin to each petal. This is by far the best deep-coloured variety of *L. speciosum* that I am acquainted with, and one well worthy of a little extra care and attention.—H. P.

Branching Larkspurs.—One of the finest flower displays I have seen for some time was one in the south of England a few days ago; it was a long and somewhat broad line of different varieties of branching Larkspurs. Sown in the open ground at the early part of May the plants had made a bold growth, and they were literally covered with blossom from head to foot. There are many different tints from dark blue to white; the pink and rose shades are delightful, and daily cuttings of sprays can be made without appearing to materially reduce the quantity. The act of cutting prevents seed-pods being formed to any extent; consequently the plants go on blooming. There is a

grace and elegance about the branching Larkspurs that one misses in the formal-looking dwarf Rocket types, which, while very showy, are yet ill-adapted for decoration or cutting.—R. D.

GIANT ROCKFOILS.

(MEGASEAS.)

THE giant Saxifrages of our gardens are so variously beautiful and handsome at all seasons of the year, that the wonder is they are not even more popular than they now are in all good gardens. From all the other Saxifrages they are known by their massive size and breadth of leafage, while, as a general rule, they are of ever-green habit, and so are effective as hardy foliage plants at all times. Most of them are strikingly beautiful when in blossom during the earlier months of spring. Now and then, it is true, their flowers become nipped in the bud by spring frosts; but even if this occasionally happens, general average results are more than enough to justify their culture. Besides, it is so easy to pot up the plants in autumn and give them the shelter of a cold frame or an awning of mats, since plants so treated bloom freely and form very handsome objects for cool greenhouse or conservatory decoration.

Some large specimens in pots or tubs were very much admired here last spring after the show of Chrysanthemums was over, and this year we hope for even finer results, as the plants are so much better established, their great Ficus-like leafage having quite concealed the receptacles in which the plants are growing. One of the best for this kind of culture is *M. crassifolia*, which produces large clusters of its peach or almond-tinted blossoms on tall stalks, its fragrance on a warm day being like that of Hawthorn or May.

Another very fine variety is *M. cordifolia purpurea*, which bears its pendulous bell-shaped flowers on vivid red scapes 18 inches or 2 feet in height, the individual blossoms being darker in colour than those of *M. crassifolia*.

Other very fine species are *M. purpurascens*, *M. Stracheyi*, *M. cordifolia*, and *M. ciliata*, the last producing very large hairy leaves, but it is the most tender species of the whole group, and its foliage succumbs to the first sharp frosts of winter. Its flowers are whitish with a rosy red centre, and very distinct and effective in warm sheltered localities under cold frame culture in pots or tubs, as above recommended.

The following is a list of the species and varieties as given in books:—

	Name.	Habitat.	Colour.	Date of introduction
1	<i>Megasea cordifolia</i>	Siberia	purple-rose	1779
1a	<i>M. c. purpurea</i>	Garden origin	purple	1879
2	<i>M. crassifolia</i>	Garden origin	almond-rose	1765
3	<i>M. ligulata</i>	Nepaul	rosy white	1821
3a	<i>M. l. ciliata</i>	Nepaul		
		and Kumaon	white and rose	1821
4	<i>M. purpurascens</i>	Himalayas	purple	1850
5	<i>M. Stracheyi</i>	W. Himalayas	pinkish	1851
5a	<i>M. S. alba</i>	W. Himalayas	whitish	1851
5b	<i>M. S. Milesi</i>	Garden origin	white and rose	1872
6	<i>M. hybrida splendens</i>	Garden origin	purple	?1885

It does not appear to be generally known

that numerous hybrids have been reared in this section of Saxifrage from time to time. One of the first which became popular in London nurseries about ten years ago is the seedling from *M. cordifolia*, now known in the trade as *M. cordifolia purpurea*, a noble plant in its way, and very luxuriant as seen at its best. *M. Milesi* is dwarf growing, and nearly if not quite deciduous, its presumed parentage being *M. ciliata* crossed with pollen of *M. Stracheyi*. As seen in its early bud stage of blossoming it is a very distinct and beautiful thing, and is very lovely as grown in pots in a cold house or sunny frame, or as covered with a hand-light ere its flowers expand. Its scapes are so short



Megasea Stracheyi.

that its rose and white flowers are apt to be splashed and spoiled by rains unless protected as above.

A very varied and robust series of hybrid Megaseas is that reared some years ago by Mr. Thos. Smith, of Newry. They are the result of reciprocal crosses between *M. cordifolia* × *M. purpurascens*, and possess in some degree the good qualities of both parents. The plants are all robust, although varying much in colour of flower and in stature. *M. hybrida splendens* is one of the finest in the group, but the following named kinds are also very remarkable in habit and leafage, as also in colour. Mr. Smith told me of a curious result attending his hybridisation of these species with each other. After

fertilising *M. cordifolia* with pollen of *M. purpurascens*, the seed-bearing scape suddenly shot up to a height of nearly 3 feet, or about twice its usual height when unfertilised. The scapes of *M. purpurascens* also lengthened considerably after fertilisation, but not so markedly as did those of *M. cordifolia*.

M. cordifolia × *purpurascens* var. *Brilliant*.—Leaves large, richly tinted in autumn and winter; flowers purple; calyces and pedicels crimson; fine.

M. cordifolia × *purpurascens* var. *Campana*.—Very neat dwarf crowded foliage; scape 1½ feet, with bell-shaped head of rosy lilac flowers.

M. cordifolia × *purpurascens* var. *Corrugata*.—Dwarf habit; large rough leaves; flowers pink.

M. cordifolia × *purpurascens* var. *Distinction*.—Dwarf crowded habit, with enormous head of pale pink flowers.

M. cordifolia × *purpurascens* var. *Nana*.—A miniature of *hybrida splendens*.

M. cordifolia × *purpurascens* var. *Progress*.—A free growing plant, with tall scapes of rosy purple; bell-shaped blossoms, which are 1½ inches across; extra fine.

M. cordifolia × *purpurascens* var. *Sturdy*.—Compact habit, with short stout scape of rose-coloured flowers.

One great charm of these leafy Rockfoils is their rich and vivid autumnal and winter colouring. *M. Stracheyi* and *M. purpurascens* are especially rich and lovely in this way, and many of Mr. Smith's hybrids are remarkably showy in this way when planted in exposed positions. On rockeries when planted with other fine-leaved plants they show to the best advantage, some having leaves suffused with crimson, red, and soft yellow, while others are of the most vivid colour—crimson and brown—not at all easy to describe in words, and but few would believe the brush records of the painter who should essay to represent a well-planted group of these Megaseas at their best. In conclusion, I may say we have here a group of fine foliage and flowering plants worthy of every attention on the part of the cultivator and hybridiser, for we do not believe that the hybrids now known, fine as they undoubtedly are, will remain long unsurpassed now that it is seen that the species and varieties seed so freely and give such good results when judiciously crossed with each other. The result promises to be a group of plants remarkably free from all cultural difficulties—plants that a cottager may grow in his garden, or a townsman in his window boxes, and which are, nevertheless, noble enough to be worthy of care and attention in the garden of a queen.

F. W. BURBIDGE.

New Sweet Peas.—On two occasions during the present summer Mr. Henry Eckford, now of Wem, Salop, has submitted for the consideration of the floral committee of the Royal Horticultural Society flowers of some of his new varieties of Sweet Peas. Unfortunately, they are rarely seen to the best advantage, for whether sent by post or by rail the flowers become knocked about, and disarranged petals neutralise the effect of bright colours, and they are in consequence rarely seen to the best advantage. It should be stated that in the production of new varieties Mr. Eckford has not trusted to mere chance seedlings, as that would be to a large extent a waste of time and energy, as certain varieties of Sweet Peas are known to reproduce themselves from seed, and therefore but little variety is secured from that source. Mr. Eckford carefully fertilises the best and most distinct sorts with pollen from others having some desirable quality of size or colour, and in this way he has obtained breaks showing much distinctness and novelty of colour, which the Royal Horticultural and other societies have recognised by awarding him certificates of merit. The following varieties are to be put into commerce during the coming season: Captain of the Blues, the most perfect

blue Sweet Pea yet introduced, the standards bright purple-blue and the wings pale blue, a very fine and distinct variety; Countess of Radnor, mauve standards, the wings pale soft mauve, large and distinct; Empress of India, rosy purple standards and white wings, very fine and attractive; Mrs. Gladstone, delicate pink standards, blush wings with slight edging of pink, very pretty and pleasing; Miss Hunt, pale carmine, salmon standards, and soft purplish lilac wings, a novel variety; Primrose, a near approach to a yellow Sweet Pea, leaving much, however, yet to be desired in the way of depth of colour. Primrose is of a pale primrose-yellow colour, and is certainly a very distinct and novel variety; and Purple Prince, maroon standards, shaded with bronzy and purple-blue wings, also a very fine and distinct flower.—R. D.

AUTUMN-FLOWERING PLANTS AND BULBS AT HAARLEM.

A GREAT many rare and beautiful bulbs and plants have been in flower here during the last two months; some are still expanding their beauties in the bright autumn sun, whilst others are faded and gone. *Tigridia Pringlei*, lately figured in the *Gartenflora*, will be found a very useful addition to this class of brilliant flowered early autumn bulbs. The blooms, though not so large as those of the ordinary *T. pavonia*, possess a peculiarly attractive appearance; it is a very distinct and almost hardy species. There is yet in store for lovers of this genus of bulbs a very interesting novelty from Mexico, which I hope to flower next season. It is figured in *Garden and Forest* under the name of *T. baccifera*, and is said to produce very distinct, violet-coloured flowers. The most conspicuous objects, however, are, of course, the gorgeous *Kniphofias*, or *Tritomas*, as they are commonly called. It is true that the range of colours is a comparatively narrow one among this class of plants, red and orange in its various shades being the chief colours, yet how exceedingly bright do they make the autumn garden. Lately I heard some complaints about the lovely *K. Leichtlini* not being quite hardy in England. Undoubtedly this was due to the unfavourable nature of the ground used, as with us on our deep, sandy soil this species grows and increases with the greatest freedom. It is very peculiar that the flowers of *K. Leichtlini*, which are of a brownish red with protruding yellow stamens, always open from the top of the spike, which is just the reverse of that commonly seen. Among other varieties none beats the gorgeous *K. Uvaria grandis*; it rises to a height of some 7 feet, and presents a truly grand sight. A little while ago the attention of visitors to my garden was captivated by a beautiful series of some fifteen new varieties of *Gladioli*, the results of a cross between the large-flowered hardy Cape species, *G. Saundersi*, and *G. gandavensis*. Some of these had very large flowers arranged in huge spikes, others, though smaller, possessing very vivid colours. Being quite hardy and increasing fast enough, I hope the time will soon come when these acquisitions will be found in many a garden. In a shady, moist spot have been flowering the very interesting *Anemonopsis macrophylla*, with white and blue flowers; also the *Spiræa-like* *Cimicifuga dahurica*, a beautiful hardy plant about 5 feet in height, with a long, loose, branching plume of white flowers. *Polygonum sphaerostachyum* is flowering for the second time, the bright, closely packed carmine flower-spikes being all the more attractive, as out-of-door flowers are beginning to become a little scarce. Another novel hardy bulb is the autumn-flowering *Amaryllis Halli*, allusion to which was first made in your columns at p. 268 of last year's issue. This, an introduction from Northern China, is a quite hardy bulb, producing its flower-spike in autumn; the colour, though certainly not brilliant, is attractive by its distinct bluish tinge. I much doubt whether this has ever been flowered in England. The genus *Crocus* lately having received so many additions is commencing to form quite a special feature in the early autumn garden. To my mind, the fine old *C. speciosus* still holds a

very prominent place, though such beauties as *C. zonatus*, *Boryi*, *iridiflorus majus*, &c., are promising to become serious rivals. Of other autumn Crocuses none excel the Tulip-like *Colchicum speciosum* and the fine double white variety of the ordinary Meadow Saffron. A good deal more might also be written in praise of *Nerines* and many other beautiful autumn-flowering plants, but as your space will be limited, I hope to refer to them another time.

C. G. VAN TUBERGEN, JUNR.

LILIES AT WEYBRIDGE.

TO THE EDITOR OF THE GARDEN.

SIR,—*Lilium speciosum* (*lancifolium*) is now in its full beauty, rubrum, roseum, and album, and being the last of the garden Lilies, the season will soon be over, and the time has come for my usual note on what it has been here. Most species of Lilies have been unusually fine. I suppose the warm dry season has suited them. *L. Browni* was especially fine; one clump had twenty-three flowers out at once, the stems all about the same height, and some with three flowers. *L. Hansonii* was very strong, our highest stem was 6 feet 1 inch. *L. Szovitzianum* fine, as usual. *L. tenuifolium* about the average. *L. candidum simplex* in some positions very good, in others a failure. *L. Humboldtii* much finer than usual. *L. pardalinum* and its varieties very fine, and yielding more seed than usual. *L. giganteum* average, but its small relative *L. cordifolium* in a good many positions especially fine and seeding freely. *L. Martagon dalmaticum* of several shades of colour fine. *L. tigrinum Fortunei*, *splendens fl.-pl.*, and *jucundum* average. *L. Batemanniae* and *Leichtlini* fair. *L. Parryi* not good; evidently I have not yet the right place for it. *L. polyphyllum* average. *L. superbum* in different situations all especially fine. I never before realised its full beauty so much; it seemed to strike the visitors to our garden very much. It certainly is a most graceful Lily, and with its stems of from 8 feet to 9 feet (our highest was 9 feet 9 inches) waving in the gentle breeze that finds its way into our wood, with the green background of the trees, was very beautiful. The flowers vary much in colouring and size; it has seeded much more freely than usual. The season being early, owing to the warm summer, has exactly suited *L. speciosum*; in the coolest, shadiest positions it is already fully out, and the flowers are unusually fine. *L. auratum* and varieties have been fine. We had at Wisley a plant of *L. auratum macranthum* of which the base of the stem carefully measured was 4 inches round; the height was 7 feet 8 inches. This variety even strongly grown is certainly shorter and thicker than the type, as one of the latter in our Weybridge wood garden is just 11 feet high and only 3½ inches round at the base, while another clump of three has stems between 10 feet and 11 feet high, with less diameters. I still think that a really fine specimen of the type *L. auratum* is quite as beautiful in its flower, and, in addition, more graceful than the varieties *macranthum* or *platyphyllum* or *platypetalum*, and this year in a hill Lily bed we had good means of comparison. In one compartment was the fine *L. a. macranthum* mentioned above. When visitors got to this they said it was the finest Lily they had ever seen, but a little farther on, higher up, was a single plant of the type, a really perfect specimen; this they admitted was still more beautiful.

Our hill bed of *L. auratum* was this year more thoroughly satisfactory than the plantation in the wood. I think this last was somewhat

injured by the cold wet of last year. However, it had many beautiful flowers. When Lilies are planted near bushes (*Rhododendrons* excepted) or trees, unless the soil is frequently renewed, the plants will gradually dwindle away. In the garden here we have tried to avoid this by sinking a paraffin cask with the bottom out, filling up with Lily soil and planting bulbs of *Lilium auratum macranthum* in it. These have bloomed beautifully this year, but, of course, several years will be necessary to tell whether the object will be attained. I mean this autumn to try some more casks. Since this note was begun the late frost has injured the flowers of *L. speciosum* in the hill beds, while those in the wood have escaped. GEORGE F. WILSON.

Heathbank, W. gloucester Heath.

* * With this was sent a head of *Lilium auratum macranthum*, some of the blooms of which measured fully 11 inches across. The stem was bearing four open flowers and three buds.—ED.

FLOWER GARDEN NOTES.

EARLY FROSTS AND HARDY FLOWERS.—On the morning of the 17th inst. the thermometer registered 5° of frost. Happily, plants were very dry, and beyond the destruction of a few tops of dwarf French Beans nothing has suffered, and flowers are gay as ever. Tender bedders, however, have now but a short season of beauty; hence one naturally turns with increased regard to hardy flowers which we may hope to have in good condition for several weeks yet, and amongst these there are none that at present rival the perennial Asters, more commonly called Michaelmas Daisies. I am aware that some gardeners regard Asters as weedy, but the reason is that they have not troubled about procuring the best varieties. I gave the names of a few in a note on these flowers in last week's GARDEN, and should not have returned to the subject had I not forgotten to say how splendidly tall vases can be dressed by using long stems of these plants, and not only that, I have known the flowers remain good for quite three weeks after being cut; of course, the water in which they are placed requires to be changed twice a week. The more lightly, shall I say carelessly, they are arranged in the vases the handsomer they look, because their flowers are displayed to the best advantage; in fact they (the flowers) reflex more from being placed indoors. Altogether my opinion of the species generally is that for doing noble service in a variety of ways during the months of September and October they have few if any rivals.

EARLY-FLOWERING CHRYSANTHEMUMS.—Much as I favour the perennial Asters, I do not forget how useful early-flowering Chrysanthemums are from August till severe frost cuts them down, and I have known this not to occur till almost the end of November. Still, there is the foreboding that cruel frost may any night cut them off, and in this respect the Asters have the advantage. I would, however, bespeak a place in every garden for this class of Chrysanthemum. We have now grown them extensively for four seasons, and have used them both in the summer bedding arrangements, in plots by themselves with a view to use as cut flowers, and also in groups and single plants amongst hardy perennials, and in this latter position they begin to bloom (early in August) at a time when there is rather a dearth of herbaceous flowers. They flower too late to be of much service in the summer bedding arrangements, except for planting amongst other earlier-flowering subjects in large beds containing mixtures of plants, when their late season of flowering is an advantage. The following kinds are the finest of the several varieties that I have as yet made trial of. I name them in the order of flowering. The earliest is a deep yellow kind named *Précocité*; *nanum*, creamy-white; *Mme. Jolivart*, white, rose-tinted; *St. Mary*, white; *Mme. Desgrange*, yellowish-white; *Gustav Wermig*, deep yellow; *Roi des Précoces*, crimson; and *La Vierge*, pure white.

GREAT OX-EYE (*Pyrethrum uliginosum*).—This plant in good soil grows fully 6 feet high, and the flowers are white, large in size, and continue in perfection for a long time. At the present time the plants of it are the most conspicuous objects in the herbaceous garden. It seeds freely, and we have plants of varying size that have been thus raised, not the least remarkable feature being that whilst some of the seedling plants are alike in size and growth, the flowers are not the same on all, some being as large as are the flowers on old-established plants, and others as small as those of ordinary *Marguerites*. I am curious to know whether this variation in size will prove permanent. Should such prove to be the case, the raising of seedling plants will not be desirable, and indeed it is unnecessary, because by division of roots plants may be increased to any extent.

SUMMER CLIMBERS FOR LOW WALLS.—I recently saw a trellis fixed to a low wall in the garden of Mr. B. W. Currie, Coombe Warren, Kingston Hill, beautifully furnished. I cannot describe its beauty; it must be seen. I can only note the way it is planted. It is at the end of the terrace garden, and forms, in fact, the boundary to the terrace, and is seen from all parts of it, as also from the windows at the south side of the mansion. The plants are Ivy-leaved Pelargoniums with green and variegated foliage, and all the colours of flowers that section contains from nearly white to bright crimson. The shoots of all the varieties are interwoven in the most careless, yet methodical manner, and the way a bright-coloured truss of blossom and its nearly white congener is made to appear, as if they were both on one and the same stem, is by no means the least meritorious feature in the training and tying of the growths to the trellis. Variegated foliage *Fuchsias*—*Sunray* and *Golden Fleece*—are intermixed with the Pelargoniums, and make a good base or foundation for the Pelargonium blossoms. If they could be made to grow in the same free manner as the Pelargoniums, their handsome variegated foliage might add refinement to the present gaiety. I say "might" because I am doubtful, regarding, as I certainly do, the present arrangement, training, and beauty as unique.

SHRUB WALLS.—This is the best term I can use in regard to the furnishing of two walls in the same garden. No. 1 is that of a low wall supporting the terrace garden. Ivy, Clematis, and creepers of the ordinary type seem to have to take a second place at Coombe Warren, something less common, in fact something different to other gardens, appearing to be the order of the day. The wall is hidden with the green and golden variegated Yews; the panels or bays are covered with the green, and the piers or buttresses with the golden variegated Yew. The whole is kept cut in true to the wall, but there is no shaving or excessive shearing, but all look most natural. The buttresses of a wall of much greater height, and which, being conspicuous objects from the pleasure grounds, it was desirable to conceal, are all planted with the Golden Yew. They are beautiful in the extreme, and this is true of the entire garden. If there be a fault, it is that everything is too neat and trim.

W. W.

SHORT NOTES.—FLOWER.

Golden Stonecrop (*Sedum aureum*) is used as an edging to one of the walks in the garden at Polesden Lacy, Dorking. Flints or large stones are first put down, and the Stonecrop allowed to run over them. It makes a pretty edging, and should be used more for this purpose.

Annual flowers.—It is a mistake to suppose annuals only last a few weeks. In the middle of the present month, Linums, Cornflowers, *Burtonia aurea*, Everlastings, and many other kinds were in perfection. The secret is to pick off the decaying flowers to prevent seeds forming.

Lavender and Tritomas.—These are planted together at Polesden Lacy. There is a long line of them on the turf, and the clumps have not been disturbed for twenty years. The glimmer of blue against the rich scarlet is singularly effective.

Verbena venosa.—This was flowering well a few days ago in the garden at Polesden Lacy, Dork-

ing. It is a thoroughly hardy plant, and stands both excessive heat and wet. Now that the bedding-out rage is over, we frequently see such old favourites as *V. venosa*.

China Asters.—The trial of these in the Royal Horticultural Society's Gardens at Chiswick shows what rubbish there is in the German strain. There are few good selections, the colours mixed, and the plants all heights. A rigid "roguing" is essential.

Ivy-leaved Sowbread (*Cyclamen hederæfolium*) is beautiful now in Messrs. Paul and Son's Broxbourne Nursery. There are large clumps of it covered with bloom. Nothing is prettier than colonies of this Sowbread under trees, or here and there on the rockery.

STOVE AND GREENHOUSE.

TUBEROUS BEGONIAS.

ON seeing in THE GARDEN of the 17th inst. an article by my friend Mr. Burbidge, headed "Beautiful Begonias," I hoped that these invaluable summer bedders had at last gained his very able advocacy, and were about to receive from him a full, though somewhat tardy recognition of their merits, which hope his article, I am afraid, scarcely justified. He mercifully abstains from attacking them with that most insidious of all weapons, faint praise, but he bestows his encomiums in such a guarded, qualified—I had almost said apologetic—way, that any lover of Begonias must, I think, feel that, despite a few laudatory comments, justice has scarcely been done to Begonias.

I shall, no doubt, at once stamp myself as belonging to the blindest class of "abject worshippers," but I must confess that, quite apart from surroundings, there are many grounds on which it appears to me that Begonias claim at least tolerant consideration.

Few flowers offer a wider, more varied, or more beautiful range of colour than Begonias. They give us white, cream, all shades of yellow, orange, pink, rose, scarlet, and crimson. The form of the flower, the foliage, and the habit of growth are all excellent in the best single forms—erecta gigantea type, such as *Rubens*, *Eclairer*, *Hoche*, *La Fiancée*, *Evenement*, *Charlemagne*, and *Tour Eiffel*. These varieties are, to my mind, quite unapproached by any others in brilliancy of colour or size of flower. Begonias have further the supreme merit of blooming continuously throughout the summer, and of being uninjured by the most persistent downpours of rain.

I do not myself consider that the doubles, though they have attained an enormous size, have, with a few exceptions, reached the same degree of perfection as the singles. To my mind, by far the best double is one which Mr. Burbidge does not mention—*Triomphe de Nancy*. No stooping, kneeling, nor artificial elevation of the plant is required to enable us to admire its beautiful, large, soft, full, pale canary blossoms, which are borne on stiff stalks, and attract attention at a great distance. In the same category, as being perfectly erect-stemmed and requiring no support of any kind, may be placed the splendid, large Hollyhock-like, deep rosy scarlet *Docteur Feltz*, the large, handsome salmon *Miss White*, the beautiful pale yellow *Mme. Pfitzer*, the light pink *Alice Crousse*, the deep rose *Notaire Dubled*, and the bright orange-scarlet *Jacques Dusseau*. In these new varieties vast improvements have been made on the older ones. I saw them a short time ago flowering in great perfection and beauty at Belgrove, where they form a part of Mr. Gumbleton's unique and exquisite collection of Begonias. I have not found in the doubles that unsatisfactory Poppy-like trait of which they

are accused—falling as soon as touched. All the varieties of stiffer habit will stand a fair amount even of rough handling, provided the blooms are not very old. The smaller doubles find much favour as button-holes, which does not indicate special fugacity.

Begonias have the merits of being exceptionally useful and accommodating, and of being able to be grown altogether without glass. I have plants now about 3 feet high as sturdy as little shrubs, and quite covered with bloom, which never receive any glass protection. They are stored in a shed during winter. When starting in April they are planted in a cold frame, where they are sheltered only by mats, and from which they are moved to their summer quarters when ready.

No plants are more accommodating than Be-

AN UNHEATED GREENHOUSE.

THE value of a "well-built" unheated greenhouse is considerable in every garden. The expression "well-built" is used here advisedly, for if an unheated structure of the kind in question is badly put together with half-rotten materials, as is the case sometimes, and it has, in addition to its other shortcomings, a leaky roof and inadequate means of ventilation, then it is a nuisance instead of being, as it should be, a most valuable adjunct to any garden, either large or small. The importance of a sound and water-tight roof cannot be over-estimated; nothing is so detrimental to the well-being of any plant as to stand under a covering from which, whenever it rains or after a fall of snow, there is a constant dripping of cold water. The means of ventilation should also be ample, so

it can be used as a receptacle or show-house for plants brought in from other houses in flower; and many Ferns, Palms, Aspidistras, &c., can be arranged therein in effective groups, as is well shown in the accompanying illustration. The golden-rayed Lily, *Lilium auratum*, is one of the best plants for such a structure. In the autumn, when the tender plants are returned to their warmer winter quarters, it is a most excellent place in which to stand Chrysanthemums, and, after these are over, it will form one of the best of all places in which to store Roses in pots, shrubs for forcing, Violets in pots, Auriculas, Carnations, and any other hardy plant in a pot that is better for a little protection in winter. In the spring, when these hardy plants have been drafted into warmer houses to bring them into flower, or, in some cases, into pits and frames, then, if so desired, preparations can be made for growing a crop of Tomatoes during the summer, provided the house is not wanted for flowering and fine-foliaged plants. In a hot summer season I have seen very fine crops of Cucumbers grown in an unheated house; but, generally speaking, the Tomato is the best fruit crop that can be grown in such a structure. It is not pretended that this list of uses exhausts by any means the capabilities of a well-built unheated greenhouse, but only to call attention to the real value of such a structure in any garden, if managed with ordinary skill. If the house is used for the display of flowering plants, Ferns, &c., in the summer, then some means must be at hand to provide roof shade in hot weather. For this purpose nothing can be better than scrim canvas blinds fixed to rollers, by which means they can be easily let down or drawn up.

B.



Lilium auratum grouped with foliaged plants.

gonias; they succeed under widely varying modes of culture, they do not resent being moved even when in full bloom, so that whenever a dull corner wants enlivening or a gap occurs in the border, Begonias may be relied on to make good the deficiency.

Begonia growers will, no doubt, too, feel most grateful to Mr. Burbidge for so kindly conceding that a place ought to be found in good gardens for a couple of dozen of Begonias; they, however, would like to go a step further, and to bespeak a place for them in all gardens, and Mr. Burbidge must forgive their strange insatiability in saying, that except for the very smallest gardens his allowance would seem to border closely on starvation.

H.

that on fine mild days in winter an opportunity can be taken of admitting abundance of air to dispel damp and invigorate whatever inmates in the shape of plants the house may then contain. The unheated greenhouse may be either lean-to (which is the warmest) or span-roofed in form, and all the materials used should be good and substantial. The roof should have a rather sharp pitch, to throw off the rain, and the squares of glass should be of good size and of good quality, thus ensuring plenty of light at all times. The interior of the house may be fitted with stages or not, according to the class of plants that it is intended to mainly occupy the house with. The uses to which an unheated greenhouse can be put are many. In the summer

Isoloma hirsuta.—This, nearly allied to the *Tydeas*, is very useful for flowering at this season of the year. It is somewhat rambling in its style of growth, but if propagated frequently can by this means be induced to bloom when dwarf. The flowers are tubular in shape, about a couple of inches long, and of a bright orange-scarlet colour, the entire plant, stems, leaves, and flowers, being covered with brownish hairs, from whence the specific name is derived. It requires much the same treatment as a *Tydeas*, that is to say, an intermediate house temperature and good light soil to grow in. The young shoots strike readily if put in as cuttings, while division can also be resorted to for its increase.—H. P.

Begonia fuchsoides.—At the time of its introduction (1846) the number of Begonias in our gardens was very limited, but notwithstanding the many distinct species and garden varieties that are now in cultivation, this certainly still holds its own among the very best. Its general appearance is too well known to need any description; therefore it will be sufficient to say that while it is usually spoken of as a winter flowering species, perpetual blooming would be more appropriate, for in the temperature of a warm greenhouse it will flower nearly throughout the year. This Begonia is seen to great advantage when employed for covering a pillar, or for some such a purpose, as it branches very freely, and is of graceful habit, while the rich coloured foliage is bright and cheerful at all seasons, and serves as a setting to the red wax-like blossoms. Cuttings of it strike as readily as those of a Fuchsia, so that a large number can be speedily obtained from a single plant.—H. P.

Aphelandra chamissoniana.—This *Aphelandra* will flower at almost any season of the year, but at no time are the bright-coloured blooms more welcome than during the autumn and winter months. Unlike the majority, whose blooms are of varying shades of scarlet, the flowers of this are bright canary-yellow, while the large bracts which subtend each flower are of the same hue. The foliage of this is also very pretty, being lanceolate in shape, and marked by a broad silvery band down

the centre, the remainder of the leaf being irregularly freckled with silvery dots. All the Aphelandras are liable to run up naked at the base, and this is no exception to the rule, so in order to obtain dwarf plants it is necessary to propagate them frequently from cuttings, which are by no means difficult to strike. A number of dwarf flowering plants grouped together in a pan is a good way to show off the merits of the different Aphelandras.—H. P.

Trichinium Manglesi.—This pretty Australian Everlasting, alluded to in *THE GARDEN*, September 14 (p. 238), appears at a first glance to be far from easy to propagate, yet really such is not the case, for it can be readily increased by cuttings of the roots. A good plan is in the autumn after the flowers have lost their freshness to take any plants that are available, and turn them out of the pots, and at the same time shake off the greater portion of the soil from the roots. When this is done any of the stouter roots that can be spared without injury to the plant may be taken off, cut up into lengths of about an inch, and dibbled into pans of sandy soil at such a depth that the upper part of the root is just below the surface of the soil. They may be placed on a shelf in a greenhouse, or in a structure kept at an intermediate temperature, and during the winter must not be over-watered.—T.

MARKET GARDEN NOTES.

THE brilliant weather that has prevailed for some time has favoured the harvesting of Potatoes, Onions, and other roots, and the work of cleaning the land is now very forward. The principal work now claiming attention is the planting of early Cabbages; very large breadths of these are now being put out, the plants from sowings made early in July being in fine condition. The land for this crop receives heavy dressings of manure and deep cultivation to get it into fine friable condition, and when dry weather prevails, as at present, water-carts are brought into requisition and the plants get a good soaking directly they are planted, the object being to get them rooted as quickly as possible, as if the plants get checked in growth in any way, they are far more likely to start prematurely to seed than if over-luxuriant. The earliest plantings are cut or pulled and bunched as soon as they commence to make hearts, the price obtainable then being frequently higher than it is a few weeks later for far better samples, whilst the early clearing of the land is a great inducement to early cutting.

TOMATOES under glass, on walls, and in the open have done remarkably well this season, and seldom have I seen finer samples than are now being daily sent to market, the bright red varieties of the Perfection type being the best. The late spell of tropical weather has been a godsend to growers of this crop, as the dread disease had begun to spread rapidly after the storms and downpours of August. Drier weather, however, has checked the disease, and enormous quantities are now ripening off. Although rain is needed for growing root crops, it is not desired by Tomato growers.

LATE TURNIPS, that came up well during the showery weather that prevailed last month, have been making rapid progress, but are now in need of rain, especially where the soil is poor.

RUNNER BEANS continue to yield good crops where they have been kept closely picked and none allowed to go to seed. Most of the market garden crops of this useful vegetable are grown without any sticks, and at this time of year cover the soil well; therefore the drought does not so easily affect them. As Runner Beans are a profitable crop, they repay the application of plenty of water or liquid manure. If only a few pods are allowed to go to seed, the supply of young edible pods soon ceases. Late-sown crops of runners are a speciality with some market growers, who sow about the end of May, and thereby get them into full bearing just as the early crops are getting exhausted. In favourable autumns by this method of culture good results are often obtained.

FRUIT-PICKING AND MARKETING are going on

briskly. The supply of all early sorts of Apples is good. Pears are not so fine as in some seasons, probably owing to the late spring. Only second-rate sorts are grown in quantity for market. Damsons are now plentiful, and realise good prices. Blackberries, which promise to be an abundant crop, form an important item in the late fruit supply, owing to the great extent of common and Crown lands in the neighbourhood. The cultivated American sorts, however, do not obtain much favour.

Gosport.

J. GROOM.

PROPAGATING.

BORDER CARNATIONS FROM CUTTINGS.—The propagation of border Carnations need not be confined to layering, especially if there is room for growing on a few plants in a little warmth early in the spring. By so doing an additional advantage will be gained, as plants so treated will come into bloom before those in the open ground. My experience is chiefly with the self-coloured varieties, and, of course, these are the most valuable for cutting from. For the above purpose, some of the strongest plants should be selected from those obtained from layering, and these should now be ready for potting. If the plants are well rooted, they may be potted into 5-inch pots at once, but unless they come up with good roots, it is better to put them into smaller pots, and pot them on after they are well rooted. The plants will only require the protection of a cold pit during the winter, and plenty of air must be given when the weather is favourable. Early in February they may be removed to a house where there is a little artificial heat, but must have a light open position and plenty of air. Under these conditions most of the sorts will soon begin to make side shoots, and if the plants show a disposition to run away to bloom without branching out, they must be stopped. The cuttings (or pipings, as they are usually called) should be taken as soon as they are of sufficient length to get them off without damaging the stems. It is sometimes recommended to pull them off with a heel, but this damages the plants, and is of no advantage. Cuttings pulled out or cut off a joint or two from the stem will root equally well, besides which, a second batch of cuttings may be obtained from the same plants later on. The cutting pots should be prepared beforehand; plenty of drainage should be used, and the pots filled moderately firm with light sandy soil, and surfaced over with a little clean sand. After the cuttings are taken off they should be put in and well watered with as little delay as possible. The best place to root them in is where there is a moderate bottom heat. They should be removed from the close pit as soon as sufficiently rooted and gradually hardened off. The plants will require to be kept close for a short time after they are potted off, but as soon as established they may be placed out of doors, and later on may be planted out. They will then make much larger plants and produce more bloom than those obtained from layers in the autumn. If propagated early in the spring, some of the varieties will flower the following autumn, or if this is not desired, the plants may be stopped, and this will ensure more flower-stems for the spring flowering. I have heard it suggested that Carnations propagated in heat will not prove so hardy as those propagated in the open ground, but I believe that this is not the case. On the contrary, provided they are planted out early they get well established, and are altogether more satisfactory than plants propagated late in the summer. F. H.

Leucodendron argenteum.—I have received a packet of seeds from the Cape. One is *Leucodendron argenteum*, or Silver Tree. The seeds are attached to a silky kind of inflorescence by a small filament. What is the history of this tree? What chance is there of its surviving if raised from seed? Please to give me what information you can.—JOHN PUGET (Col.), *Poynter's Grove, Totteridge, Herts.*

The evils of grafting.—Mr. Miller's communication on the method of "air-layering" adopted in

China and Japan is most interesting, but he has omitted one rather important point, namely, the time of year when the operation should be performed. Also, how long a time must elapse before the roots are sufficiently advanced to permit of separating the scion from its parent stem.—B. D. KNOX, *Reading.*

SOCIETIES AND EXHIBITIONS.

VEGETABLE CONFERENCE.

IF a conference on vegetables has little interest to the public generally, such is not the case with the best gardeners and nurserymen of the British Isles, many of whom brought their produce to the Chiswick Conference on Tuesday. This gathering was thoroughly cosmopolitan. Gardeners came from Scotland, Ireland, Wales, and all parts of England, and made up an exhibition of vegetables large in extent, instructive as showing the favourite types, and useful for the opportunity given of classifying the best varieties in the several sections. It was an excellent display considering the hurried arrangements, and much practical information must be the result, as in the Apple and Pear congresses. The exhibition itself filled a large tent and the best portion of the conservatory. The first day (Tuesday) was devoted to examining the various exhibits to determine the best kinds and prevent gardeners from growing varieties that are distinct in name only, while certificates of merit were given to exhibits that showed special culture. The selection of the finest types was an important part of the business. Many varieties are grown that are not distinct, and even if new, have no merit. To prevent this and set things on a rational basis is one of the objects of the conference, and if it accomplishes this it will not have been held in vain. There are almost as many synonyms in vegetables as in Apples and Pears; big coarse types are recommended in which quality is absent, and three varieties grown where one would suffice. "Big" vegetables, as could be seen from the large display, are preferred to smaller ones, which, however, are of the best quality, and in no class was this more seen than in that for Cabbages. Many of the Beets were coarse and rough, also Parsnips, runner Beans, Onions, and Brussels Sprouts. "Size" has a strange attraction, but it is gained by the sacrifice of quality, as in fruits and flowers. At a glance it could be seen that no better year could have been chosen than this for such an exhibition. This is an ideal vegetable year in most parts of the British Isles, and in very few classes were there exhibits of poor growth. Almost all were exceedingly fine, especially in some of the Potato classes. The second day was given to the opening address by Mr. H. J. Veitch, chairman of the committee; presentation by the several sub-committees of reports of selections made; a paper on the "Cultivation of Asparagus," by Mr. Shirley Hibberd; and on "Winter Salads," by Mr. Norman, of Hatfield House Gardens. The last day was confined to papers by Mr. J. Wright on "Food of Vegetables"; Improvements amongst Peas, by Mr. Laxton, Bedford; "Potatoes," by Mr. A. Dean; and "Vegetable Supplies throughout the Year," by Mr. J. Smith, of Mentmore. The exhibition was split up into six sections, dealing with green vegetables, fruits, and pulse, tubers and bulbs, tap-roots, saladings, and miscellaneous, while there were eighty-four classes in all, every one well filled except in the case of vegetables comparatively little used. It says much for the interest in vegetables that such a representative exhibition should have been brought together without the offering of prizes. There were no awards of any kinds with the exception of certificates to those exhibits deemed worthy of the distinction. Every exhibit was distinctly labelled, but it is to be regretted that more did not use the proper cards for the purpose, so planned that information could be given as to points of culture. Such information is always valuable. The entries numbered between 500 and 600, and there were about 100 exhibitors.

There was a great display of green vegetables,

and four classes set apart for Cabbages, which were shown almost as largely as any vegetable. Messrs. J. Veitch and Sons had a large collection, in which were such well-known varieties as Rosette Colewort, Little Pixie, Hardy Green Colewort, and Couve Tronchuda, all varieties of good quality; while they had heads of such large types as Early Flat White and Enfield Market Cabbages. A handsome variety is Christmas Drumhead, not of enormous size, and with leaves of a rich glaucous colour. Messrs. Vilmorin-Andrieux and Co., Paris, sent a large collection also, comprising such kinds as St. John's Day, Early Drumhead, Ox-heart Early, Early Etampes. Matchless variety was often shown, and good samples came from Mr. J. Burnett, The Deepdene Gardens, Dorking. Those named above, with Ellam's Dwarf Imperial, were the varieties shown most often. Mr. W. Wildsmith, Heckfield Gardens; Messrs. Bunyard and Co., Maidstone; Messrs. Harrison and Sons, of Leicester; and Mr. W. Poupart, Twickenham, all exhibited well. The last of those mentioned had vegetables of market value, and staged as a good market Cabbage the Hardy Green Colewort. There were the same exhibitors, with the addition of Messrs. Dobbie and Co., Rothesay, in the class for Red Dutch Cabbage. Admirable heads were those sent by the Scotch nurserymen, the hearts solid, not unduly large, and of rich colour. There was just the same extensive show of Savoys. Messrs. J. Veitch and Sons had a good selection of kinds. The best are undoubtedly the Early Vienna, a small-hearted variety, but of excellent flavour when cooked, far better than the big rough types, that are good for quantity only. Early Paris runs the Dwarf Ulm, one of the best of the Savoys, too closely; it should not have a distinct name. The Dwarf Ulm was exhibited as largely as any, and this showed the wisdom of gardeners. Though many years old, it is still the best of its kind, and will long remain so. The Drumhead was often exhibited, also the Dwarf Green Curled, which came in fine condition from Messrs. Bunyard & Co. Gilbert's Universal was another sort shown largely, but the stocks mixed; it is a type that deserves to be kept true. Mr. Wythes, of Syon House Gardens, Isleworth, who was a frequent exhibitor, showed an excellent collection, and Mr. W. Chettleburgh, Worstead House, Norwich, also exhibited largely, also Messrs. Oakshott and Millard, of Reading. Of Cauliflowers, almost the only variety exhibited was Veitch's Autumn Giant, and the best samples were those from Mr. John Lambert, gardener to Colonel Wingfield, Shrewsbury; the heads were as white as snow and not too large. Michaelmas White was also exhibited, but the colour of the heads shown was not so pure. Spinach was well exhibited, and the varieties were confined to the Prickly or Winter, Summer, Viroflay, large, broad leaves of a deep green colour, New Zealand, and the Round-leaved. Globe Artichokes call for little comment. A small green variety was shown by Mr. R. Smith, and Mr. Poupart, market gardener, had a large kind, the bracts of great width, and deep green.

A large space was filled with Brussels Sprouts, and there were three classes set apart for them. Messrs. Veitch and Sons had a collection of plants, such well-known varieties as The Wroxton, Exhibition, and Large Imported being exhibited. A good kind with small sprouts is Half Dwarf Paris Market, and the same firm had a large, coarse-sprouted kind known as President Carnot. Messrs. H. Deverill and Co. exhibited well in this class, and splendid sprouts of The Aigburth, Veitch's Exhibition, came from Mr. Wythes. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, showed well here. There is little variety in Borecoles or Kales, and the kinds shown were the Cottager's, Dwarf Curled, and seedsmen's selections. Culzean Castle is a green-curved Kale that was sent by Mr. H. Deverill; it is densely curled, of good colour, and large.

FRUITS AND PULSE.—These had a distinct section. They were shown in the conservatory and made gay blocks of colour, especially the Vegetable Marrows or Gourds, which were exhibited largely. A collection of edible Vegetable Marrows and Gourds came from the society's garden,

and another large collection of varieties from Mr. C. Osman, South Metropolitan District Schools, Sutton. The grotesque shapes, variety and colour give this class a special ornamental value. In the collection from Messrs. Vilmorin-Andrieux one kind of remarkable brilliancy was Turban small China Squash. The most useful classes were for six varieties of Vegetable Marrows where we could see the best defined types. Messrs. Oakshott and Millard had Moore's Vegetable Cream and White Bush; Messrs. G. Bunyard, Pen-y-byd; and Messrs. J. Veitch and Sons the varieties named above, and Long Green, Hibberd's Marrow, and Long White. Mr. R. Dean had six kinds in favour with market growers; they were Perfection, Gooseberry Green, Long Green Ribbed, Long Mottled White, Long Smooth Mottled, and Long White Ribbed. The largest specimen of any Gourd was that from the society's own garden. A seedling Marrow, called Anglo-Indian, was shown by Mr. E. Chadwick, Hanger Hill House, Ealing; it is a cross between Moore's Cream and a small Indian Marrow. It is handsome in appearance, but of its quality we know nothing. A new fruit, something like that of the Egg Plant, came from the society's garden, Chiswick, and the Melon Pear from Mr. F. Fuller. The Capsicums from Messrs. Vilmorin-Andrieux and Co. were remarkably fine. The sunny climate of France develops the fruits to a larger size than here. Golden King (rich yellow), Pepper Improved (scarlet), and Sweet Spanish Mammoth were the most striking, the fruits large, richly coloured, bell-shape, and several borne on the plant. Mr. J. Willard, Holly Lodge, Highgate, had Capsicum Cayenne, and Mr. Divers, Chilles of the long red type. There were several exhibits of Gherkins, and an excellent collection of ridge varieties growing in the open ground from Messrs. G. Bunyard and Co. The finest Cucumbers were those from Mr. T. Lockie, who showed his Lockie's Perfection variety. Excellent samples of this were shown very early in the year at the Crystal Palace, and on this occasion it was in perfection, the fruit straight, smooth, not too big, and covered with bloom. Tomatoes gave rich colour, and the collection from the Chiswick Gardens the best of any. The fruits were smooth, large in size, and perfectly coloured. Perfection, President Cleveland, Tennisball, Horsford's Prelude, Advancer and Chemin were the finest of the red; and Golden Queen and Green-gage of the yellow. Messrs. Vilmorin also had a collection of fine large fruits, and collections also came from Messrs. J. Veitch and Sons and Messrs. Oakshott and Millard. Mr. R. Smith had a dish of Hathaway's Excelsior, and Mr. R. Dean a number of the best sorts. In one lot from the Chiswick Gardens was the new Chiswick Hybrid, a variety of average size, roundish, and deep red in colour; the quality is also good. The Perfection type was shown most, and the large fruits, with scarcely a break on the surface, are a great advance on the old ribbed kinds. The fruits of President Cleveland from the society's gardens were the finest we have seen for weight, colour, and finish. Peas filled a large space, and there were many excellent dishes. The varieties shown varied little; they comprised such good late kinds as Ne Plus Ultra, Veitch's Perfection, Duke of Albany, British Queen, Fortyfold, Latest of All, Sutton's Satisfaction, and Sturdy. Four dishes of great merit were those from Mr. John Lambert, the varieties being Duke of Albany, Prodigy, Telephone, and Matchless. A fine selection, including the old Champion of England and Stratagem, was sent by Mr. J. H. Goodacre, Elvaston Castle Gardens. Dwarf Beans showed fortunately little variety. Most of the exhibits were of such types as Ne Plus Ultra, Canadian Wonder, and Negro Longpod. Mr. G. Wythes had an interesting collection, in which these varieties were shown, and Sir Joseph Paxton, Negro Mammoth, Negro Longpod, Osborn's Forcing, and Syon House. Those who like large runner Beans could have had their tastes gratified by those exhibited here. Some of the specimens of Girtford Giant were over 1 foot in length, coarse and ragged. Nothing is gained by growing runner Beans to such an absurd size. It is the result of high culture, as this variety was exhibited in some

collections of quite average size, clean and smooth. Ne Plus Ultra, The Czar, Girtford Giant, Giant White, and Champion were the principal types exhibited.

TUBERS AND BULBS.—These included some of the most useful exhibits, such as Potatoes, Onions, and Turnips. The Potatoes were not so largely shown as we might have expected, but the tubers were fine. Big collections came from some of our principal seedsmen and the society's gardens. Mr. J. Hughes had splendid samples, also Mr. E. G. Wiles, Edgcote, Banbury, who had remarkably clean tubers of Mr. Bresee, Abundance, Adirondack, Reading Giant, Reading Ruby, and Edgcote Purple. Mr. J. Lye showed well. In the class for twelve varieties, Messrs. John Lambert, E. G. Wiles, and J. Hughes had admirable exhibits, fresh, clean, and without a spot of disease. Mr. W. Wildsmith exhibited six excellent dishes, also Mr. J. Lye and Mr. J. Burnett. Those from Mr. J. Hughes were amongst the best in the show. The sorts were Matchless, Sutton's Seedling, Reading Ruby, Fidler's Success, Ashleaf, and Favourite. A large collection of American kinds was shown from the Chiswick Gardens, including the Rural New Yorker, the tubers of which are very rough; it is a white round. There was a large display of seedling varieties, but as quality is the first consideration, there is no use in giving mere descriptions. As in Runner Beans, so in Onions size is aimed at. There were four classes for these, and in that for one variety, Rousham Park Hero was most often exhibited. Mr. Neal, Bampton, Oxford, showed Neal's Advancer, a handsome globular-shaped variety of large size. Giant Zittau came from Messrs. R. Veitch and Sons, Exeter, and Sandy Prize from Mr. T. Laxton. A good red type was that from Messrs. Dobbie and Co., the bulb deep crimson, firm, and of average size. Large collections came from Messrs. J. Veitch and Sons and Messrs. Deverill and Co., of Oxford, some of the bulbs weighing close upon 3 lbs. Messrs. Vilmorin, Oakshott and Millard, R. Veitch, W. Pope, G. Wythes, and J. Wallis also had large, firm, well-grown bulbs, and a large collection came from the Chiswick garden. Mr. D. Murray had good samples of The Black Douglas, a deep crimson bulb of fine shape; this variety was also well shown by Messrs. H. Deverill. The varieties exhibited besides those mentioned were the several small silver-skinned types, Trebon, The Wroxton, Globe Tripoli, Anglo-Spanish, Giant Rocca, all big-bulbed Onions. To show the representative nature of the show, there were classes for Shallots, Jerusalem Artichokes, Garlic, and Kohl Rabi. There were some admirable specimens of Leeks, The Lyon, Renton's Monarch, Musselburgh and The Oxonian being the principal varieties exhibited. Splendid roots of Renton's Monarch were shown by Messrs. Stuart and Mein, and Messrs. Dobbie and Co. had straight, clean, smooth samples of a variety called Dobbie's Champion. There were several exhibitors in the classes for Leeks. Turnips made a great show, and here it could be seen the desire is for mere size. The best two dishes were from Mr. John Lambert, who had the Snowball variety; Red Globe and Early Red American Stone were also exhibited well.

TAP-ROOTS formed another and most interesting exhibition, comprising such classes as Beet, Carrots, and Parsnips. There were many coarse Beets, but those from Mr. John Lambert were faultless. The variety was Nutting's Dwarf Red, the roots clean, excellent in colour, and smooth. Messrs. G. Bunyard and Co. had Dell's Dwarf Crimson, and Mr. G. Wythes Pragnell's Exhibition, Pine-apple, Short-top, Cheltenham Green-top, and those above-mentioned. Mr. Dunn showed good samples, also Mr. C. J. Waite, who had Hope's Middleton Park Favourite in good condition. Dobbie's New Purple, which seemed to be a very fine selection of that exhibited by Messrs. Stuart and Mein under the name of Goldie's Superb Black, was undoubtedly the darkest variety shown. A large collection came from Messrs. J. Veitch & Sons, who had fine roots of Covent Garden Red, Pine-apple, Nutting's Dark Red, Pragnell's Exhibition, and Dell's Crim-

son. Mr. W. Palmer, Thames Ditton, also had an excellent assortment, and Messrs. Vilmorin-Andrieux had a good selection of the best types.

This is a good season for Carrots, and the roots shown were clean, not rough, and not unduly large. There were the usual varieties, as Veitch's Matchless, James's Intermediate, Long Surrey, and Altringham. A good type was the half long scarlet Nantes from Messrs. Vilmorin-Andrieux and Co., the roots clean and small. Parsnips comprised The Student, well shown by Mr. Hughes and Mr. John Lambert, and Hollow Crown, excellent roots of which came from Mr. W. Poupart. The classes for Salsafy and Scorzonera were well filled, and the produce on the whole good. There was a class for Stachys tuberifera. It seems to be making way as a table vegetable, but the tubers are too small to be of general value.

SALADINGS.—Endive was well exhibited by Messrs. Vilmorin-Andrieux and Co., Messrs. J. Veitch and Sons, and Messrs. Oakshott and Millard, all of whom had good collections. Messrs. Vilmorin showed the Moss Curled, Picpus and Louvier, fine laciniated, alluded to on page 291; it is quite new and very distinct. Messrs. J. Veitch had a large assortment of Lettuces, a few of the principal kinds being Hammersmith, Early Paris Market, and Paris White. The Celery filled considerable space, but was rough, big, and coarse, as a rule. The best heads were those of such kinds as Aylesbury Prize, Standard-bearer, Matchless White, Major Clarke's Red, Sandringham Dwarf White, and White Plume. There were over twenty exhibitors. There was a class for Celeriac, and also for saladings.

The last division was for miscellaneous exhibits such as herbs, Cardoons, Leaf Beets, and Parsley. Mr. James McIndoe, Hutton Hall Gardens, Guisborough, exhibited Brussels Sprout Hutton Hall, a large and productive variety. Messrs. J. Veitch and Sons had a large collection of herbs for flavouring, and both this firm and Mr. J. Willard showed Asparagus Chicory. Parsley was largely shown by Messrs. J. Veitch and Sons, Mr. R. Dean, Messrs. Dobbie and Co., Mr. W. Poupart, Messrs. G. Bunyard and Co., and Messrs. J. Carter and Co., the varieties principally Moss and Fern-leaved. A very good form of curled Parsley was shown by Mr. J. Muir, Margam Park, Port Talbot, crisp, deep green, and not too large. Leaf Beets were shown by Messrs. J. Veitch and Sons, and Mr. Dunn sent several kinds of Cauliflowers of excellent growth; the varieties were principally Walcheren, Veitch's Self-protecting, Late Green, Snow's Winter White, and Veitch's Autumn Giant. A large collection of Radishes came from Messrs. Vilmorin-Andrieux and Co.; olive shaped, turnip-rooted, and round varieties were shown.

Committees.

On the first day a meeting of the fruit and floral committees was held, and a few interesting exhibits brought to their notice.

FLORAL COMMITTEE.—A first-class certificate was given to—

CYRTANTHUS SANGUINEUS.—This is a most useful bulbous flower from the Transvaal, and just the thing for a cool house, as the flowers are 3 in. across, of beautiful Lily-like shape, and brilliant scarlet, except the inner surface of the segments, down the centre of which is a deep crimson longitudinal line. The leaves are narrow, deep green, Iris-like, and about 1 foot in height; they betoken a strong habit of growth. This *Cyrtanthus* might succeed in a warm, sunny, well-drained border in a position that the *Belladonna Lily* would rejoice in, but unless the situation is peculiarly suitable, a cool house will be necessary. From Messrs. J. Veitch and Sons, Chelsea.

AN AWARD OF MERIT went to each of the following:—

RHODODENDRON VIRGIL.—This is a variety of the kinds commonly known as greenhouse Rhododendrons, and a rich addition to the race. It is of the Teysmanni section, the flowers borne in a good truss, and soft buff-yellow in colour—a charming

shade when so decided as in this variety. From Messrs. J. Veitch and Sons.

BEGONIA MRS. A. MOENS.—A single tuberous variety of fine finish and form; the flowers of medium size and rich apricot in colour, quite a distinct shade of its kind. From Messrs. H. Cannell and Sons, Swanley.

BEGONIA FRANK BEADLE.—Another single tuberous variety, the flowers of excellent form and of the richest scarlet colour. It is very free and of good habit—a point of importance. From Messrs. H. Cannell and Sons.

A good group of tuberous Begonias was shown by Messrs. H. Cannell and Sons, and a silver medal awarded. They were seedling varieties, the seed of which was sown in February of this year, and the range of colouring shows that the limit of shades is not yet reached. The double varieties offer charming tints, some quite self, others beautifully touched with delicate colours. It was an excellent display for so late in the season. The same firm had *Pelargonium Black Vesuvius*, the leaves almost black and the flowers rich scarlet; it is more novel than useful. M. Lemoine, of Nancy, showed four varieties of zonal *Pelargoniums*, one named *La Lorraine* having a large truss of single flowers, the colour pink. Messrs. Pearson, Chilwell, Notts, also had a number of zonal *Pelargoniums*; the best were *Radlea*, flowers single, bright scarlet; *Rev. Harris*, single crimson variety; and *Charles Mason*, also a single variety, and rich crimson. Messrs. J. Veitch and Sons had flowers of greenhouse varieties of *Rhododendrons*, the result of crossing *Teysmanni* with *javanicum*; the self scarlet colours are remarkably bright, but there are endless shades of colour as soft and delicate as in the *Tea Rose*. There are few more useful or perpetual classes of flowers than the greenhouse *Rhododendrons*; they seem always in bloom. Mr. R. Maher, Yattendon Court, Newbury, showed several seedling *Cactus Dablias*, which illustrated how surely the true *Cactus* type is being driven out. The flowers had the flat petal, fullness, and formality that are quite absent in the free, graceful blooms of the old *Juarez*. A variety named *Sappho* has small blooms of an orange-scarlet colour, a type of flower we desire to see. Mr. George Stevens, St. John's Nursery, Putney, exhibited *Chrysanthemum Comte Horace de Choiseuil*, a Japanese variety, with full creamy-white flowers, shaded yellow in the centre. A variegated *Adiantum*, apparently a form of *macrophyllum*, came from Messrs. T. and J. Rogers, Fern Bank, Ludsworth, near Petworth. We can see neither beauty nor novelty in it. Such freaks are not uncommon in Ferns, and seldom remain fixed, fortunately for our gardens. Messrs. Rogers also exhibited a *Cypripedium* called a natural hybrid, but it is very closely allied to *C. Lawrenceanum*, certainly no better than that useful *Lady's Slipper*.

FRUIT COMMITTEE.—An interesting and well-grown collection of pot Vines was sent from the Berkhamsted nurseries of Messrs. Lane and Sons. A plant of *Alicante* was bearing numerous bunches, all of good size, well finished, quite as good in fact as those from Vines planted out. The same remarks apply to the Vines of *Foster's Seedling*, *Black Hamburg*, and *Gros Maroc*. Apart from their productiveness, such Vines are unusually ornamental (silver medal). A large and well-coloured collection of Apples of leading kinds, the fruits for the most typical in character, was exhibited by Mr. John Scott, The Royal Nurseries, Somerset. Mr. Charles Edward, Newtown House, Bickley, showed good fruits of *Mme. Treve* and *Pitmaston Duchess Pears*, and *New Hawthornden* and *Cox's Orange Pippin Apples*. Besides these exhibits there were a number of seedling Melons and Tomatoes.

Fruiterers' Company at the Mansion House.—In accordance with ancient custom, the Fruiterers' Company on Wednesday evening last presented to the Lord Mayor and Lady Mayoress, at the Mansion House, a collection of fruit; and, at the Lord Mayor's desire, the whole of it consisted of home-grown Grapes, Pears, Peaches, Melons, Apples, Pines, &c. Mr. R. S. Mason, Master of the

Fruiterers' Company, made the presentation; and the Lord Mayor handed to Mr. Wright a gold medal and twenty-five guineas, the latter given by the Fruiterers' Company, for an essay on profitable fruit-growing for cottagers. The Lord Mayor, proposing the toast of the evening, said the Fruiterers' Company at the present time were doing a great deal in the promotion of the growing of hardy fruit in the United Kingdom, and their object was to bring about a re-creation of orchards in our home-steads and cottages. With the exception, possibly, of those of three counties, our orchards were worn out and were not being renewed, and Apples and Pears were imported from America and Australia, when they might be grown at home. His Lordship acknowledged the objects and action of the Fruiterers' Company, and added that if they resulted in the extension of the growth of fruit in this country, the company would earn the gratitude of the nation at large. Mr. Mason, Master of the Fruiterers' Company, replied, and thanked the Lord Mayor for the assistance he had given towards the formation of a fund to reach £5000, to provide prizes. Details of the nature of the prizes it is intended to offer were given in THE GARDEN, Sept. 21, p. 281.

Use of large vinery.—Will you kindly advise me as to what use a large vinery could be most profitably put for market work besides Vine growing? Also the most profitable crops for early work in a long range of unheated lights or pits?—J. W. W.

Ripening Medlars.—Would you kindly give the proper treatment for ripening Medlars? Should they be left on the tree to ripen or be picked and stored away?—T.

*** Let them hang on the trees until sharp frosts are likely to occur, then gather when quite dry and place them in single layers on wooden shelves in a dry, airy, cool room or loft.—ED.

Chrysanthemum Mrs. Drake Young is coming up to the expectations that I formed of it last season. Flowers now expanding are creamy-white, which may pass off to pure white. Although the blooms do not promise to be of extra large diameter, they have what some other sorts do not possess—a fullness of petals which promise to develop a bloom of good depth.—M.

BOOKS RECEIVED.

"British Apples." Journal of the Royal Horticultural Society, 117, Victoria Street, S.W.

"Orchids and their Culture." Part 4. Upcott Gill, 170, Strand, London.

"Bulletin of Miscellaneous Information. No. 33. Kew.

"Catalogue of Orchids grown in European Collections, with a list of the principal synonyms." Published for the Club of Orchid Growers in Holland.

"Journal of the Royal Horticultural Society." Vol. x. Containing the Report and Papers read at the Apple and Pear Conference at Chiswick October 16 to 20, 1888.

"The Flora of Derbyshire." Being an account of the flowering plants, Ferns, and Characeæ found in the county. By the Rev. W. H. Painter. London: George Bell and Sons, Covent Garden. Derby: E. Clulow, junr.

"Report of the South Indian National Congress held at Allahabad, December 26, 27, 28, and 29, 1888." Indian Political Agency, 23, Craven Street, Charing Cross; Hamilton, Adams & Co., Paternoster Row, S.E., and other booksellers.

Names of plants.—*L. H. L.*—Musk Mallow (*Malva moschata*).—*W. Hill.*—Specimen far too small to identify.—*Reader.*—*Aspidium* (*Cyrtomium*) *caryotideum*.—*Peter Inghild, Hull.*—Your *Salvia* is certainly *S. patens*. Please send what you already have under this name.—*Anon.* *Gladiolus brecheleyensis*.—*T. L.*—1, *Senecio pulcher*; 2, *Golden Rod (Solidago virginica)*; 3, *Anomatheca cruenta*.—*T. Tyler.*—1, *Chrysanthemum maximum*; 2, *Coronilla*; 3, *Harpalum rigidum*; 4, *Pyrethrum uliginosum*; 5, *Rudbeckia speciosa*.—*Subscriber.*—1, *Selaginella esia*; 2, *Selaginella Martensi*; 3, *Lantana var.*; 4, *Centradenia rosea*; 5, *Selaginella Wildenowii*, apparently; 6, too small to identify; 7, *Tydea*, probably *Madame Heine*; 8, *Maranta var.*—*Edward Woods.*—1, next week; 2, *Anagrum Sanderianum*.—*A. P. H.*—Please send better specimen.—*J. G. Thorold.*—Impossible to name such a scrap.

WOODS & FORESTS.

WHAT SHALL WE PLANT?

IN many parts of Great Britain and Ireland the common Silver Fir (*Picea pectinata*) may be seen at the distance of some miles from the plantations into which it has been introduced towering above all its associates of the coniferous tribe of trees, and when we draw near the spot to examine it we find that it is not merely a drawn-up spar, but that it exhibits a large, massive trunk in exact proportion to its height. When planted on good soil in a mixed plantation, by the time the trees attain an age of some sixty or eighty years the Silver Fir in many cases contains double the amount of measurable timber to that of any other species of the Fir tribe planted at the same time. In early life, however, I have found the Douglas Spruce to be of a much more rapid growth than the former, but as it cannot raise its head above that of its associates, this is found to be a serious drawback to its culture in wind-swept situations. It is to be regretted that the Silver Fir has not been used to a larger extent by planters, seeing that its merits are of such a high order, but this arises in a great measure from the many conflicting opinions that have appeared from time to time regarding the quality of its wood for house-building, railway sleepers, and other purposes. These adverse criticisms are, however, gradually being dispelled by the light that has been thrown on the subject by actual experiment and observation, and there can be no doubt that the tree can be grown to advantage in this country. In early life the tree makes but slow progress, and in many situations it is liable to be cut down by late spring frosts. I am well aware that this has also militated to a large extent against its cultivation in some parts of the country. Again, the Silver Fir requires to be at least five or six years old before it can be planted out into the forest, from which cause the price of the plants is high in comparison to that of the Scotch Fir, Larch, or Spruce, and as the trees cannot be inserted in the ground by the notch system, but require to be planted in pits, all this has a tendency to enhance the cost of the formation at the outset and consequently to retard the extended culture of this variety. The Silver Fir is not only capable of producing a large bulk of timber in a given time, but its wood has also proved to be superior in strength and toughness to that of the Larch, as the following quotation from a paper before me on that subject will show:—

A Larch and Silver Fir were both cut and dried in a green state, 12 feet long, 25 years old, and of the same dimensions; the Silver Fir sustained 64 stones 5 lbs., and the Larch 45 stones 5 lbs.; difference in favour of the Silver Fir, 19 stones.

Other experiments are given in the same paper both with regard to the extra growth of the tree and the superior quality of its timber, but I think it would be superfluous to give the full details. When the tree is allowed plenty of space it has a natural tendency to retain its side branches, and for this reason it is well adapted for filling up blanks in older plantations where it is desirable to establish covert and shelter. In all cases, however, where it is cultivated for profit, it should be grown rather thickly upon the ground in order that clean trunks free of knots may be formed. On congenial soil it is a good plan to plant the Larch and Silver Fir together about 4 feet apart. The Larch, from its rapid growth affords excellent shelter to the Silver Fir for a series of years, and when the trees begin to get too crowded, the Larch should

be gradually cut out and turned to account, thus leaving the Silver Fir as the permanent crop. When grown in this way the crop is very remunerative, as the Larch commands a good price at all stages of its growth, and the proprietor has not too long to wait until he begins to receive something in the shape of rent for his land.

The tree delights in a deep rich loamy soil, naturally a little damp, but not wet, and I have likewise cut some fine timber from trees growing upon clay loam resting upon clay mixed with small stones. When planting heather ground at high elevations, the most exposed parts had better be planted with Larch and Scotch Fir, but the sheltered corries at the base of the hill and elsewhere that contain good soil may be partly planted with Silver Fir, and even the Douglas Spruce may be introduced here on a limited scale as a trial. Where this tree does succeed I have found it to be of a much more rapid growth than any other species of the Conifer tribe, but as it seems not to thrive in all localities and situations alike, planters should be cautious at first until they become better acquainted with the capabilities and requirements of the tree.

J. B. WEBSTER.

WOOD FOR STAVES.

THE production of staves has been an important industry in the United States for more than a century, and vast quantities of the very finest timber produced in our forests have been consumed in this way. Virginia was for many years the great stave-producing State, but as good Oak became scarce in the accessible parts of that State, the business gradually spread west to Ohio and Indiana. Now Missouri and Arkansas and the region covered by the southern culmination of the Appalachian Mountain system produce the largest quantity. We gather from a recent issue of the *St. Louis Lumberman* some interesting information with regard to this industry. The wood preferred for stave making is white Oak. It is used for tight barrels, except molasses barrels, which are made of Cypress (*Taxodium*) or Bass wood. Barrels used for holding flour, Potatoes, Apples, sugar, and similar commodities are made of Elm, Ash, red Oak and other woods. There are three classes of staves, the classification being based on the methods used in getting them out. These classes are the "split," the "sawed," and the "cut." The first are used for beer, wine, and other liquids, and are made from the best white Oak. The sawed staves are also made from white Oak, and are used in the manufacture of coal-oil barrels, lard tierces, white lead kegs, well buckets, and other vessels intended to contain liquids. Cut staves are made by machinery, and are put into barrels used for solids. There is, in addition to the great home consumption, a large export of staves to England and to France, Italy, Spain, and other European wine-producing countries. The annual export is now estimated at 12,000,000 pieces. The principal stave markets are New York and St. Louis. New York and New Orleans are the principal export ports. The importance of St. Louis as a stave-distributing centre is of comparatively recent date, and is due to the exhaustion of the forests east of the Mississippi, and to the great development of barrel-using industries in the West, such as milling at St. Louis and Minneapolis; beer-making at Milwaukee, and especially the wine-making of California, for in all the territory west of the Rocky Mountains there does not grow a tree from which a wine cask can be made. St. Louis now receives annually between 2500 and 3000 car-loads of staves, which are distributed all over the United States and Europe, although large quantities are used in supplying local factories. There are still immense stretches of stave timber in the United States. Some of the very best of it is not yet within reach of the railroads, but the vast increase of wine-production in California, and the fact that good stave timber

cannot be found now anywhere in any quantity, except in our Southern States, must have an influence upon the value of southern hard-wood lands, and must in time destroy the forests of Oak in these States, as it has in Virginia and in the valley of the lower Ohio River.—*Garden and Forest*.

The Aspen.—I have seen many large places without a single tree of the native Aspen, a beautiful tree and desirable for its name as well as for its delicate beauty of leaf. One day in Ireland last autumn, driving along a country road far away from all gardens, I saw a beautiful mass of colour at some distance, so bright and vivid as not to be surpassed in autumn in the American woods, and never equalled by that of any tree in our own collections. On coming near, I was surprised to find that this was the common Aspen, to which one or two bright days had given a splendour usually supposed to belong to trees of another world.—V.

Time for timber felling.—It would be conferring a boon and a saving to consumers of timber if the producers would make a rule to cut as much timber as possible during the winter months—say from the end of October to the end of February. It is an indisputable fact that all kinds of timber are more durable, and also less liable to decay and dry-rot, if it be cut when the sap is comparatively at rest than when cut when the trees are in leaf, and therefore with the sap in active circulation. The subsequent management of timber, too, after it is cut, by preventing it from being exposed to extreme moisture and dryness before it is thoroughly seasoned, is scarcely of less importance than the proper season at which to cut it. As a rule, the producer of timber has little or no interest in it after it passes into the hands of the timber merchant, and the latter has perhaps still less regard for durability, so long as he can effect sales with profit; indeed, the less durable timber is the greater the demand, and, of course, the result is in favour of the timber merchant. It is, therefore, hardly likely that he will trouble himself to ask whether the timber has been cut in winter or summer. The consumer, being the sufferer and most interested party, should buy, so far as is practicable, timber only that has been cut in winter and seasoned.—G.

Draining.—Whatever season of the year is selected for planting trees and shrubs it will be found necessary in most cases to have the ground prepared for their reception. When the soil is at all wet, it will be necessary to have all stagnant and superfluous water removed by draining. When the ground is of a heavy, stiff, or hard nature, draining is not the only preparation necessary for the welfare and future success of the young plants. The loosening of the soil and subsoil will have to be resorted to; the cheapest and most expeditious mode of preparation will depend upon the circumstances of each individual case. Where immediate effect is desired, such as in groups and small plantations in home parks, or for ornamental planting in pleasure grounds, trenching, although the most expensive, will be the most effective. Wherever practicable and necessary, ploughing will be found a cheap and satisfactory mode of loosening the soil for the reception of young trees. In ploughing ground for planting it should be done as deeply as possible, or the bottom loosened by subsoiling. Ground of a light or sandy nature will not require loosening, and in some instances it will be necessary to have the surface as firm as possible. Where large tracts of forest or mountain land are to be planted, the above preparations will be quite impracticable, further than the necessary draining.

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"This is an Art
Which does mend Nature : change it rather ; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

MICHAELMAS DAISIES.

THESE are very homely flowers, happily to be found in most cottage gardens, but for years they have been banished from villa and suburban gardens, where even yet the zonal Pelargonium, the yellow Calceolaria or Slipper flower, the blue Lobelia, and now and then the garish Begonia reign supreme. But there is a seasonable and simple beauty about the best of the North American Asters or Star flowers which has rarely been seen, and still more rarely told. So subtle and lovely are their habit and colouring when well and thoughtfully planted, that their beauty is extremely difficult to suggest with a pen and not at all easy to express with the pencil, for they are essentially and truly landscape flowers, and lend a charm to the foreground not at all easy to describe, for some of them possess the most delicate colours which no words can describe. At an old country house in Sussex the other day I saw more and understood more of these dainty flowers than I had ever seen before. There were Asters, many and varied, under many names, and from many sources, planted in groups and masses among Rhododendrons and low rosaceous shrubs of various kinds ; here the Medlar laden with its quaint brown fruits, there the hoary-leaved Quince, the Apple, the Fire Thorn, the Cydonia of Japan, or the Almonds and Plums of our own and many other northern lands. In some places they stood stiff and erect, or they had laid themselves down prostrate in masses and turned up their flower heads to be tossed by the winds of September. I saw them on a drenching day with their heads bowed down by rain, and they were still beautiful and fair to see. Broad groups of the soft lilac-blue kinds, such as *Aster Novi-Belgii*, *A. Chapmani*, *A. elegans*, &c., among Rhododendrons were especially delightful fringing a broad drive of warm-coloured gravel that some of us must go to Southern England to appreciate and enjoy. One of the very finest of dwarf Asters is *A. acris*, forming dense clouds of a subtle lilac-blue, while a combination of *A. horizontalis* and the rather stiff *A. longifolius formosus* is not far from the perfection of autumnal flower colour. There are two or three good whites, whites inclining to pink, as in *Aster variabilis*, whites inclining to yellow, as in *A. umbellatus*, and whites inclining to blue, as in *A. blandus*, and one or two others the names of which are as yet a matter of doubt. Of small-flowered white kinds there was a very select little group, and their flowers as cut are very popular in Covent Garden, but as seen fresh and growing they are more exquisite still. The best small white-flowered forms are *A. multiflorus*, which forms a hazy mass of white stars ; also there is *A. vimineus*, or as it is sometimes called *A. ericoides*, while a large form of *A. Novi-Belgii* called *albus* is a larger white of such excellence as not to be ignored. The soft purple plumes of *A. linearifolius* are most exquisite as seen in sunshine or as waving in the wind. This (*A. linearifolius*) is one of the most distinct of all the so-called species, and the flowers of this, like those of *A. acris*, are pretty when cut. There are one or two forms of *A. cordifolius* that deserve mention having pale white flowers in clusters, while the fresh Pine-scented *A. Novæ-Angliæ* is a bold and

effective purple kind with large flowers. It is a very handsome kind and goes under several names, but it is unmistakable by the Pine-like scent of its leaves when slightly bruised, while its ray florets have a knack of curving inwards, and thus covering up the rich golden disc florets from the dews of evening or the nightly showers.

To be thoroughly enjoyed in large gardens these flowers must be well planted in bold masses and groups among shrubs, and thus treated they are most effective in the landscape of the waning year. I looked on them as so planted the other day from a window in an Elizabethan house, built in 1597. Its Moss and Lichen-embroidered porch and gables are as sound to-day as ever, and as I looked over the rolling woods into the distance, these soft blue clouds of Aster flowers made a foreground of the most exquisite beauty, harmonising with the grey-headed, red-stemmed Pines in the middle distance and with the grey pools and the distant blue of woods and sky. Near such a house and in the foreground of such a picture it would have been quite sacrilegious to thrust beds or borders of Begonias, Calceolarias, or scarlet zonal Pelargoniums ; indeed, in such a place and in such a picture Michaelmas Daisies seem the only right and perfect things to employ.

These flowers have before them quite a future ; all are good when well grown, but over-feeding must be avoided, as the best and most effective results seem obtainable on poor clay or on thin gravelly soils. The manure heap often does wonders, but it may ruin these flowers, which on deep rich soils actually require starving into their fullest beauty of blossoming.

Then comes the vexed question of names. So far as my own experience goes, Asters have different names in different places, and modern botanical dealings with these Star-worts have left them just as confused and confusing as ever. The fact is much of their beauty is due to cross-breeding in nature, as also in gardens ; hence it follows that we gain quite a sliding scale in this genus, as in Daffodils, Pansies, Roses, Ivies, and many other genera of our most popular garden plants and flowers. The only practicable method to adopt is to obtain every good and distinct Aster possible, and then to give them a fair trial ere you trust yourself to use them largely. The old dogma about the Hollyhock being our only "landscape flower" is dead and buried, since every perfectly hardy flower has, or may have, an effect in our best landscapes if rightly, plentifully, and efficiently used. Even the blue African Lily (*Agapanthus umbellatus*) produces exquisite effects in the country landscape if vigorously grown, its blue flowers being quite evident as seen half a mile or more away, and it is one of the very few half hardy flowers that may be placed near to really fine old country houses with advantage, harmonising well with the softer toned Star-worts, and contrasting as it does most beautifully with the bronzy leafage and soft-tinted flowers of the Tea Rose. Exquisite as are the tropical flowers, the best and most satisfying of English gardens will ever be those composed of our hardy trees and flowers. Roses, Lilies, Violets, Irises, Daffodils, Crocuses, Anemones, Saxifrages, Pinks, Carnations, Asters, Grasses, Tritomas, with hardy shrubs and trees and good turf will always yield us pleasures of the highest and best, leaf and blossom full of life and beauty, suggestion and association that no tropical vegetation, however gorgeous or refined, can ever afford. Of course, where expense is no object both may be to some extent enjoyed, but one of the great characteristics of hardy flowers, such as these homely Michaelmas Daisies,

is their sweet and gentle democracy, enjoyable as they are by the lowly labourer as well as by the great ones of the earth.

Dublin.

F. W. BUREIDGE.

ROOM PLANTS.

THE best plants for rooms are the Palms, which are always stately looking and attractive and cannot well be misplaced. They are also very enduring, and will live and thrive where many plants of a less hardy nature would die. Another thing much in favour of Palms is that they require but little root room, and are therefore all the more handy for vases into which they can be placed without taking them from the pots. In such cases where this has to be done I have never found anything equal to Moss for placing round the ball, as that absorbs the water gradually and keeps the plants nicely moist. The most desirable kinds of Palms for the purpose referred to are the Kentias, such as *Belmoreana*, and *Areca lutescens*, the last named being very graceful in habit and having rich yellow stems that show up in fine contrast with the green of the foliage. *Latania borbonica* in a small state is also a good sort to have, and *Chamærops Fortunei* will stand any hardship. The *Aspidistra* is another valuable plant for room decoration ; there are two forms—the green and the variegated, the latter being remarkably handsome in its foliage, which rises from creeping stems or roots and is marked or banded with creamy-white up its entire length. These *Aspidistras* are very tenacious of life and will thrive under the most adverse circumstances, as they will stand gas and require but little light, as an instance of which I know of several that have stood in a hall for years, where they grow freely and annually send up very fine leaves. All they need in the way of attention is plenty of water through the spring and summer months, and now and then to have their foliage sponged or cleaned by freeing it from dust, and this may be done by syringing or standing the plants in the rain. As to potting, they do not require fresh soil and are best left alone, and the same with the Palms, which keep healthy in the same pots for years. If an increase of stock is wanted, plants may be turned out and split through, as they divide readily without feeling much check. *Clivia miniata* is a grand thing and has the advantage of being both striking in foliage and flower, as the leaves are long, thick, and broad, of flag-like appearance, and deep rich green in colour, while the blooms are like Lilies and they are produced in huge trusses. This *Clivia* is half-aquatic, and, therefore, likes plenty of water, and if it gets this it requires but little root room ; but plants during the time they are making their growth are all the better for having a little stimulant in the form of any of the artificial manures, which may be sprinkled over the soil and washed in, or given in the pans the plants stand in. The way to propagate the *Clivia* is to divide the plants by cutting them through, which may be done in spring just as they start or immediately after flowering. The India-rubber plant (*Ficus elastica*) is also well adapted for room decoration, as its bold foliage and tall stately habit render it very attractive. To maintain it in health the leaves must be kept clean, and this can easily be done by wiping them with a wet sponge. The way to increase the *Ficus* is to put in cuttings, which may be made by taking off each old leaf, with a piece of the stem attached, and if these are inserted in sharp sandy soil and placed in a close, warm pit or frame, and kept shaded from the sun, they will soon root and send up a young shoot from the bud. *Aralia Sieboldi* and the sport from it, *A. Sieboldi variegata*, are both stately plants that look well anywhere, and the first named is very cheap, as it comes quickly from seed and may soon be grown to a useful size. But the variegated form has to be propagated by means of cuttings, and is, therefore, scarce ; being so distinct, however, it is worth the extra cost, as its leaves are beautifully marked and make a fine show. The secret of success with these in rooms is to keep their foliage clean. Begonias of the Rex type, and there are many of these, are very handsome in vases in rooms, but they need more light than the plants just mentioned, and re-

quire careful handling or their leaves break, as they are very brittle and soft. These Begonias like plenty of moisture, and with this they need not have much pot room, as they will grow freely and keep in good health. Spotted Coltsfoot (*Farfugium grande*), now seldom seen, is a highly ornamental plant, its leaves being very large and spotted or blotched with yellow irregularly over the surface. This, like the Palms and Aspidistras, does not require much light, and its wants are almost entirely met by giving plenty of water. The one great thing to avoid is not to let plants stand in it long, and this may be obviated by placing them in shallow pans, or putting in fine pebbles for the bottom of the pots to rest on.

J. SHEPPARD.

ROSE GARDEN.

WHEN TO PLANT TEA ROSES, AND WHAT TO PLANT.

WRITERS for the press are constantly being asked such questions as well as hosts of others more or less relevant to their special themes; and hence not a few of us drop names and addresses. But styles and directories succeed in sending many personal inquiries that very often prove useful finger-posts to the wants and wishes of more numerous readers. Here is one of the latter class already answered privately: "My land is fairly light with south-east aspect, and I could easily protect from severe weather in winter; might I plant at this season of the year, or what time would you recommend? Will you also please name six best varieties?" The advice was, "Do not plant till the end of April or middle of May, 1890; and for six most useful all-round varieties choose Gloire de Dijon, Homère, Mme. de Watteville, Marie Van Houtte, Rubens, and Souvenir d'un Ami." It may prove useful to many readers of THE GARDEN to give some reason for this advice. So far as the mere safety of the plants is concerned, in this case they might just as well have been planted at once, as the writer assured me that he had ample means of protecting the plants in winter. Most of the varieties recommended, especially the first two, are also as hardy as the majority of perpetuals, if not more so. But the summer planting of Tea Roses is to be preferred, inasmuch as it leaves the future root-run free for six or more months' winter culture before planting. It is almost impossible to overestimate the importance of this more thorough preparation, enriching, mellowing, and warming of the earth on the future health and well-doing of the Roses.

Planting Roses or other plants on raw, that is, newly taken in or trenched or dug up ground, checks them on the very threshold of their career, and is responsible for very many deaths among the plants. Too frequently they sulk or die, not from the coldness of the climate, but through the crudeness and rawness of the soil in which they are compelled to pass rather than grow through the winter. Even this phrase is far more favourable than the facts absolutely warrant, for Tea Roses that do not grow when planted will not be found to have stood still, but gone backward, and the roots will not be found in spring in such favourable condition for growth as when thrust into raw, crude earth in the previous autumn. Of course, these objections do not apply in their full force to soils that have been under root or other crops one or more years previously, although even these will be found all the better for Tea Roses if subjected to some extra culture and enrichment during the winter. Whereas, for fresh or maiden soils winter culture, such as

draining, trenching, digging, manuring, is of the utmost importance. Time will even be gained, and more and better produce be reaped in less time through the deferring of the planting of Tea Roses till the late spring or early summer.

Properly cultivated during winter, Rose beds and borders will be found in the best possible condition for rapid root growth in April or May. Much, however, depends on proper cultivation. Drainage where needful, manuring, trenching, double or single digging should be set about early, and the surface of the ground left as rough and uneven as possible. Two, three, or more times during the winter and spring months, as this rough surface is mellowed into fineness, fresh surfaces should be raised up from the lower depths and exposed to wind and weather. By the repetition of such processes more progress may be made in mellowing and enriching soil in six months than can be done in six years with a crop on the ground.

Even the modern and excellent practice of surface-mulching newly planted Teas and other Roses effectually checks the proper culture and amelioration of the soil in which they are compelled to live and grow, for any mulch to be effectual must be frost and drought-proof. But these two forces are among the most powerful in preparing the earth for the sustenance and growth of Roses and other plants.

Even the effects of mulches in keeping roots warm have been greatly exaggerated, for it must not be forgotten that what keeps out the cold also keeps out the heat, and as the sun and air are our chief sources of warmth for the roots, it follows that mulches may tend as much to keep roots cool as to keep them warm; and they do. Hence, to mulch the roots of Tea Roses planted in winter in fresh, raw, crude soils may keep them cooler than they otherwise would have been; while the mulch in the ratio of its thickness and its richness preserves the earth in its crude state of rawness, which renders it physically impossible for it to nourish or feed the roots.

And then, even on the ground of immunity from the capricious severities of our climate, Tea Roses are much safer wintered under glass, for, notwithstanding the absolute truthfulness of all that has been stated as to the comparative hardness of Tea Roses, it is also indisputable that many of them do die during the winter, and the mortality is greatest among newly-planted Teas, and chiefly for two reasons—the plants themselves propagated and grown under glass are abnormally tender at starting, and the roots are not yet attached to the soil.

But Tea Roses if kept under glass during the winter and spring may be transferred to beds or borders in May in full growth or even flower if desired. Under such favourable conditions the roots will at once take a firm grip of the genial soil, and the bed may be furnished with verdure and beauty at starting—a verdure and beauty that in the case of Tea Roses will wax more and yet more full till the end of the season.

D. T. F.

SHORT NOTES.—ROSES.

Rose Camoens.—This old-fashioned Rose is still blooming freely at Kew. It has been loaded with flowers throughout the summer, and nothing will check it but severe frosts. The flowers are somewhat flimsy, but of a precious colour—bright shining rose shaded yellow.

Tea Rose Grace Darling was producing a number of good blooms at Kew last week. There is a bed of bush plants near the Palm house. The growth is robust, leaves of the richest green, and the sweetly

scented flowers full bright peach colour, shaded creamy white; they are borne in clusters of three or four together.

Rosa rugosa.—A hedge of this makes a very interesting feature in a garden at this season of the year. The time of flowering has certainly passed, but there can be seen numbers of large round berries turning deep crimson; these are borne in clusters and are very striking. I notice that the birds are feeding upon them. It is said that the best way to make a good permanent hedge of *Rosa rugosa* is to sow the seeds in the open ground, and have the plants on their own roots.—R. D.

DESTROYERS.

ENEMIES OF THE STRAWBERRY.

GREEN-FLY.—There are few plants grown under glass that more acutely feel the attacks of aphides than the Strawberry. The best plants will soon have their fruit-bearing powers reduced to a very low point if this pest is not promptly dealt with. I have often thought it strange that this should be the case, seeing that in the open ground Strawberry berries never seem to be infested with fly to the extent of necessitating remedial measures, in this respect offering a marked contrast to the Rose, Peach, and many other hardy things grown indoors. A rule seldom departed from by a very good Strawberry grower was to fumigate the plants as soon as one fly was seen. He used to say that if one insect could be found, others were sure to be there. I have also known fumigation to be done on the preventive principle, making it periodical during the growth of the plants. This is undoubtedly the best way to keep fly from getting a foothold, and is like hoeing ground before weeds appear. When green-fly once becomes numerous, it is often a hard matter to thoroughly rid the plants of it. A few insects are almost sure to survive, and these, left alone in the favourable conditions they enjoy in a warm house, increase so rapidly that in the course of a few days the labour of destruction has to be recommenced. In fumigating, the best way is to fill the house with smoke on two successive nights, allowing an interval of a day and then repeating the operation. This succession of fumigations, if carefully conducted, will so thoroughly cleanse the plants that they will scarcely need attention again in this way, and there is the satisfaction of seeing them grow away without a check. I have, however, quite given up fumigating Strawberries, and now use nothing but tobacco powder, which I find efficacious, safe, and more easily applied. I was led to employ this principally through the difficulty of killing the fly in frames where I grow a considerable amount of fruit. In a frame the smoke condenses so quickly that only under the most favourable atmospheric conditions is it possible to clear off the aphides, and owing to the more confined space, there is a great danger of burning the foliage. Now as soon as I see any signs of fly I go over the plants and dust them, and if this is done carefully, there will often be no more need for further attention in this way. In ordinary seasons I go over the plants twice. The advantage of dusting over fumigating is that it can be done at any time; whereas it is only in the evening or early morning and when there is no wind that fumigation is efficacious. It is almost impossible to insure Strawberries against the attacks of aphides, but I have found that nothing encourages them more than much syringing, especially when this is done late in the day. The foliage is thereby rendered more flaccid and sappy, and consequently more palatable to the insects. In hot weather syringing is necessary, but it should be done in time to allow of the foliage becoming dry again by night.

RED SPIDER.—I have tried many ways of exterminating this, but always with very partial success when the pest had become thoroughly established. I do not think that anything short of sponging the leaves with soapy water or filling the house with very strong sulphur fumes will thoroughly cleanse badly-infested plants. The former plan is, however, scarcely practicable in the case of the Strawberry,

and the latter is very dangerous, so that this formidable enemy must be combated by other means. When the plants come from runners produced by stools that have fruited, it frequently happens that they have spider on them, and in such a case it is wise to dip them in a solution of soft soap and sulphur before putting them into warmth. It is, however, a bad plan to layer from fruiting stools; it is just as easy to get the runners from young plants put out in autumn or in early spring, as they are sure to be better and free from insect pests, and these plants come on and make good fruiting stools the following year. It is seldom that a crop of forced Strawberries can be got off without red spider, but good culture will keep it off until the fruit is mostly ripe. The most important point is a never-failing supply of moisture at the roots. I am quite sure that a few hours' neglect on a hot day will suffice to bring on an attack. I have proved this to be the case on more than one occasion. Red spider has a great difficulty in establishing itself on the foliage of plants that are in free, vigorous growth, but the instant their vitality is lowered it fastens on them. On hot days the plants should be looked to about ten in the morning, and again at three o'clock in the afternoon. If the plants are well rooted they should all get a soaking at the first watering. When they are in bloom and swelling up their fruit and a good heat is being maintained, there will not be much danger of over-watering. An over-heated condition of the atmosphere is another matter that must be carefully guarded against. When the sun is seen to be rising in a clear sky air should be given early in the morning, and on days when the sun comes out suddenly with some power, not an instant's delay should be made in giving air. I do not approve of the daily syringing that many practise, but the forcible application of clear water to the foliage at frequent intervals when the fruit begins to swell up is indispensable to keep it clean. Two good washings weekly, getting the water well to the underside of the leaves, will do more to keep off spider than the overhead wettings twice a day that some consider to be all that is required. As regards plants that have been forced and that are to go into the open ground, they ought all to be dipped before they are planted. They should go into a sheltered situation where the natural protection minimises as much as possible the change from an indoor temperature. As soon as the foliage has become well hardened, the plants should be dipped in soft soap at the rate of 4 ozs. to the gallon, with enough black sulphur to fairly coat the leaves. In the course of a fortnight the spider will be killed off, and the plants when put out will make a much better growth than if in a more or less infested condition through the summer.

MILDEW.—I remember the time when Strawberry growers had not this pest to reckon with. It is true that it sometimes attacked the old Black Prince, but up to about fifteen years ago the fruiterers and salesmen in Covent Garden did not seem to know much of mildewed Strawberries. I remember the first lot of fruit that had been damaged by this pest quite mystified some of the old-established Centre Row men. Now one rarely goes through the market in the season of forced Strawberries without witnessing traces of its work. Until I found out how to master mildew I experienced considerable loss, but now I can safely say that I do not lose one berry in five thousand by mildew. There are three things that will almost certainly bring on an attack of mildew, and these are cold draughts of air, an over-moist atmosphere, and dryness at the roots. It would seem that in the majority of gardens the spores of this fungus are continually floating in the air and ready to fasten on the foliage that has been brought into the right condition. I am quite convinced that mildew will never get a hold of plants that are in the enjoyment of a normal healthy vigour, but that when the slightest inroad on the health of a plant is made, the grower must be prepared to deal with mildew in a more or less virulent form. Either of the causes above mentioned will in itself suffice to bring on an attack, but two of them in combination will induce a state of affairs that will result in a

serious injury to the crop. For instance, let plants remain dry for an hour or two in the day when the ventilators are open back and front and a brisk dry air is playing on them, and in less than ten days the plague spots will surely make their appearance on the tender foliage. The same thing will occur in an even more aggravated form when moisture at the roots is deficient in a damp, stagnant atmosphere. I have known plants, fruit and all, to become quite white under such circumstances. A fertile source of mischief is to be found in the warm growing temperature that is maintained at night, especially during dull weather. Such atmospheric conditions seem to be peculiarly favourable to the spread of the fungus. I now make a point of leaving on a little air and create no more moisture than is just needful to correct the dryness caused by the heat from the pipes. Syringing overhead late in the afternoon does nothing but harm. It makes the foliage tender and less able to bear sudden outbursts of sun, and renders it highly susceptible to the attacks of mildew, and also makes the cure of infested plants more difficult through liability to scorching when sulphur is applied. Our climate is so variable that it is difficult to always guard against those extremes that favour the ravages of this disease, and a sharp look out should be kept for the first plague spots that appear. It generally happens that a leaf here and there is seized upon, and if these are promptly dealt with, it may stop the mischief for that season. It is a curious fact, and one that I am at a loss to account for, that mildew generally comes once in the season, and rarely afterwards. I find that if I take it in time I am free from it until the fruit ripens. It would almost seem that there are so many spores waiting to come to activity, that they are sure at some time or other to find suitable conditions for germination. If these are killed, one is safe for a certain period. My plan is to keep a tin of sulphur and a fine gauze bag in the house, and immediately to dust a leaf as soon as a spot of fungus is perceived. The waiting a day or two to syringe all the plants is the gravest of errors, for in forty-eight hours thousands of spores are set floating in the air, and then drastic, and consequently dangerous measures must be taken. When, however, this has to be done, I strongly advise the use of sulphide of potassium, as being more cleanly and less dangerous than sulphur. I find that it is quite effectual at the rate of a quarter of an ounce to the gallon, and with me it has never failed to cure. At this strength the plants may be drenched with it, and in the course of a week the plants will be quite clean.

MICE.—These are terrible foes if they are allowed to find a home in a house or frame where Strawberries are grown. When once they take to the fruit nothing in the way of baits seems to attract them. They take the berries long before they ripen, conveying them to their holes to store them for the sake of the seeds, as they do not appear to touch the fleshy part. If they ate the whole of the berries their ravages would not be so formidable, but eating the minute seeds only, they naturally require a great many to satisfy their voracious appetites. I once had a pit 100 feet long attacked, and for some time could not make out how the fruit disappeared. At length I found heaps of a score or more berries stored away under the pipes. Tempting baits mixed up with various kinds of vermin destroyers that in a general way prove effective were liberally distributed among the plants and numerous traps were set, but with no result, and as a last resource I threw the frames open several nights in succession, strewing them with bits of fish to attract the cats. This proved quite effectual, and there were no signs of them afterwards. I now always keep a cat, and when there are signs of mice put it in the house or frame at night, and in the course of a day or two the thief is certain to be caught. It is, however, seldom that I am troubled in this way, for the cat has the range of the glass, and mice will not stay and nest where their enemy comes frequently. In places where it is known that mice abound, traps should be put down all through the winter, as at that time food is scarce, and the mice enter them more readily than when they have an

extensive feeding-ground. The old figure of 4 trap is a good one, and so is the little wooden trap that is commonly sold. I have found that Vegetable Marrow seeds are good to bait them with. They will take these when they fight shy of other things, and if cats are kept they will not meddle with the traps, as they are sure to do if toasted cheese is used. In open quarters mice are more difficult to deal with, for they do not as a rule come to the beds before the berries are formed, and then they will not go into a trap. If, however, a garden cat is kept, very small bits of fish scattered among the plants at night will cause it to hunt about in the beds when all is quiet, and I will answer for it the mice will quite disappear in a week.

J. C. B.

NOTES OF THE WEEK.

Tritoma Burchelli flowers longer than any of the Tritomas or Kniphofias. It blooms in late summer, and keeps throwing up a succession of spikes until severe frosts stop the supply. A group should be planted on the turf.

Hybrid Passion Flowers.—I send flowers of two hybrid *Passifloras*. Of the parentage of them I am not quite clear, as two years ago I crossed a number of kinds. These were raised from some of the seeds last year.—J. M., Charmouth, Dorset.

* * * Flowers very clear and prettily coloured.—Ed.

Helianthus decapetalus is the best of the perennial Sunflowers, and though less graceful than *H. giganteus*, is by no means stiff. Its flowers are of a rich clear yellow, and smother the branching stems. There is a fine mass of it in the Broxbourne Nursery. The plant grows about 6 feet high.

Oxalis lobata is a charming Wood Sorrel. Its leaves make a carpet of growth, now studded with rich, golden-yellow, sweet-scented flowers, each as large as a halfpenny. There is a panful of it at Broxbourne. It is quite hardy, and should be planted on the rockery in sandy peat soil.

The British Fruit Growers' Association.—We understand that this body intends holding a meeting and conference at the Crystal Palace, Sydenham, on the first day of the hardy fruit show, Thursday, October 10, at 3 p.m. Important papers on fruit culture will be read by Mr. T. Francis Rivers and other eminent authorities.

Berberis dulcis—This is fruiting unusually well this year. There is a large specimen of it hung with the red strings of fruit by the side of Mr. Riddell's house at Castle Howard, and also two fine bushes at Loudwater House, Rickmansworth, each between 6 feet and 7 feet high, and spreading out into a luxuriant mass of growth. Few plants are finer in autumn than this Barbary.

Japanese Lilies from Weybridge.—Mr. Wilson sends us a beautifully grown lot of the old and splendid Japanese Lilies—*Lilium speciosum* and white forms of the same noble species. Of late years these have been somewhat absent from our gardens, and their place taken by the larger and, we think, less beautiful auratum. Nothing in the open air in autumn can be more beautiful than *L. lancifolium* and its varieties.

Rosa lucida is as beautiful now as when in full flower. We were never more struck by its unusual beauty than the other day at Broxbourne, where masses of rich brown-crimson leaves and stems were falling over a piece of rockwork. The leaves are as glossy as if varnished, and the crowd of small crimson fruits intensifies this lustrous colour. It is well named *lucida*. To catch this glorious colour in its fulness, the sun should shine upon the bush.

Galanthus octobrensis.—I send you not the last Rose of summer, but the first Snowdrop of winter. Unfortunately, I did not see it till to-day, and the slugs have done their worst with it. It must have been open two or three days. *Galanthus octobrensis* in the month of September makes it seem as though winter were in a hurry to come on us. I got the bulb from Herr Max Leichtlin, whose name is written all over my garden in unmistakable characters at all seasons of the year. The Narcissus, flowers of which I also send, was a gift of Mr. Wolley Dod, and came from Gibraltar.—H. EWBANK, Isle of Wight.

Linaria alpina.—This beautiful alpine Toad-flax is still flowering freely. The seed was sown in the open air in June. It soon germinated, and the plants grew into little tufts, carpeting the ground

with a mass of glaucous foliage and producing among their fleshy leaves numerous flowers, which are exceedingly pretty, of a pale violet hue, with two rich blotches of orange upon the lower division of the flower. Though sometimes treated as a biennial, and even as a perennial in favoured spots, yet as an annual only this Toadflax succeeds, nor does it need much cultivation, as the plants establish themselves among stones or in the gravel of the walks. It is a charming and easily grown alpine, which is far too rarely seen.—A. H.

Parrotia persica.—This is changing its summer dress of rich green; the change is gradual, but the colours are rich, yellow first, then mixed with brilliant red, and the leaves are amongst the last to drop. It is not very hardy. The specimen at Kew is well sheltered on every side, and it has grown to a good height. It is near the main entrance gate to the gardens. This tree was introduced from Persia in 1848.

Seedling Carnations.—Last week in looking through a garden I saw a fine lot of plants raised from seed sown in August last, and these were blooming as freely as in the proper season, and should the weather continue favourable will probably do so until November. This is a trait not found in plants raised from layers or cuttings, and seeing that seedlings are so easily raised, more attention should be given to that phase of Carnation culture.—C. N.

Arctotis breviscapa.—The *Arctotis* as a genus seems to have fallen into disfavour, as it is rare to see any of them now. The above named kind, raised from seed this year and put out with the bedding plants, has been flowering all the season. One plant will spread over 2 square feet of ground, effectually concealing it with a dense mat of foliage, from which rise, borne upon long stalks, the large orange-coloured blossoms. A mass is very effective in the bright sunshine when the flowers spread out their rays and disclose the deep black band encircling the inner base of the flower. It is interesting to note that whereas in summer the flowers only open on bright days, in autumn they are often open in dull weather.—A. H.

Crocus speciosus.—There is no finer autumn bulbous flower than this, yet we might search many gardens for it in vain. There are six large beds of it in the Broxbourne Nursery one mass of flower, and a succession of bloom keeps appearing to maintain the display. It is so hardy and free-growing that once it has obtained a firm hold it multiplies so quickly that in time this beautiful *Crocus* becomes almost a weed. The flowers are of the richest blue, delicately veined, and their fragrance is as sweet as that of the Wallflower. The time to see the full glory of a bed of it is when the sun shines upon it; the flowers open out their petals wide to receive its rays, and then show the rich orange-scarlet stigma. Clumps on the rocky look well, and bulbs should be planted in the wild garden where colour is wanted. Our gardens would not be so flowerless now if more was thought of the autumn-flowering *Crocuses*.

Hardy October flowers.—While bedders are ragged and almost flowerless, especially where touched by the September frosts, gardens that have a good selection of hardy plants are still gay. In two of the largest hardy plant nurseries near London there are a number of the finest perennials in full flower, comprising Michaelmas Daisies of the best kinds, masses of Japanese Anemones, *Trifolium*, *Helianthus*, *Crocus speciosus*, and other good autumn-flowering species; the fine old white Lupine (*L. polyphyllus albus*), *Senecio pulcher*, the great Ox-eye (*Pyrethrum uliginosum*), hardy Cyclamens, Golden Rods, and several rock plants. With such a list of beautiful flowers gardens should not be dull and uninteresting in autumn, but they too often are. Very few know of the many charming varieties of Michaelmas Daisies or perennial Asters; they are amongst the finest of September and October flowers.

Skimmia oblata.—Enclosed are shoots of the above, male and female. The female variety is low-growing and less ornamental than the male

plant. The male is very ornamental in the spring, as it flowers very freely. My plant of the female variety is 3 feet square, but not more than 2 feet high. It is quite covered with its bright berries, which are much valued by the ladies as ornaments either for the hair or dress, and they retain their beauty long in water. In the winter I have known the plant cleared in a day by the fieldfares. Both the male and female are readily increased by layers, but in the earlier stages do not grow rapidly. A partially shady position seems to be the best.—J. B., Bath.

Cyrtanthus sanguineus.—I enclose a bloom of this. I have several bulbs of it in flower here just now. The flowers are finer than last year, and in one case there are two on one stem. The colour is very brilliant, but it retains its brilliancy for such a short time that I fear the flower sent will arrive somewhat faded. It flowers most freely and has increased rapidly.—A. M. T. AMHERST.

Ataccia cristata is one of the most remarkable of cultivated stove plants. Its large, dark shining green, Dock-shaped foliage and tall scapes, bearing dusky button-like flowers mixed with long whitish filaments, and set against a background formed of three large and ornamental bracts, form altogether an attractive, though perhaps sombre-coloured picture. There are plants whose strange, even startling appearance arrests attention, excites curiosity, and creates an interest which mere colour or size alone fails to do, and this *Ataccia* is one of them. It is tropical in its requirements. A plant of it is in flower in the T range at Kew.

Nymphaea Sturtevantii is a magnificent Water Lily. Its flowers are huge cups each 9 inches across, of brilliant rosy hue, deliciously fragrant, and resting on the water as if free and afloat. The leaves are the largest of all the kinds belonging to the red-flowered section, and they are almost apricot in colour. Their surface is singularly wrinkled or wavy, quite unlike the leaves of any other garden *Nymphaea*. Mr. Sturtevant, of the now famous Lily Gardens in New Jersey, tells us that he obtained this plant as a seedling from *N. devoniensis*. Does he know whether it is a hybrid or not? There are two fine plants of *N. Sturtevantii* in the collection of *Nymphaeas* at Kew.

Helianthus rigidus semi-plenus.—The plant sent out by Ware as *Helianthus rigidus semi-plenus* is, next to *H. multiflorus*, the handsomest of the many perennial *Sunflowers* in cultivation. The flowers are large, semi-double, of a fine rich orange-yellow, and produced in great profusion. The only fault, and one that may perhaps be remedied by selection, is its very straggling habit. As it is now it makes a sorry sight in a well-trimmed border, but in a shrubby or semi-wild place few plants would have a finer effect during the late autumn months. It may be increased rapidly by division at any time during the late autumn or spring months.

Lobelia Tupa, or Tupa Fueillei, the latter perhaps the most general name, is a very fine plant for autumn effect. It is a native of Chili and quite hardy in high districts or where the soil is light and dry. Its towering leafy stems, covered more than half their length with brilliant scarlet flowers, have been very showy during the last month, and though our soil is not particularly dry during winter the plant rarely gets damaged to any great extent. A good covering of well-sifted ashes put over the clumps when the stems have been cut down keeps the plants quite safe through our hardest winters. The other species, *L. Bridgesii*, has pink flowers, but it is not so striking as the above.—D.

Sedum spectabile is the finest of all the tall-growing sorts, and a handsome plant in every way. It is beautiful from the time that its crowns peer above the ground in spring and develop into rigid shoots, clothed with broad glaucous leaves, till the last flowers fade late in autumn. The flowers, borne in a dense, broad, flat corymb which terminates the shoot, are of a rosy colour and last quite two months. In a cut state they last nearly as long, and the shoots root in the water, whilst if before the flowers open the shoots are cut and dibbled several into a pot, they root and flower and look very attractive. It withstands cold or heat, wet

or drought, and is, therefore, a most accommodating plant.—K.

Bolbophyllum saltatorium.—This little Orchid is one of the most interesting and remarkable of the curious genus to which it belongs. The pseudo-bulbs are each somewhat less than an inch in diameter, each one bearing a fleshy, oblong leaf. The flowers, of a greenish brown colour, are densely arranged on a short decurved raceme. The interest of the plant centres in the lip, which is jointed at the base. Moreover, it is terminated by a large and prominent tuft of hairs, so that on the slightest current of air passing over the flowers the lip commences to move up and down in a most curious fashion. At the Temple show last summer Sir Trevor Lawrence exhibited a closely allied, but larger species, *B. barbigerum*, whose eccentric, and to the majority of the visitors inexplicable movements made it quite an attraction. *B. saltatorium* is a native of Sierra Leone, and is now flowering at Kew. It may be successfully grown on a piece of Fern stem with a morsel of *Sphagnum* about the roots, suspending it near the glass in the warm house.

Cymbidium elegans.—Although there are several other species of *Cymbidium* superior to this both in the size and colour of their flowers, notably *C. Lowianum* and *C. eburneum*, none are more graceful in habit, and as it flowers from the present time up to December—a season when Orchid flowers are scarce—it is well worth cultivation. The blooms are produced on a scape springing from the base of the current season's growth; at first this is erect, but the terminal part bearing the flowers droops gracefully over, causing them to point downwards. The flowers, about thirty on a spike, are pale yellow and expand but little, the sepals and petals forming a tube 2 inches long. The species has an extensive range in the Himalayan region. It was originally discovered by Wallich in 1821, and Sir Joseph Hooker states that he saw it in Sikkim at an altitude of 7000 feet; it has also been observed in various other localities by different travellers. It should be potted in fibrous peat and grown in the coolest part of the intermediate house. In the *Botanical Magazine*, t. 7007, the species is figured as *Cyperorchis elegans*, from a plant now flowering at Kew.

Swan Orchids (Cynoches).—Two species of the curious genus *Cynoches* may now be seen in flower at Kew—the one *C. chlorochilon*, and the other *C. ventricosum*. There are many points of resemblance between them, these indeed being more noticeable than the differences. *C. chlorochilon* is a native of Demerara, and was introduced over fifty years ago. It usually bears two flowers on a raceme, the sepals and petals being yellowish-green, and the lip chiefly ivory-white with a round blotch of olive-green towards the base. The flowers emit a powerful and aromatic, but not disagreeable odour, each one being about 5 inches in diameter. *C. ventricosum* differs in having smaller, but more numerous flowers—generally from seven to twelve on a raceme. In this species the lip is also of a purer white, and is more constricted at the base, and the column is proportionately longer. The Swan Orchids should be grown in well-drained pots or baskets—the latter preferably—in a compost of peat fibre and *Sphagnum*. Careful watering is necessary in the first stages of growth, but when fairly started an abundance may be supplied. They should be placed in the stove when in active growth, removing them to an airy position in the *Cattleya* house when at rest, only giving sufficient water to prevent the shrivelling of the pseudo-bulbs.

The evils of grafting.—In reply to Mr. B. D. Knox, permit me to say that it did not occur to me that it was necessary to particularly point out that "air-layering," like any other mode of layering, may be practised at any time during the season of active growth. I cannot inform him "how long a time must elapse before the roots are sufficiently advanced to permit of separating the scion from its parent stem." To those who, like myself, have never yet tried their hand at "air-layering," that is a period of time which is likely to be "discoverable by experience."—WILLIAM MILLER.

A PICTURESQUE LONDON GARDEN.

THE annexed engraving is from a photograph of North End House, West Kensington. Standing in its grounds, it is difficult to believe that we are really in London, for it is some miles within the western limits of the great city. The house, which is of the solid building of a hundred years ago, has deep overhanging eaves; the garden-front is covered by Wistaria, whose thick stems interlace below the purple flower-clusters, and on which birds build their nests; Ivy, Clematis, and Virginian Creeper adorn the verandah, and the lawn boasts of two really magnificent specimens of Purple Beech and Catalpa, the latter unequalled by any in Kew. The place is the property of the trustees of the late Mr. James Wild, and is now used as a preparatory school for boys, who find scope in the ample grounds for cricket and other games. North End House is not without its literary associations, although it is difficult to identify these. North End, which lay in old times

as an engraver and etcher, Thomas Worlidge by name. Where the vintage was once gathered we have now a vast railway station.

FRUIT GARDEN.

W. COLEMAN.

RENOVATING THE APRICOT.

THE Apricot, like Héricart de Thury Strawberry, having gained for itself a bad name, the question which naturally crops up is this, What can be done to restore it to the front rank, and at the same time prove that the professional has succeeded in overcoming a difficulty? That difficulty undoubtedly is the outcome of good living, as we find trees having the run of rich vegetable borders making enormous growths which never ripen, and throwing sheet after sheet of breast-wood well into the autumn. When Peaches or Pears

again in the ordinary way complete the operation. The Apricot, however, being an extraordinary tree, the treatment to be perfect and permanent in its effects must also be extraordinary, for once the roots are cut off on the verge of the rich nitrogenous border, they must not be allowed to go poaching for poison in the future. The *modus operandi* is not difficult; neither, as compared with the certainty of a crop in fair seasons, is it expensive. Having decided upon the width of the wall path which is to constitute the root-run, drive stout stakes made out of Oak quartering in a straight line along the centre of the trench and 4 feet to 6 feet apart consecutively. Against these, on the wall side place stout boards, with straight edges from the saw, the first resting on the drainage, the last with its top side high enough to make the wall path quite level, with all margin for mulching and watering. Shorten all the strong roots, fill in with good sound loamy and rubby compost, relaying the roots as the work proceeds and ram freely.

When the first foot has been filled in flood the trench with water, leave the work for a night to give it time to settle, then fill in, ram the remainder and repeat the watering. When the water has passed away, point up the whole surface of the wall path, soak with water if at all dry, and top-dress with a thin layer of soft loam of a calcareous nature, intermixed with one to four of old lime rubble. Tread this as hard as a board and mulch for the winter with long stable litter. Hose the trees if the weather is dry and mild, and consider well the best mode of dealing with the spurs and branches. If young and vigorous and the spurs are close at home, pruning will be light, consisting principally of thinning; but if old and the spurs hang like thatch, get rid of the worst of the oldest limbs, shorten back the spurs to the bud or buds generally found close to the base, and follow up by detaching the trees from the walls precisely as all good growers detach their Peaches. Wash the wood well with rather strong soapy water, secure the branches in small bundles to stakes, and there leave them. Brush down the old walls with a hard broom and give them at least two



A picturesque London garden: North End House, West Kensington. Engraved for THE GARDEN from a photograph sent by Mr. Scott.

behave in this way we root-prune moderately or severely, or we lift bodily and replant in poorer compost. Also we spur-prune, thin out the shoots, and allow wall space for the fullest extension. The Apricot is equally amenable to identical treatment, and being what may be termed a precocious tree, now is the time to commence operations with those which have produced more wood than fruit this season. Rich south and west borders for early vegetables being invaluable to the private gardener, these, as a matter of course, cannot be dispensed with, but being injurious to the Apricots, a compromise in some way or other must be thought of. Throwing out a trench the whole length of the border, and 3 feet to 5 feet from the foot of the wall, is the first step; working down into and correcting the drainage is the second; when shortening the roots and filling in

coats of quicklime wash, toned to any agreeable colour by the addition of soot, Venetian red, a little sulphur and paraffin, in proportion of 1 pint to a pailful. Defer nailing in until the buds begin to swell, probably towards the end of January, then lay in thinly, but full length, and at once hoist the framework for carrying the coping boards and front canvas or fishing net used for protection. Keep the wall path or border well covered with litter and plentifully supplied with water. Thin the crop when set, mulch with rotten manure or feed with liquid, and give an abundance of water throughout the summer. The sceptical may say an ounce of practice is worth a pound of theory, but these remarks combine the two, for they portray the practice of a most successful gardener, who has brought wayward trees into

the same locality, may interest our readers. Close to Addison Road Station stands yet, though sadly encroached upon, Lee's well-known "Royal Vineyard Nursery." The name is derived from the fact that the nursery was at one time an extensive vineyard, from whose Grapes a red Burgundy was produced. Large wine-vaults were discovered there, in which the wine was stored. In a thatched cottage on this nursery lived, in those days, a man famous in his time

subjection, and successful practice is the best of theory or nothing.

DESSERT PEARS.*

THE FEWEST NECESSARY TO SUPPLY RIPE FRUIT FROM AUGUST TO MARCH.

The subject of this paper was suggested to my mind by the controversy about a reduction of the number of the varieties of Pears that took place in one of the horticultural journals a few months since. The general tone of that discussion went to show that there was a unanimous feeling in favour of reducing the number of varieties, but to what extent, opinions differed greatly, twelve being suggested by more than one writer as the maximum number of varieties—a proposition that in some respects I had a good deal of sympathy with, but the number twelve ended, so far as I was concerned, simply because I knew from years of experience that no twelve kinds that could be named by the greatest expert in Pear lore would suffice to give an unbroken succession of ripe fruit throughout the Pear season—say from the beginning of August to the middle of March. That twelve kinds might be selected that would extend over the Pear season is quite another matter. I have long had the honour to serve an employer whose favourite fruit is the Pear, and, consequently, have had to give special attention to it; and if one point more than another has had to be studied, it is that of quality, a solitary flavourless fruit of an otherwise good sort very often being the cause of the condemnation of the variety generally. I mention this to show that my experience has been gained at some cost of labour and anxiety; and at the risk of being considered egotistical I think this entitles me to speak with some degree of confidence about this matter of reduction of sorts. Every fruit grower knows how precarious and how variable the Pear is in different soils, aspects, and positions, and no twelve kinds, however good they may be in one garden or district, will be equally so in another, even but a mile or two away, nor even in the same garden can they be relied on to be of the same excellence any two consecutive years; and it is this precariousness that I think renders it necessary to grow a good number of varieties. For the purpose of this paper I have closely examined the Pear notes in my diary for several years, in which are noted the dates of gathering and ripening, and the duration, *ie.*, the time they continued fit for table, and from these notes I have compiled a list of twelve that, supposing I was compelled to grow only that number, would be likely to give me the most regular (not constant) succession of fruit. They are placed in the order in which they ripened here: Williams' Bon Chrétien, Fondante d'Automne, Beurré Superfin, Marie Louise, Thompson's, Doyenné du Comice, Glou Morceau, Winter Nelis, Josephine de Malines, Huyshe's Victoria, Easter Beurré, and Bergamote d'Esperen.

These twelve kinds constitute the cream of all the varieties (nearly one hundred) that are grown here, and out of the twelve there are but two that are at all liable to prove of doubtful quality, and this from a cause over which we have no control, namely, a sunless season. The two kinds in question are Easter Beurré and Bergamote d'Esperen, both of them late varieties, and requiring a longer season of sunshine than the others. I may, however, add that I have occasionally in a sunless season had recourse to means that have tended to make both of the kinds palatable, namely, by wrapping the fruit separately in tissue paper, and placing them in shallow baskets in a dry, warm room for ten days or a fortnight before the fruit were required for use. And now with respect to the question of the number of varieties "necessary to ensure a continuous supply of ripe fruit," I have, after considerable deliberation, founded on the practical experience of many years, come to the conclusion that it is next to impossible to accomplish the feat with a less number than

twenty-five varieties. To some this number may appear excessive, and to such I ought to explain that my experience is given from the standpoint of a private gentleman's gardener—say of a large garden—and from which liberal supplies of Pears are demanded all the season through, and therefore it is necessary to have, as it were, two strings to one's bow; as, for instance, if Williams' Bon Chrétien Pear run short, I ought to have Beurré de l'Assomption to supply the lack; or if Marie Louise be scarce, I must eke out with Beurré Bosc; and so on to the end of the chapter.

I regret that I have not practically tested with how few it is possible to keep up a constant supply, but I am sure I should fail if I undertook the task with a less number than twenty-five, and the following are their names, and placed in order of ripening: Souvenir du Congrès, Williams' Bon Chrétien, Beurré d'Amanlis, Fondante d'Automne, Louise Bonne of Jersey, Mme. Treve, Beurré Hardy, Beurré Superfin, Seckle, Marie Louise, Doyenné du Comice, Thompson's, Duchesse d'Angoulême, Glou Morceau, Winter Nelis, Comte de Lamy, Beurré Bachelier, Josephine de Malines, Winter Crassane, Huyshe's Victoria, Olivier de Serres, Easter Beurré, Ne Plus Meuris, Knight's Monarch, and Bergamote d'Esperen. All these are generally well-known varieties in most parts of Britain—proof sufficient, I think, of their excellence; and I can vouch for their reliability for this district in respect of constant and free-bearing, and their high quality.

The least meritorious in the list are: Mme. Treve (quickly over), Duchesse d'Angoulême (gritty), Beurré Bachelier (mealy), and Ne Plus Meuris (gritty), yet I know no other four kinds that can—all points considered—replace them. Lest anyone should conclude from what I have said as to the number of kinds to ensure a regular succession of useful fruit, that that is all that is required to make certain of the supplies, I will undeceive them at once by saying, No. There is no fruit that gives better returns for labour expended, and none that more quickly repays the "let alone" policy that one is occasionally compelled to behold. As regards the former, nearly all our trees are grafted on the Quince, from which stock it is no exaggeration to say that we get at least double the fruit that we do from trees on the Pear stock, and high feeding is therefore a matter of necessity; but the labour of applying these manurial mulchings we place as a set-off against that of the time expended in root-pruning that nearly all trees on the Pear stock require about every alternate year, and the fruit is neither so numerous nor so well coloured, and not superior in quality. No, if good crops of fruit are expected annually, water and mulch, mulch and water, must be the order of the day all through the fruit-swelling season. They who by reason of restricted space can only grow a few varieties, and whose demands for fruit are, as a matter of course, proportionately restricted, may do something towards lengthening out the supply of ripe fruit by gathering the same variety of Pear at varying intervals of from a week to ten days. The fruit of most varieties—more especially the earlier kinds—will then ripen at similar intervals, and thus the season of ripe fruit may be considerably extended. To those who have unlimited room, and can therefore grow the required number of varieties to ensure supplies, this piecemeal gathering is not of so much consequence; nevertheless I strongly advise its being done with any varieties that ripen rapidly, such as Citron des Carmes, Jargonelle, Williams' Bon Chrétien, and Fondante d'Automne.

Pruning fruit trees.—To minimise the evil effects of such a season as the last, much, I am persuaded, can be done by training fruit trees so that light, warmth and air can play their important parts to the fullest possible extent, and therefore ensure some approach to wood ripening. The practice of trimming fruit trees into one stiff formal restricted shape has existed too long. The amount of fruit cut away in English gardens in pruning and training fruit trees is simply incalculable,

solely from this desire for symmetrically shaped trees. Prune by all means so far as is necessary, that is, by entirely removing superfluous growths before the leaves fall to enable light and air to have free play; also by cutting out superabundant spray when it may prejudice the fruit buds and spurs. Let the leaves have free exposure, then the sap will be thoroughly elaborated and the first essential towards fruitfulness will be secured. But remember that an injudicious use of the knife can only lead to worse evils than will befall a tree if left entirely alone.—W. P. C.

FRUIT FARMING.

I WAS pleased to note (GARDEN, September 21, p. 281) that the Fruiterers' Company are taking the lead in an effort to arouse the public mind on this important question. The ways in which this can be done are various, and doubtless the offering of prizes for the best kept fruit farms, orchards, &c., is a good idea, but it must be supplemented by lectures by really practical growers, by articles in the press, and by pamphlets or leaflets, as it is only by organised and persistent efforts that anything like an impression can be made. I believe that results exceeding the expectation of the most sanguine will follow if only the thing is heartily taken up. The horticultural press has of late shown unmistakably that it recognises the importance of the issues involved as far as more space is devoted to market culture in all its branches than formerly. I well remember the days when the price list in Covent Garden was all the information we ever had that such a thing as market fruit, flower, or vegetable culture was carried on in this country, and even this was more misleading than helpful, as things quite out of season were quoted with as much regularity as those in daily use. But all this is changed. The market reports show clearly that they are records of the past week's sales, and the graphic descriptions of places of note are not all confined to ducal establishments, but are varied from time to time by illustrations and descriptions of the working establishments that supply our markets. The space devoted to the market culture of the leading fruits, flowers, and vegetables equals that which used to be devoted to bedding out and table decoration, a rather convincing proof that the current has set in in the right direction. Then the daily papers give us articles from time to time.

But above and beyond the question of exciting interest there lies the question of the obstacles that have so long barred the way to those who in the past have been ready and willing to embark in the fruit-growing industry, but who on a careful survey of all the existing difficulties have unwillingly decided to go in for something where their hard-earned savings and their labour would be safer than if invested in this venture. It would weary your readers if I described half the cases that have come under my personal knowledge; if I described how some growers, after paying exorbitant rents, extraordinary tithes, &c., and just beginning to reap some return, have found on the expiration of their too short tenancy that they must either pay double or go and start afresh, without any compensation for all they have done. If English fruit farmers had not been very patient, they would long since have turned upon the cruel and unjust treatment they have received from the landlords. I can confidently say from daily contact with would-be growers for market, that before planting on a scale to be of any use to check competition is done there must be security for the outlay, without which it cannot be done, and there must be a readjustment of taxation, as the land bears more than its share. If this were done, there is a bright future in store. I do not think that State control or interference is advisable in any way, more than to see that there is a fair field and no favour; but it cannot be called fair when directly a person adds value to land he is called on to pay for what he has himself created. Other things would soon right themselves, but whether it would be done by very small holdings, medium-sized, or large concerns, time alone can

* Paper read by Mr. W. Wildsmith, Heckfield, at the Apple and Pear Conference at Chiswick, October 17, 1888.

determine. But very much more might be done in the hardy fruit department than has yet been even attempted if the barriers to progress I have already touched on were removed, although from my own experience I would rather have a mixed variety of products to depend on than to go in solely for any one crop. But with a varied stock, when one fails another does well. I may mention that one of the obstacles that the promoters of this movement will have to encounter is the reluctance of *bona fide* market growers to give any information on their mode of culture, as the majority of the old school still believe in trade secrets, and that they can keep the business in their own hands by withholding any information from those who are anxious to learn. The advent of cheap literature has placed the desired information within the reach of all, and we now find hundreds of working men studying their horticultural papers and trying their hand at various branches of gardening, and doubtless fruit culture will come in for its share of attention by-and-by, although up to the present hardy fruits have been very much neglected even in places where all other branches of horticulture are done well. I look upon it as little less than a disgrace to our calling that while we can beat the foreigner with exotic fruits of all kinds, we are dependent on him for the supply of Apples and Pears for quite half the year, while land suitable for their culture is going begging for tenants. That the culture of Apples would pay better than many crops now largely grown I am confident, and while I pay no heed to exaggerated statements of so many hundred pounds an acre being realised by their sale or be inclined to plant a single tree more on that account, I would not delay the planting of a single tree I have space for because a good many orchards are fruitless this year. If we go in for this calling we must look for failures sometimes and balance them with the successful years. Those who are not afraid of work will, I feel confident, be successful, provided the existing hindrances are cleared away.

JAMES GROOM.

Gosport.

Peach Sea Eagle.—This is the latest Peach on the Peach wall at Gunnersbury House. It is one of the several varieties raised at Sawbridgeworth by the late Mr. Thomas Rivers. The tree is a good grower, and it is laden with a fine crop of fruit bright in colour, although it is commonly regarded as a pale coloured variety. All the trees against this wall have made a fine growth this season, and the wood is ripening off admirably. Indeed, this appears to be the case with all fruit trees, and gardeners are anticipating a good fruit season, in 1890.—R. D.

Flavour in Peaches.—From the letters which have appeared in answer to your questions about Peaches, it would seem that there is a variety of opinions as to the cause of inferior flavour in fruit sent to market. Confining the question, as you do, to flavour, I take it that you allude to fruit good in other respects, such as size and colour. If so, this upsets the argument of overcropping being the cause of the evil, for very few of the fruits on an overcropped tree ever reach the size or colour necessary to marketable Peaches. No doubt very early forcing in a too close and moist atmosphere is responsible for a lot of bad flavoured fruit, but this should not affect the main crop, and it is to this that we have to look for a solution of the question. I think the great majority of your correspondents make far too much of the "picking-before-ripe" theory. Very few growers for market are foolish enough to pick their fruit until it has commenced ripening and which may be seen by the transparency and soft yellow colour of the skin. When this stage is reached the fruit is quite fit for gathering, and should not be left on the trees any longer, unless it is intended for home consumption, when another day might slightly improve it. If such fruit is properly packed direct from the tree and sent off at once, it will take little or no harm in travelling, but will turn out well and be very nearly equal to that left on the trees if eaten at the right time, and here seems to me to be the true reason of bad flavour. This right time is

allowed to pass and deterioration sets in, although to all outward appearance the fruit is as sound and good as ever it was, and will remain so for some time longer, but the piquancy of its flavour is lost and will never be regained, and one is tempted to say, "What a flat-flavoured Peach," and the variety or the grower is condemned. I would rather eat a Peach at its best that had been gathered when hard enough for safe travelling than one ripened on the same tree and kept twelve hours too long.—J. C. TALLACK, *Livermere Park*.

WORK IN FRUIT HOUSES.

PEACHES.

Early houses.—No time should be lost in getting all root-lifting and renovating brought to a close, and vacancies properly prepared for large trees from the open filled up. The autumn having been so dry and favourable to the ripening of the wood, the largest of open-air trees that were root-pruned last season may now be lifted with perfect safety. The work, as a matter of course, must be carefully and quickly performed, a very important preliminary operation being one or two good soakings of water before lifting is attempted. Bearing trees kept in good condition for lifting, by annual root-shortening invariably carry large, flat, matted balls of rootlets, which set about the work of recuperation the moment they are placed in their new home, but being more or less furnished with leaves, the soil should be thoroughly washed in with tepid water, the best of all rammers for solidifying the compost amongst the tender fibres. When placed in position and tied loosely to allow for settling, such trees may be spared distress by the application of slight shade, if only for a few days, by being kept rather close and frequently moistened with tepid water through the syringe. Treated in this way, large trees lifted when in full leaf will be re-established within a month, when ordinary management will fit them for forcing with the others, but instead of shortening a single shoot, all should be left intact until the young fruit is set and swelling. It may appear early to pen this remark, but knowing that pruning and training will soon be general, it must be now or never to secure newly-planted trees from the treatment accorded to their established neighbours. A neatly trained tree with shoots straight and tight is a pleasing sight, but, like tight lacing, it does not favour a free circulation, as many of the cells are distorted or closed by pressure and tension. Indeed, so unnatural is the method of severe training, that, beyond laying in the main shoots, I question if much might not be gained by deferring the tying of all the trees until the blossoms are ready to open.

Pruning, as a matter of course, may be performed, but former directions having been attended to, this will be very slight, merely the removal of a shoot here and there and a general polishing of imperfect cuts made when the trees were in full foliage. All trees, no matter how large or old, should be detached from the trellis and carefully washed with strong soapy water, the same solution being used for the wires and woodwork. The trees having been quite free from insects, one washing will suffice, and painting with all sorts of mixtures, which often do more harm than good, quite unnecessary. The old wood, of course, may be painted with a good loamy composition, but scale being present, two washings properly performed will be found better for the trees and much safer than painting.

Succession house.—If the buds are well advanced, the best proof of thoroughly ripened wood, the lights may be removed for a month for repairs and painting, otherwise they may remain, when the trees must be well hosed once a week to keep down red spider. The roots, too, must be kept thoroughly moist, certainly until the leaves fall, and then they may be cleansed and trained, and kept freely ventilated until the time arrives for starting. It is not a good plan to winter plants, especially those of a tender nature, in Peach houses, as the slightest confinement on mild days or treacherous nights keeps the buds in a state of

excitement at a time when they should be resting in a dry, cold atmosphere. In many places there is no choice in the matter, as we frequently see bedding plants crowded under the Peach trees, when occasional watering keeps the atmosphere moist, and early closing or gentle firing on frosty nights produces enervating conditions favourable to the decay of the tender germs of the flowers, and fatal to their development in the spring.

Late houses now clear of fruit must be well cleansed by frequent washing with the hose, also by a thorough smoking where there is a suspicion of green or black aphids lurking upon the points of the half-ripened shoots. I generally shut up with dry sun heat on fine afternoons, and apply steady firing until the wood is ripe, but the autumn having been so favourable the trees this season look unusually promising. A little steady fire heat, nevertheless, can do no harm, always provided ventilation is on a liberal scale, and the temporary occupants do not suffer when overtaken by a few degrees of morning frost. Sweet Bays, Myrtles, and Chrysanthemums, which suffer more from damp than cold, may be accommodated, but before they are introduced, the Peach trees should be well thinned out to let in light and air, and root-pruning or top-dressing finished off without delay.

CUCUMBERS.

If any of the old plants now in full bearing show signs of declining, the fruit being of little value, they should be cut over by degrees and encouraged to form fresh lateral growths without further delay. The secret of success in restoring old plants to profitable fertility rests in a great measure not only in clearing off all the existing fruit and faulty leaves, but also in stimulating the roots by the addition of fresh rough compost and the renovation of the bottom heat. An excellent winter compost may be formed by taking light rich turf, free from worms, say two-thirds, old lime rubble or hair plaster one-third, ten per cent. of the whole of bone-dust, and a dash of soot, which should be thoroughly mixed and placed in a dry warm corner for future use as it is wanted. As this improves by being kept on hand, a good quantity may be made up at once, but little and often is the principle upon which it should be used. Where the plants are grown upon hot-air chambers or in narrow pits with the bottom-heat pipes lying in broken brick, the supply of tepid water must be very liberal and sufficiently frequent to penetrate to and keep the lowest roots in a thoroughly moist medium. Although no one can lay down hard and fast lines for guidance in giving the supply, I may say that dribbling or mere surface watering must be avoided, as the best pits in the world cannot be kept clear of spider and mildew when the lowest stratum of compost is dry. Plants in pots plunged in moist fermenting material derive a great deal of nourishment from the bed, but here the same principle must be observed, and the root-run being limited, clarified liquid, guano, and soot water always on the weak or safe side may be freely used. Direct syringing having been discontinued, atmospheric moisture and at the same time a brisk bottom heat, not less than 80°, must be secured by frequent additions to and an occasional turning over of the tan or leaves. If young plants are awaiting the removal of late Melons, the latter should be pushed on with all possible speed, otherwise the loss incurred by cramping the roots and starting red spider will hardly be compensated by an ordinary crop of late Melons. In the arrangement of October plants intended for early year use the stems should not be placed too near the hot-water pipes, neither must they be crippled by being crowded together. Make the balls thoroughly moist before the plants are turned out, slightly crush them to set the roots at liberty, pack extra warm soil about them, give a little warm water, and if possible cover at night to save fire-heat.

FIGS.

With very few exceptions, ripe Figs in the latest houses will now be over, and temporary cleansing combined with thorough maturation of the wood will receive attention. Where brown scale or bug

have gained a firm hold, the dry, warm atmosphere of the Fig house favours their rapid spread, not only over the trees of their choice, but also over pastures new, and so troublesome is the bug, that a check should be put upon it at every turn. The first and usual course after a crop is cleared is a hose bath, but pure water in this case only spreads the enemy; therefore, this being undesirable, the introductory process should include a most vigorous attack with strong soapsuds, into which a few drops per gallon of turpentine have been introduced. This will not annihilate the bug, but it will soothe and compose the adults, and keep in check the young until such time as the house is ready for the winter cleansing. If applied late in the evening, the cleansing wash may be deferred until the following morning, when all straw mulching and covering must be cleared away and burned. These sharp dressings may be repeated with the best results, as, independently of being prevented from using this, that, or the other house for plants because they contain bug, the bug will find its way to the plants, and that in a very short time, when troubles to the easy-going man are provided for a lifetime. The soporific wash has a most decided effect upon the scale, but instead of cleansing with cold water, the operator will be quite safe in using it at a temperature of 120°. With the exception of getting overrun with black thrips, a dark-coated, inconspicuous enemy at least for a time, there is nothing more troublesome than a run of unchecked bug in the autumn; hence these protracted remarks upon producing a decided check before fresh healthy plants are polluted. When pot trees are infested, the best plan is to take them to a shady place away from the ordinary traffic and dip them tops and pots in the soapy solution; they may then be laid on their sides to prevent the wash from draining down into the balls, and well syringed with pure water in half an hour to cleanse the foliage. Prevention being so much better than cure, it is to be regretted that a cheap, home-made stimulating insecticide is not more frequently and systematically used as a dip for plants presumably clean when they are ripe and resting.

FIGS FOR FORCING.

The taste for good forced Figs being steadily on the increase and their culture extremely simple, a great number of fruit growers, including amateurs, now try their hands at a fruit which is not known at sight by nine-tenths of the masses. Figs established in pots can be obtained at any season, the best being that which succeeds cessation of growth in the autumn. All large trade growers keep them in stock, but, like other plants seldom inquired for, only a few are able to supply them in good bearing condition. This being so, anyone wishing to have good plants likely to give a crop of fruit before next midsummer should select at once, or, lacking the skill, allow someone to do so for him. The largest trees met with in nurseries do not take up much room in the forcing house at first, but if well managed they gradually increase in size and are all the better for age at the end of a lifetime. Those who would have ripe fruit in April and May must have plenty of hot-water power and a moist fermenting bottom heat equal to that required by early Melons. Bottom heat, indeed, is a very important factor not only in the forcing house, but also in the open air, as we find trees in the warm sandy soils along the south and west coasts producing good average crops year after year, whilst others on heavier loams inland fruit sparsely and get sadly injured by abnormal winters. Having so often given the fullest cultural details, I do not intend to enter into them here, but passing the forcing pit I may say most delicious Figs may be grown by anyone having command of a pit in an ordinary hot-water vinery; also by the less fortunate whose best house is well glazed and has a good south aspect. From the forcing pit the trees will give two crops in a year; from the vinery they will yield a full crop and a later sprinkling very acceptable for private use; and from the last, without the aid of bottom heat pot trees placed on a raised bed of earth will give a good succession through July and August. The best sorts for forcing

are Early Violet, Brown Turkey, White Marseilles, Negro Largo, and Osborn's Prolific. For succession or giving one crop in the pot Fig house the following may be added: Angélique, Bourjassotte (Black and Grizzly), Col di Signora Bianca, Col di Signora Nero, Dauphine d'Argenteuil, Dr. Hogg, Grosse Monstreuse de Lipari, Grosse Verte, Ischia (Black and Brown), Black Marseilles, and Figue d'Or.

WORK AMONGST HARDY FRUITS.

PRUNING.—Late Peaches now clear of fruit may still be pruned and regulated to let in light and air, as well as any gleams of October sun with which the trees may be favoured. The benefit from the latter may not be great, still the slightest warmth absorbed by the exposed brickwork and given off gradually may tell advantageously should the month continue dry and rainless. Late trees, it is hardly necessary for me to say, should be freely disbudded in the spring. There should be no crowding nor crossing through the summer; each future fruit-bearing shoot should be short-jointed, hard and red or reddish brown, and then the operation of pruning will be pleasant, as there will be fair promise of a perfect blossom. It is as yet rather early to think of winter pruning, the only fruit trees or bushes at all likely to have lost their leaves being the Currant, and these when this stage is reached may be pruned and thinned, especially if cuttings are wanted.

PLANTING.—The ground hitherto has been too dry, not for planting, but for lifting, especially upon light soils, which do not work well or part with the roots in satisfactory condition until after a plentiful supply of rain. Heavy soils, on the other hand, should be broken up and planted before they get saturated, particularly where water is plentiful and the young trees can be well watered before they are disturbed. If in full leaf when transferred the roots may be well watered home, but otherwise they will take no harm although the winter may not prove a wet one. Those who buy in their trees a year in advance of course have advantages, as they can choose suitable times for lifting, and in this way get all their work finished early in the autumn. All cannot adopt this plan, good as it may be, as there is no question that autumn planting favours the formation of new roots, when the trees start kindly in the spring and go well through a dry summer, where those which are planted in the spring fail and not unfrequently die. Another great advantage is found in holding the whip-hand over the work, as winter operations cannot be brought to a close so long as the arrangement of the trees is in arrears. Raspberries and all bush fruits most certainly may be planted, and, provided they are carefully moved and mulched, the first will make good canes, and the bushes, if old enough, will bear fruit next year.

ROOT-PRUNING.—Trees against walls, garden pyramids, and bushes, one may assume, having been treated in accordance with their requirements, and the weather having been so fine, the roots will be making a fresh start in the new compost. Large standard trees, especially those in turf orchards, as a rule, are left over until November; indeed, the work being heavy and the soil beneath the turf very dry, many persons, from choice as well as necessity, delay the operation to wet periods unfavourable to treading and working upon arable soils of a retentive nature. No large tree of mature age should be cut completely round in one season, as such a course of procedure might end in death, but by spreading the work over two seasons, in some cases over three, very old and enervated trees may be restored to fertility. The light obtained does not always pay for the candle; therefore the variety should decide the question as to whether it is best to root-prune or grub up and plant a young one. The great failing in old Grass orchards is a feeble growth brought about by neglect and poverty. Blossom buds may be formed, but owing to the low vitality, as happened this year, the trees may be too weak to develop the flowers and set their fruit properly. In cases of this kind the turf and surface soil may be broken up down to the roots, the area disturbed being regulated by the spread of the branches. Rotten manure, road-scrappings and

sidings, burnt earth, wood ashes, and not unfrequently quicklime, may be given with most beneficial effect. Soot, bone-dust, guano and common soda may be used where breaking the turf is objectionable, but the most effectual mode of renovation includes loosening the surface, destroying the roots of the Grass and letting in the rain, sun-heat and fresh air.

THE FRUIT ROOM, in too many places but scantily furnished, must now receive attention. Where Apples are plentiful, all, with the exception of a few of the very late ones, will now be under cover, if not on the shelves, and throwing off moisture. Many samples being extremely grub-infested, they should be stored as thinly as space will allow, and then they will require frequent examination to prevent the faulty from tainting the good. The room cannot be too freely ventilated at first, especially in mild weather, but once the sweating process is over the supply of air may be greatly reduced, and darkness being favourable to long keeping, the shutters may be kept closed. A good Apple room being too cold for dessert Pears, separate accommodation should be provided for these, or lacking this they should be removed to a temperate room to ripen. W. C.

NOTES ON PEACHES.

The following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

— The best Peaches I have tried here for flavour are *Violette Hâtive*, Dr. Hogg, *Noblesse*, and *Grosse Mignonne*; *Nectarines*—*Violette Hâtive*, *Pitmaston Orange*, and *Roman*. I have tried several newer and larger kinds, but though fine to look at they are deficient in flavour to the above. The want of flavour in market Peaches I should say is through overwatering the trees to get large fruit and undue forcing. To have a good flavoured Peach the trees must have plenty of air and clean slow growth. Outdoor Peaches for flavour depend on the situation and season. The Mussel Plum stock is generally most to be depended upon for stocks. I find outdoor culture in this neighbourhood does not answer except in a few favoured situations. Of late years the wood has not ripened, and this leads to no crop and more often death to the trees. Very few attempt to grow Peaches outdoors now, as glass-houses can be so cheaply erected.—O. GOLDSMITH, *Polesden, Dorking*.

— Peaches, as a rule, do fairly well here, but the crop is thin this season. The trees are healthy, and the sorts I grow do not suffer greatly from canker, probably owing to my having discarded all those that appear too tender for the situation. The trees I have are upon the Plum stock, which here seems to suit them very well indeed. The best flavoured Peaches I have are *Royal George*, *Violette Hâtive*, *Noblesse* (tree rather tender), *Grosse Mignonne*, and *Lady Palmerston*, a most valuable kind, which ripens between the mid-season and late kinds. It is a yellow-fleshed Peach of delicious flavour, tree hardy, and a sure cropper. For late sorts I grow the *Salway Peach* and *Lord Palmerston*, both hardy sorts, producing very large handsome fruits, but of poor flavour, and they rarely ripen satisfactorily, but make a good show. Of *Nectarines* I grow *Elruge*, perhaps, on the whole, the best *Nectarine*

grown. Rivers' Early Nectarine is also a valuable kind, and Lord Napier is a delicious and very early Nectarine. It comes in quite a fortnight before Rivers' Early, and is of large size and hangs well after it ripens—a useful quality. I also find the Stirling Castle Peach an excellent variety, fine in size and of good flavour. It possesses a remarkable acidity, different from any other Peach I have tasted, and is a great contrast to that insipid taste characteristic of some fruits when imperfectly ripened. The want of flavour often found in Peaches sent to market is owing, I think, to the fruits being gathered before they are sufficiently ripe. If Peaches are gathered before they are quite soft, and part freely from the tree, they are never so good in flavour as when allowed to mature properly.—ROBERT SQUIBBS, *Ickworth Gardens, Bury St. Edmunds.*

—The best Peaches for flavour are Noblesse, Royal George, Early Grosse Mignonne, Violette Hâtive, and Stirling Castle. In regard to new kinds I can give a high place to Alexander in point of flavour and colour. I consider that the want of flavour in market Peaches is largely attributable to overcropping, over-stimulating the trees to cause them to swell large fruits, which also fetch the best prices, flavour being a second consideration. The Plum is the best stock for the Peach and Nectarine, as it is more hardy than the Peach. It grows more freely and is more productive. The stock has not so much to do with canker, this being more due to soil and climate. Canker is generally most prevalent in wet districts and on cold heavy soils. The Peach stock I should consider the worst under such circumstances. Outdoor culture in this district is only partially successful; after a warm autumn the crop may be good the following year.—WM. M. BAILLIE, *Luton Park, S. Beds.*

—The best Peaches for flavour are Royal George, Violette Hâtive, Dr. Hogg, Grosse Mignonne, Barrington, Goshawk. I grow the following varieties out of doors on a south wall and on heavy clay soil: Royal George, Violette Hâtive, Dr. Hogg, Condor, Alexander, Noblesse, Grosse Mignonne, Barrington, Goshawk, Early Beatrice, Lord Palmerston. The six sorts named above are the best flavoured with me. Lord Palmerston grows very fine here, but is very poor flavoured. Alexander comes in very early, viz., the second and third weeks in July, and is a heavy cropper, but the flavour is not quite so good as that of some of the later sorts. Early Beatrice follows Alexander, which carries me on till the main crop comes in. Alexander is a great favourite with me, and coming in as it does so early is very acceptable. The natural soil is not favourable to Peach growing, but with judicious management and a favourable season I always secure a good crop. Owing to the wet, unless season last year the wood was not sufficiently ripened, the result being the buds dropped off this, and many trees are only carrying a poor crop of fruit. Nectarines do well here, and I grow the leading and best sorts. I attribute the cause of market Peaches being in many cases so inferior in flavour to two reasons. Firstly, they are forced too much in order to get them into the market early, and so secure the best prices; secondly, they have too much moisture just before ripening. My plan when growing Peaches under glass is to withhold moisture at least a fortnight before gathering the fruit and to admit all the air possible. I prefer the Peach stock to the Mussel Plum, although mine here are all worked on the latter stock, but where I was apprenticed we had them on both stocks, and those on the Peach stocks were by far the best and healthiest trees. I am of opinion that the stock has very little if anything to do with canker, for if Peaches are planted on a south aspect in suitable soil and in a well drained border and properly managed, I think there is not much fear of disease. Of course the Peach being a native of a warm climate will under the best treatment be subject more or less to disease in our changeable climate. Very often Peaches are planted in a new border before it has settled down properly, the result being that after one or two years from time of planting the trees become sunk as it were, and then instead of lifting

them, more earth is added, which does more harm than good. Of course, a good practical gardener would never think of planting trees in such a manner, but in many places gardeners are often kept short of help, and employers are very often anxious, on building a Peach house or making a new border to see the trees planted at once, and the work is hurried through, and hence the above results. My plan if possible would be to make the border early in the summer months in dry weather, and plant the trees on raised mounds. There are no places round here that I know of where Peaches are grown in any quantity outdoors, but, judging from places that I have visited where some are grown outside, they do very well.—W. SHEPHERD, *Greenhurst, Capel, Dorking.*

—For flavour only I find Noblesse (old), Alexandra Noblesse, Bellegarde, Early York, Stirling Castle, Royal George, Grosse Mignonne, Bar-

proper height to form the head. Dwarf trees trained fan-shape and worked on the Mussel Plum are the most productive.—H. MARKHAM, *Mereworth Castle, Kent.*

ORCHIDS.

W. H. GOWER.

ODONTOGLOSSUM PHALÆNOPSIS.

THIS exquisite gem, I know, has by the more modern revisers been put into the genus *Miltonia*, but I cannot see the advantage of the change. It seems like robbing the genus of some of its greatest ornaments, and so I am fain still to call them *Odontoglossums*. However, call them what we like, they are superb ornaments in a plant house, and this species, *O. Phalænopsis* (here illustrated), one of the oldest and most beautiful in the genus, is now flowering in great profusion in Mr. Williams' nursery at Upper Holloway. It is nearly forty years ago since Schlim first found this plant in the forests of New Grenada, at considerable elevations, and sent it to his employer, M. Linden, then, as now, of Brussels. This was in the year 1850, the first year that I started working amongst Orchids, and about six years afterwards this gentleman exhibited it in London in flower, where it was admired by everyone who saw it. No one seemed to succeed well with this plant, however. It was bought by my employers, and I about this time had got the cool system fairly under way. The plant lived and grew with me under this treatment, but it did not look happy, and flowered very poorly. About twelve years after this, happening to be in Dublin, I called in at the Lord Chancellor's garden, and here I saw the plant doing remarkably well with his gardener, Mr. Byers. It was still a rare plant in our gardens, and the price asked for it at that time would almost appear fabulous now; but here I saw the difficulty was solved. The plants of this species were grown warm, and this, I have found since, is by far the best system, and indeed the only system to grow it well. The difficulty, however,



Odontoglossum Phalænopsis.

rington, Dymond, Hale's Early, Walburton Admirable, when perfectly ripe, to be the best. Alexandra Noblesse and Early York are very certain croppers. For early use Waterloo and Alexander are good. The former does well indoors here, crops regularly, and I have had fruit half a pound each this year. Although the flavour is not equal to that of Royal George, the fruit ripens fully six weeks earlier and a fortnight to three weeks earlier than Hale's Early. Very late Peaches with the aid of glass are fairly good for flavour and size, while outdoors I think it is almost useless to attempt growing them, as they seldom ripen satisfactorily, and if taken indoors to finish are never so good as they ought to be. To get the flavour good the trees must not be over-cropped, and the fruit should not be gathered before it is ripe. Possibly these points may to some extent account for flavourless fruit in the market. Standard trees worked low, as a rule, make the finest trees, but do not generally bear so freely as those worked at the

arises, how to keep the thrips away, and this difficulty also arises with *O. vexillarium* and *O. Roezli* in a marked degree. When I was at the Messrs. Rollisson's, at Tooting, we had plants of this species in the Cattleya house, where they became infested with thrips, indeed a regular pest to the plants. At last I got the plants removed to the East India house, where, set up on a moist bottom near to the glass, they, to my great joy, grew like Willows and flowered profusely. At that time the Messrs. Rollisson had by far the largest stock of this plant in the trade. This *Odontoglossum* is now in great beauty with Mr. Williams, and I recommend the species to every grower of these plants. It may be easily grown into good specimens, but not with other *Odontoglossums*, as it enjoys heat, light, and any amount of moisture with the heat. Care must, however,

be taken not to place it in heat without the requisite moisture, or the consequences will be disastrous. It is a dwarf-growing and tender-looking plant, owing to the pale hue of its bulbs and leaves, but the latter become darker and more robust in warmth. Its bulbs are thickly clustered, oblong or oval, when strong about 2 inches high, and of a very pale green. The whole plant seldom exceeds a foot in height. The scape is about 6 inches high and bears a pair of flowers, each of which measures nearly 2 inches across; the sepals and petals are of the purest white; the very broad lip is also white, in the centre of which it is stained with an irregularly shaped blotch of rosy-pink; at the base it is stained with orange-yellow, which enlivens the flower and renders it very cheerful, whilst the side lobes are streaked with carmine. It usually flowers earlier in the season than the present, but the blooms are always most acceptable whenever they come. It must be thoroughly drained, and good fibrous upland peat and chopped Sphagnum Moss are the best materials to use for potting; put the soil in firmly and raise the plant on a cone-like mound above the pot's rim. It enjoys an abundant supply of water to its roots when growing in addition to moisture in the atmosphere, and at no season of the year should its roots ever become dry. At all seasons it likes exposure to the light, but not to much sunshine, as if stood in the sun the plants become yellow and unhealthy.

Epidendrum Cooperianum.—This is a beautiful plant, and one which we seldom see. It has stout erect stems, which each grow some 2 feet or 3 feet high, and bear on the upper part a few stiff and sharp-pointed leaves, which are of a deep green; the blooms, borne on drooping, dense, many-flowered racemes, are yellowish, with a rose-coloured lip. This very pretty plant is now flowering in Mr. Williams' nursery at Holloway. It is not a cold house species, but requires the temperature of the intermediate house.

Masdevallia macrura.—This is a large and bold growing species, and it is now flowering freely in Mr. Measures' collection at Camberwell, where it is in striking contrast to the many small-flowered species always to be found at this establishment, where considerably over 160 varieties are gathered together. The species *macrura* is a stately plant, having large, broad, and deep green glossy leaves; the flowers are very large, the body of the sepals is dark purplish brown, the long tails being yellow. It is a magnificent species.

Aerides crassifolium.—This, one of the very finest of the Burmese members of this genus, is now very fine in Messrs. Low's nursery. I daresay they have been collected by my old friend Boxall, whom I have not seen for years, but whom I hear is now in this country again. It is a species which our friends in France and Belgium appear to grow better than we do; their plants do not appear to be so stunted and scrubby as ours; it may be, however, that this may arise from the neglect this genus has received at the hands of English Orchid growers, and which I hope, however, is a thing of the past.—W. H. G.

Anæctochilus Lowi.—A fine lot of newly imported plants of this species are now to be seen at Messrs. Low's nursery at Clapton, and they appear likely to start well into growth. Now that nurserymen who import are setting themselves to work to re-introduce these plants, I trust growers will give them encouragement to go on, so that we may yet be treated to the exquisite displays made by these plants in bygone days. I hope the Messrs. Low will again endeavour to find the kinds they introduced some years ago, and which were named *Nevilleanum*, *Ruckerianum*, and *Bullenianum*. They were very distinct, but never introduced but once. There must be a quantity of these beautiful small species yet to be sent home, and growers may depend upon it their culture is not so difficult

as is imagined, and I would advise them to eschew the bell-glass system of growing them.—W. H. G.

Angræcum Kotschyi (M. P.).—This is the name of the species sent. It is not *Sanderianum*, although much like it; it is also much like *A. Ellisi*, a plant, indeed, to which it would appear to be closely allied, but from which it differs in its spur, which is more or less twisted, and brownish-red towards the base, and it also flowers at a different season to *Ellisi*; however, it is a very beautiful and highly desirable plant, and was, if we remember aright, introduced to cultivation by the Messrs. Veitch, of Chelsea.

Cattleya Eldorado and its varieties.—The bright colours of this species are particularly telling just now as seen in Mr. Williams' nursery at Holloway, where besides a quantity of the typical plant are to be seen *C. Eldorado crocata*, a variety with the sepals and petals white, flushed with pale rose, and *C. Eldorado rosea*, in which the flowers are of a deep rose colour. This is a very showy species, which may be usually depended on to flower at this season if properly managed. The plant should be kept in a dormant state all through the winter, in order that it may start at the proper time for making a flowering growth next season.

Vanda Kimbaliana.—"M. B." sends flowers of this beautiful species, in which there are streaks of rose in the sepals and petals, asking if it is not a good variety. If it is, there is nothing novel in it, as I noticed the same thing last week in the nursery of Messrs. Low, the introducers of this plant, and in whose nursery at Clapton and also that of Mr. Williams at Holloway vast quantities of this species are now flowering. All forms of this species are very beautiful, and I look upon it as one of the very best introductions of late years. Personally, however, I prefer the plants which have the sepals and petals pure white, the contrast with the rich bright magenta of the lip being more decided and telling. The species appears to be a very free flowerer.—W. H. G.

SHORT NOTES.—ORCHIDS.

Oncidium incurvum album.—This is a pure white and very graceful form of this species, the long-branched spikes of bloom affording many a little spray for button-holes, &c. This species is now flowering in Mr. Tautz's garden, Studley House, Shepherd's Bush.

Angræcum articulatum.—This pretty long-spurred species is now flowering in Messrs. Low's nursery. It is a native of Madagascar, to which country, by the number of species the Messrs. Low obtain there, it is much easier now than a few years back to obtain access.

Cypripedium calurum.—This is a very fine hybrid, and one which appears to be nearly always in bloom. In the Cambridge Lodge collection at Camberwell there is a fine specimen of this plant with eight spikes and numbers of flowers. Its colour is very bright and telling, and the flowers are large and effective.

Odontoglossum maxillare.—This species, which used to be a rarity, is now flowering in Mr. Tautz's collection. It is not a great beauty, but it is very distinct, and its flowers are gratefully perfumed. This is a new feature in *Odontoglossums*, for very few of them are sweet-scented. It is a Mexican plant and has escaped most collectors.

Masdevallia anchorifera.—This is a little gem which I recently noted flowering in Mr. Measures' garden at Camberwell; it would be considered a small and insignificant plant, but I think it is quite worth growing. The dorsal sepal is small and deep crimson; the lower sepals are yellow streaked and spotted with crimson. It thrives in quite a cool temperature.—W. H. G.

Miltonias.—These just now are very beautiful in the Cambridge Lodge collection, amongst them being *spectabilis*, *Clowesiana*, *Moreliana*, *Peetersiana* and others. *Peetersiana* has flowers as deeply coloured as those of *Moreliana*, but they are produced on the spike after the manner of *Ragneriana*. It is a beautiful species and I should be pleased to see it oftener in collections.—W. H. G.

Oncidium micropogon.—Under this name I have received cut spikes of a very beautiful and

highly desirable plant from Mr. Cannon, Avenue Lodge, Merton, Surrey. In the best variety the sepals and petals are bright brown, transversely streaked with yellow, and much undulated; the lip is three-lobed, the side lobes the largest, of a clear, bright yellow. It is a most desirable plant, its showy flowers rendering it very attractive at this season.—W. H. G.

The Swan Orchid (Cynoches chlorochilon).—I have received a flower of this species from Scotland. It is a very fine one, but I certainly thought this plant was known to all Orchid growers in the land. True, it has not been seen so much in our collections of late years. In 1864, the finest specimen I have ever seen, and then under my charge, was consigned to the rubbish heap, as being one of the plants not worth pot room, together with many fine *Catasetums* and such like plants. Now, however, things have taken a better turn, and the old plant that was introduced upwards of fifty years ago again becomes popular. It obtains its name from the curved column, resembling a swan's neck, and the other parts of the flower to the ruffled feathers of a swan when swimming. I have noted it in several collections just lately. It comes from Demerara, and enjoys strong heat when growing.—W. H. G.

KITCHEN GARDEN.

REMARKS ON THE BEET CROP.

THE greater portion of Beet grown this season is unusually coarse, this being especially the case where the more vigorous varieties received what perhaps some would term high culture. Early sowing on rich, deeply-dug ground invariably tends to favour rank growth, and this year it has resulted in the production of numerous roots far too large for cooking, and they will therefore most probably find their way to the farmyard or piggery. What all good cooks prefer are medium-sized, richly-coloured, well-formed roots, and if a little judgment on the part of the cultivator is exercised, there is no reason why these should not be forthcoming in quantity. Much depends upon the selection of a variety or varieties to suit the soil of a garden. If the comparatively weakly-growing *Dell's Crimson* is sown on a poor, hungry soil, the chances are the roots will not attain a serviceable size; while, on the other hand, if the stronger growers, or such, for instance, as *Pragnell's Exhibition*, are grown on deep, rich soil, the roots will grow to almost the size of Mangolds, and be accordingly worthless. We are favoured with a deep, fertile soil, and it is only by sowing seed of strong growers as late as the first or second week in May that we can be at all certain of obtaining medium-sized roots in quantity, and this season, in spite of the late sowing on unmanured ground, many roots are too large.

There are some gardens where the long-rooted varieties cannot be grown to a presentable size, and in this case especially a trial ought to be given the Egyptian or Turnip-rooted variety. I have known instances where a long supply has been maintained with the aid of the last named, and of which *Crimson Ball* is a good selection, but, as a rule, it is to be recommended for the early crops only. Whether raised in heat and transplanted to a warm border, or sown early in the open, it invariably attains a useful size long before the long-rooted sorts, and a good percentage of the roots are richly coloured and tender when boiled. Unfortunately, it grows very large on most soils, this quite rendering it unfit for storing. Of the long-rooted varieties the most popular is found in *Dell's Crimson*, or *Osborn's Select Red*, as it was also named. This is especially to be commended for strong soils, as

it very rarely grows too large for table use, and the colour of both foliage and flesh is always good. Carter's Perfection much resembles it, and is equally reliable. With us the latter grows rather larger than Dell's, but does not become coarse. At one time I confounded Veitch's Improved Black with Dell's Crimson, but the Messrs. Veitch must be held responsible for the mistake made, as they supplied the seed. I have tried it again this season, and am agreeably surprised with the result. It is of more vigorous growth than and quite distinct from Dell's. Luckily, our seed was sown late, and we have a large breadth of most excellent Beet to store for winter and spring use. It forms moderately long leaves with a good bit of green on them, while the roots when cut are deep blood-red in colour and of superior quality. Pragnell's Exhibition is largely grown for exhibition, especially in the south-western counties, as it is cleaner in appearance than any other variety tried against it. We, however, have discontinued growing it, as it is far too large to please the cook. Omega is very distinct, more especially as regards the length of the roots, and it is this distinctive character that militates against its usefulness, the roots being too long to boil without cutting them up. The colour of both foliage and flesh is good. Varieties with yellow flesh will never become popular in this country, though I believe they find favour in France. This season we tried the Long Yellow (Betterave jaune grosse), the seed being obtained from Messrs. Vilmorin-Andrieux and Co. We find it of vigorous growth, the roots attaining a great length, but they are of moderate thickness and sweet and tender when cooked. I must confess, however, that I greatly prefer those varieties deep red in colour.

More than ordinary pains ought to be taken in lifting and storing Beet, the loss of a few fleshy roots meaning also a loss of colour. Nor should they be got up too early, or premature shrivelling may be the result. Not till rather severe frosts may reasonably be anticipated should the bulk of the crop be lifted, the first week in November, as a rule, being a good time to attend to this work. The roots must not be drawn out of the ground, but should be carefully lifted with a fork. Nor ought the tops to be cut off, or this also will spoil the colour of the roots when these are boiled. Instead of cutting them, the strong leaves should be twisted off, the few small inner leaves and heart being kept intact. Beet left undug till wanted is invariably the best when cooked, but as there is a risk of an extra severe frost destroying them, only a portion of the crop ought to be lifted in the open, this being roughly protected with straw litter. Seeing that the roots cannot safely be left in the ground, they must be preserved in a plump state in some other way. Too often they are carelessly thrown in a heap in a dry shed, this being either too airy or too warm, and shrivelling soon takes place. If a cool shed is available, the Beet ought to be carefully stored in a heap on the floor, the crowns facing outwards and uncovered, the roots being laid in or surrounded by moist, but not wet soil. In very cold sheds it is advisable to afford additional protection in frosty weather, a covering of mats or dry litter answering well, and in all cases a close look out ought to be kept for rats, or the heap may be ruined before their presence is detected. We find that Beet keeps remarkably well when stored in a conical heap in a dry place under trees, and duly covered with clean straw and an outer casing of soil.

It is useless, however, for a gardener to take so much trouble with Beet unless the cook does

the same. Not a little depends upon the way in which it is prepared for the table. All that should be done to the Beet prior to boiling is to carefully wash off the dirt, and lightly shorten any spreading portions of the root. Then, if they are put into boiling water only and kept boiling quickly for at least an hour, medium-sized roots should turn out tender and as well coloured as they were prior to cooking. Baking is a wasteful process, and the flesh, in addition to being much reduced in quantity, is often not so tender as it should be.

W. IGGULDEN.

TOMATOES.

It is worth mentioning that while the Tomato plants growing in the open air in the market garden of Messrs. C. Steel and Son, of Ealing, were completely destroyed by disease a fortnight ago, some plants growing against a wall in the gardens of Gunnersbury House, a quarter of a mile away, are still untouched by it. Messrs. Steel and Son had nearly two acres of Tomatoes, and they had set their fruit well, and the abundant crop was just colouring, when the fell disease attacked the plants, and they went down rapidly before it. Some plants in an allotment garden adjoining, also growing in the open ground, were quite free from disease until cut down by the frost of the 17th ult. The risks of Tomato culture in the open air are very great indeed, and I think a crop cannot be depended upon.

Mr. Hudson has his plants growing against a 5-foot wall on a south aspect. He has three sorts: Perfection, Hackwood Park, and Ham Green Favourite. It can be safely said that the last two are evidently selections from the Perfection, but the last is by far the best cropper as grown at Gunnersbury House, and though of good size does not grow quite so large as the other two. Are Tomatoes grown against warm sunny walls less liable to attacks of the disease than those grown in the open? Perhaps it is a matter difficult to decide. But one thing appears certain, that if good and constant crops of Tomatoes are required, the plants must be grown under glass, and in such a manner as is so successfully carried out by Mr. Barron at Chiswick. That Tomatoes are in large demand is abundantly proved by the good prices they have been fetching all through the season. Handsome, medium-sized, well-coloured fruit are in brisk demand, but English people prefer these to the poorly-coloured foreign fruit sent to this country in such large quantities. But it is to such that one must look for cheap fruit, as the outdoor crop is such a precarious one.

R. D.

Defoliating Tomatoes.—Even at the present day there is no plant that I know of so barbarously hacked about under the name of pruning as the Tomato. I have grown a great many Tomatoes this season, and they have produced fine crops, but what has struck me most has been that the majority of people who look at them, after expressing surprise at the heavy crop, say, "I see you do not cut the leaves off," as if they were firmly convinced that this was the correct thing to do. But on being shown the results of leaving the largest leaves on the main stem, and only cutting out the shoots that spring from it, the majority have acknowledged at once that the cutting off of such a quantity of foliage as is frequently done is a decided mistake. I may add that I find little difference in results, whether one, two, or three stems are left on a plant, so long as the side shoots are kept closely pinched out and the main leaves that spring from the stems left intact. I have fine crops now ripening out of doors on all sunny aspects available, with any glass lights that can be spared placed over them, and by keeping the fruits dry, now that they are fully grown, they ripen off well. That they colour when cut off green and hung up indoors, I am well aware, but the quality is very inferior to what it is when the fruits are ripened on the plants, and as the quality is the only reason why home-grown To-

matoes realise double the price of foreign samples, it is worth while taking some trouble to secure it. —J. G. H.

KITCHEN GARDEN NOTES.

ASPARAGUS.

THE top growth has this season not been so strong as wished for, and in all probability the crop of young shoots will not be quite so satisfactory as usual. Early Peas being rather scarce, Asparagus had to be largely substituted, and this late cutting, coupled with a cold, saturated soil, is, I believe, the principal cause of the comparatively weakly top-growth. Our soil being naturally of a very retentive character, clay abounding in the subsoil, it would only aggravate the evil to adopt the common plan of mulching with solid manure. In all cases where the soil is of a clayey nature, and therefore not really suited to the growth of Asparagus, the less the surface of the beds is disturbed the better. If it is loosened and mulched it will quickly become saturated, and remain so all the winter and following spring, the consequence being the loss of many roots, and it may be plants, and a correspondingly weak as well as late top-growth when the cutting season arrives. It is not frosts, but too much moisture, or perhaps the two evils combined, that prove most destructive to Asparagus, and the former ought, therefore, to be warded off as much as possible. All we intend doing is to cut down the ripened top-growth to within 5 inches of the ground, and lightly clear the surface of the bed of weeds. The surface being unbroken, much of the rain falling will run off, or at any rate find its way down natural drains, the bed remaining drier and warmer in consequence. The manuring will be done next spring. All our Asparagus is grown on the level, but if we had raised beds to deal with the mulching would yet be deferred to the spring. Where, however, the soil is of a light sandy nature and well drained, autumn mulching may be safely and probably advantageously practised. The first proceeding should be to cut down the tops and to clear the ground of weeds, after which the surface soil ought to be carefully removed with forks to a depth of about 3 inches and thrown into the alleys between the beds, this being again returned to the top of 3 inches of good solid manure. There is no necessity to chop down the sides of raised beds; in fact, this is a senseless proceeding, its only effect being to destroy a considerable number of strong outside roots. Those wishing to save Asparagus seed should cut a few well-fruited growths, and hang them up in a dry shed to thoroughly ripen. In the spring all may be rubbed out with the hand, and abundance of sound seed ready for sowing be quickly had.

CAULIFLOWERS.

Where handlights are available these ought now to be in position. Cauliflowers delight in a freely manured, well-sweetened soil, and the earliest crops should have a good sunny position. Square handlights with movable tops are the best, and these ought to be set out exactly their own width apart. The surface soil inside the handlights should be finely broken down, or, if need be, some sifted soil may be added. About nine plants can be dibbled into each, those in each corner and the central plant having all the space next spring, the rest being planted elsewhere. Seeing that there is certain to be a considerable amount of traffic between the rows of handlights, it is advisable to form a narrow pathway either with flat paving tiles thinly disposed, or with a layer of ashes, this ensuring cleanliness and also saving the soil from being bound together as hard as a road. Unless the ground is very wet the plants should be watered in, and the handlights ought to be kept close till they are well established, when abundance of air must be given whenever the weather permits. Owners of small gardens do not often possess many handlights, but that is no reason why they should not grow a few early Cauliflowers. From fifty to a hundred plants would usually be ample, and there are various ways of wintering these. They might share a frame with Lettuces or even the hardest kinds of summer bedding plants, notably Calceolarias and Violas. It is immaterial whether they be dibbled out 4 inches apart on a

bed of short manure and a surfacing of soil, or in pots or boxes, always provided they are given plenty of air, kept near the glass and protected from severe frosts. One of the best methods of wintering the plants is to place either single plants in 3-inch pots, or four round the sides of pots about two sizes larger, fixing them firmly in moderately rich loamy soil. Plants in pots should be kept in the open till there is a risk of their being crippled by frosts, when they must be transferred to shelves in a cool house, or in cool frames or pits. The plants should be kept well supplied with water and not be coddled in any way. Not unfrequently Cauliflowers when planted at the foot of sunny walls, survive the winter and heart in early. The soil ought to be liberally manured for them, a slightly raised ridge being formed, and they ought to be put out much more thickly than it is intended they should remain, as a portion of them will inevitably be lost in some way. Slugs are great enemies to Cauliflowers in all positions, and a close watch must be kept for them. They can be trapped either with heaps of brewers' grains, bran, or Broccoli leaves, a free use of soot and lime about the plants being also advisable.

WINTER SPINACH.

When the seed is sown in the spring it seems to grow only too well, but, as a rule, a good "plant" cannot be had in the autumn. Either much of the seed fails to germinate, or else the tiny seedlings disappear, that is to say, are eaten before they are observed. Our rows at one time presented a rather patchy appearance, but at places the plants were far too thick, and advantage was taken of showery weather following upon dry weather to transplant a considerable number, and also to sow more seed wherever there were extra large blanks. In this way we shall have a very even breadth of plants, the value of which cannot well be over-estimated. It is not yet too late to transplant and make good any gaps in the rows. The seedlings should be carefully raised out of the ground and dibbled in where required, taking care to well fix the soil about the roots. Plants thus treated will be some time before they recover, but in the spring they will be serviceable. The plants ought to be thinned out in any case where at all crowded, leaving them from 6 inches to 12 inches apart according to the variety and the earliness of the sowing. The monstrous Viroflay promises to be exceptionally good for winter use. It is very much stronger than the ordinary winter or summer Spinach sown at the same time.

W. I.

NOTES FROM THE VEGETABLE CONFERENCE.

As far as the exhibits were concerned, the vegetable conference at Chiswick was an unqualified success, but on the first day it was greatly marred by the weather, rain falling in torrents for several hours. On the second day a change for the better took place, and there was a good attendance. If the gardeners failed to gain any instructive lessons it was not the fault of those who arranged or contributed to the exhibition, as it is doubtful if a more comprehensive and generally excellent display of vegetables was ever brought together. As I fully expected, specimens suitable for exhibition purposes were most in the ascendant, and I have good reasons for stating that this anticipation had a deterrent effect upon several would-be exhibitors who were well aware that ordinarily grown, yet good vegetables, though the best for table use, cut but an indifferent figure alongside the large samples, and kept their produce at home accordingly. As it happened, many of those appointed to adjudicate on the various exhibits were more disposed to put good table quality first. It was a pity some kind of division could not have been made, the aim being to demonstrate what is best and most serviceable for table use and also what is best calculated to win premier honours at flower shows generally.

There was a time when extra large vegetables were thought little of by good judges, the most successful exhibitors being those who could stage perfect, yet comparatively small specimens. Of late years the winning productions have been very often exceptionally large, though, I readily admit, perfect

in all other respects, and one unfortunate result of this is the introduction of far too coarse novelties, or those commendable for exhibition purposes only. No stronger nor more condemnatory instance of this unfortunate direction of events can be given than was presented at Chiswick in the class for runner Beans. Very few indeed could be found to admire the samples of the immense and very coarse-looking pods of the Czar, Jubilee, Mammoth, and Girtford Giant. These were altogether inferior to the Ne Plus Ultra shown by several growers, the long straight, yet by no means coarse, pods of this selection being good for all purposes alike. Judging from what was staged, there are very few cultivators of the Butter Beans in this country, yet they form an admirable change to the ordinary runners, and some of them are very ornamental hanging on the plants. Nor are there many who cultivate the hybrid or running kidney Beans, partly probably from their unattractive appearance, but I find these most productive and delicately flavoured. Coarseness was not nearly so apparent in the class for kidney Beans, the pods of Canadian Wonder, though long, being also of good form and quality. The preference, however, was rightly given by the examiners to a very pretty dish of Ne Plus Ultra, this excellent variety being the best for both early and late work.

Every competent gardener must know that medium-sized to small Carrots are much the best for the kitchen, but many of the exhibitors seem to pride themselves on the great size of their roots. These extra large Carrots are only fit for horses, and if taken to the kitchen are treated in a very summary and wasteful manner. For home consumption nothing equals the roots of Nantes, Guerande, Model, and other stump-rooted or Horn varieties obtained by frequently sowing, but only a few good samples of these were shown. Beet on the whole was not so coarse as were the Carrots, but there were many indifferent samples shown both as regards size and colour. The colour of Veitch's Improved Black was decidedly good, but this was surpassed by Dobbie's New Purple, which, however, bore a suspicious resemblance to Goldie's Superb Black. In any case, or whether distributed as Dobbie's or Goldie's, it is decidedly the nearest to black in colour of any Beet that I have seen. Onions in some instances were simply enormous. The growers deserve credit for the remarkable results of their labour, but that is all that can be said in favour of such overgrown specimens. Large, or even only moderately large Onions are of little service, as they rarely keep well, and in any case are thoroughly disliked by good cooks. Medium-sized to small roots are by far the best and are the most profitable in the end. The efforts of the non-exhibitor ought, therefore, to tend to the production of the greatest weight of small firm roots rather than a few bloated specimens rivalling those imported from Spain. Potatoes on the whole were admirably selected, but I failed to see the wisdom of encouraging the introduction of varieties of so great a length as the new Duke of Fife attains. The tubers shown by noted Banbury and Northampton growers were exceptionally well selected, clean, and attractive in appearance.

Celery was largely represented, samples of Invincible White and Select Red from Scotland, and of Standard-bearer, Sulham Prize, and other popular varieties being exceptionally good. A considerable number of exhibits gave signs when cut of being kept too long in heat or of experiencing a check at some period of growth, and if this is any criterion, there will be much worthless Celery this season. The White Plume and the new Golden Yellow were also shown, but both are inferior, the former especially so. Celeriac, as far as British growers were concerned, was but poorly represented, but there were some fine samples of large Early Erfurt, Apple-shaped, and large Smooth Prague from Messrs. Vilmorin, of Paris, though these were by no means so perfect in form as might be expected, judging from the illustrations in their catalogues. It must not be thought that Celeriac is not much grown in this country, but in few instances are the roots nearly so forward as those shown by the French growers. In the same section

as the Celeries were grouped Lettuces and Endives, and both were fairly well represented. The Endives shown by Messrs. Vilmorin were exceptionally good, and they were set up in a most attractive manner. I was particularly pleased with the appearance of the Louviers fine lacinated, and this variety ought to be given a good trial in this country. In all probability it will prove more hardy than the other green-curved varieties, and it is certainly of more compact growth. Messrs. Vilmorin also had excellent exhibits in the Capsicum class. A plant of Capsicum Large Bell had ten very large fruits, these being bright red in colour, each from 4 inches to 5 inches in width and depth, while equally good crops of immense pods were attached to the plants of Golden King, Sweet Spanish, and Pepper Improved. As grown by Messrs. Vilmorin these Capsicums are remarkably showy, and the pods when dried and ground are superior to the ordinary Cayenne pepper.

Egg plants will never be appreciated in this country, nor do the young ears of Maize or Indian Corn find favour as a cooked vegetable. In America they are largely used, and apparently are also esteemed in France. *Stachys tuberosa* is being given a fair trial, and may eventually become popular. As far as appearance is concerned, the small roots are not of a tempting appearance, but it is to be hoped they will be better liked, in which case this new vegetable will be grown extensively by those whose duty it is to place a good variety of vegetables on the table daily. The *Asparagus Chicory* shown and described as a new vegetable, in growth much resembles the common *Dandelion*, and the side shoots, which are to be cooked and eaten, are far from tempting in appearance. They may yet be appreciated by those who like anything with a slightly bitter flavour. Gourds were largely shown and were quite a feature in the display. A great number of varieties was staged, the bulk of them, however, being more remarkable for either their size or quaintness of form than for any other quality they may possess. A VISITOR.

GARDEN FLORA.

PLATE 721.

PRIMULA SIEBOLDI.*

THIS was originally introduced as *Primula cortusoides amena*—a cumbrous name and especially inexact, because the species is not *P. cortusoides* at all. The trade and public took with cheerful readiness to the suggestion that this very beautiful Primrose from Japan should be termed *Primula Sieboldi*, after the name of its introducer. Of all the hardy forms of foreign Primroses, *Sieboldi* and its numerous varieties are perhaps the prettiest, as they are very handsome both in foliage and flower when well grown. Still further, because they can be rapidly propagated, they soon give an abundance of plants and flowers. Really we may adopt a cant phrase, and describe *Primula Sieboldi* as a decorative plant. Botanists would perhaps decry the phrase, and it is objectionable so far that it infers that only certain plants are decorative. Still it is an implied compliment to the general excellences and beauties of the plant and the facility with which it may be increased. What the Chinese Primrose as a tender species is in greenhouses, the Japan Primrose is as a hardy one. It is a pity that two such beautiful species may not be cross-fertilised, as the hardness of one might be engrafted on to the particular beauty of the other, and *vice versa*. None the less those inveterate seekers after floral change and improvement—the florists—have not let *Primula Sieboldi* alone. It is true the rich colouring found

* Drawn for THE GARDEN by H. G. Moon, May 1, 1889, from flowers sent by Messrs. Ryder and Sons. Lithographed and printed by Guillaume Severeyns.



PRIMULA SIEBOLDII WHITE AND LIGHT PINK

in Chinese Primulas has not been introduced into the Japan Primrose fully, but we have now many forms producing pure white, pink, mauve, lilac, blue, purple, red, magenta, and other colours, with most if not all colours produced equally on smooth-edged and on elegantly laciniated flowers.

Our coloured plate presents some of the lighter or pale hued forms of Messrs. Ryder and Sons' numerous varieties. So late as last April the firm exhibited a remarkable collection of these Primroses at the Westminster Drill Hall, and at the great Whitsuntide show at Manchester they have exhibited grand masses also, so that ample evidence has been afforded of their capacity for decorative display. It may, however, not be overlooked that some others have raised many very beautiful varieties here, whilst on the Continent equal energy has been shown. The chief drawback so far has been found in the tendency of the plants to run in colour grooves, lilac and mauve tints predominating. At home here, Mr. Jas. Allen, of Shepton Mallet, raised numerous forms. His Snowflake, pure white, with elegant laciniated edges; Ophelia and Hermina, mauve-blues, and other forms still existing have proved to be of the best. Mr. R. Dean raised Lacinata, a deep red, indeed in the open ground in sunlight almost crimson, and not yet excelled for the depth of its colour or sturdiness of its habit; Purpurea, one of the deepest of the blue shades; Charmer, pale mauve; Mauve Beauty, and numerous others. Mr. T. S. Ware has also introduced many fine varieties, so that Mr. Geggie as a raiser is far from standing alone or entirely holding the field. Messrs. Ryder and Sons, however, should have full credit for presenting Primula Sieboldi to the public notice in a fuller and more prominent form than others have done. Perhaps in the cooler north less difficulty has been found in keeping the plants through the summer than seems at times to have been the case in the south, where thrips and spider during spells of hot dry weather have often proved destructive. It is worthy of note, however, that recently seasons have been more favourable and southwards the plants have done well. I cannot say how many forms or varieties Mr. Ware may now be offering to the public. Mr. R. Dean has a list of some seven or eight selected kinds still on offer, but Messrs. Ryder and Sons, of Manchester, have at least some forty varieties. Of these the best may be found in alba magnifica, pure fringed white; Bruce Findlay, heliotrope-blue; Leo H. Grindon, rosy purple; Mrs. Ryder, white shading to blush; Beauty of Sale, white, edged with magenta; Charming Bride, fringed blush white; Harry Leigh, lilac, white eye; Mrs. F. Spooner Woodward, white, the back of the petals heliotrope-blue; Mrs. W. Pavitt, white edged bluish lilac; General Gordon, light pink, large flowers; Miss Nellie Barnard, bright glowing crimson; Princess Beatrice, pure white; and Victor, rosy red. A first rate dozen may easily be selected from these, and those anxious to test the adaptability of Primula Sieboldi for both greenhouse and rockwork or ordinary border culture in sheltered places will do well to make a start with them. What Primula Sieboldi can do in the matter of producing fine pot clumps, Messrs. Llewellyn, Barlow, Douglas, Dean, and others have shown at the Auricula Society's exhibitions in past years. Good clumps in 7-inch or 8-inch pots, carrying 10 or 12 fine trusses of flowers, are indeed charming. Grown in that way they are far more pleasing than are the formal, stiff-looking clumps made up in pans by filling them with small single plants from

little pots, as then the heads of bloom are too flat and even to present unnatural growth. Grown in pots as thus indicated, Primula Sieboldi is in its blooming season a very beautiful greenhouse flower and merits universal cultivation. Resting in winter, the plants are essentially deciduous, the leaves dying as the autumn advances. In very hot weather it is sometimes difficult to preserve foliage through the month of August, but if kept in a cool shady place and well watered, its retention is possible. Still, plenty of warmth does no harm to the rhizomes, which seem to be all the firmer if well matured in sunshine. If grown outdoors, the clumps may remain undisturbed for several years, except when propagation is needful, and then it is best to remove portions with soil attached rather than to break up the crowns. In pot culture, however, the best plan is to turn out the whole of the soil from the pots, remove all the individual crowns or rhizomes, repot the finest at the rate of about ten or twelve to a 7-inch pot, and place all the smaller ones into pots or boxes to make growth for another year. When pans can be spared, these, on the whole, are best for the reception of the smaller pieces. Whilst generally preferring a cool temperature, yet most of the varieties, the white ones especially, will bear gentle forcing very well. Where there is a large stock, and in a year or two plenty of crowns are obtained from small beginnings, a few pots may be pushed on early and a long season of flowers secured. The Sieboldi varieties well deserve special encouragement at spring shows. During April in the south and May in the north, classes for dozens and half dozens in pots or pans would materially help to stimulate their wider culture. At present many gardeners know little or nothing about them. Once they have become recognised as plants for the greenhouse and rockwork, there will be found plenty of cultivators of such beautiful and easily managed flowers. A. D.

CHRYSANTHEMUMS.

E. MOLYNEUX.

HOUSING THE PLANTS.

THE sharp frost of the 3rd of October last year should be a warning to those persons who were unfortunate enough to have their plants affected. For this reason growers of plants will make earlier preparations for housing their stock. Much depends, of course, upon the situation of each cultivator. In low, damp districts the plants should be taken inside a week earlier than where the position is high, and consequently drier. In either case, once the colour of the flower can be seen, nothing is gained by allowing the plants to remain outside, because they will at that stage unfold their flowers nearly as fast out of doors as they will inside, and the longer the plants are left outside after the flowers attain that stage, so much more likely are the blooms to damp at a later period. The latest buds are also more affected by early frosts than those which are swelling freely. Growers who have lived some time in a district know when to expect these early frosts, and there is seldom much variation in the time at which they are experienced. It is necessary for intending exhibitors to study the time when the plants should be housed more so than those growers who intend to have a good home show of bloom. In that case it is better that the flowers should not be open all at one time, as the display is more prolonged by the varieties expanding their blooms at different times; but in the case of an intending exhibitor it is of the utmost importance that the

different varieties should be timed to a nicety. Many exhibitors of cut blooms of Chrysanthemums are unsuccessful through their blooms being either too early or too late. Cultivators living in the south of England invariably lose many of their best flowers before the day appointed arrives. The time when the plants should be housed, then, is important. Some kinds require a much longer time to develop the blooms after they reach a certain stage in the growth of the flower-buds. If a show is to take place from the 10th to the 20th of November, all plants should be housed by the 8th of October, and so on in proportion to the dates fixed, either earlier or later. No plants are safe outside without protection after the time named. If it is desirable to allow them to remain out longer than the date named, they should be so placed that temporary protection can be given in case of need. Some thin tiffany stretched over the plants at night will preserve them from a sharp frost. In the majority of cases the flower-buds and stems will be stout enough by that time to be sufficiently strong to bear the weight of tiffany without risking the danger of damage to the flower-buds. Varieties that did not set their buds as early as was desired and all late flowering kinds should be removed inside first, so that they may have more time to develop than would be required had the buds been "taken" at the desired period for each sort. Late-flowering varieties need extra early housing, even if the buds were selected as soon as possible to obtain them of the right sort.

Of late varieties which set early crown buds the following are typical kinds: Grandiflorum, Ralph Brocklebank, Meg Merrillies, Boule d'Or, Golden Dragon, Gloriosum, Cherub, Eve, Mabel Ward, and Lady Carey. Other sorts that may be termed ordinary flowering November kinds are Avalanche, Edwin Molyneux, Mlle. Lacroix, Val d'Andorre, Criterion, Mme. C. Audiguier, the Queen family, Princess of Wales and its sport, and Empress Eugénie. Such kinds as the last-named should be housed early in October. Some varieties require only a very short time to develop their blooms after the first sign of the unfolding of the florets takes place. The following are some of these: The Rundle family, Prince Alfred and its sport, Lord Wolseley, Refulgence, Mr. Bunn, Elaine, Comte de Germiny, Mme. Bertie Rendatler, Jeanne d'Arc, Prince of Wales, Novelty, Fernand Feral, and Hiver Fleuri. These sorts should stay outside as long as they can be left with safety from frosts.

The preparation of the house or houses which the plants have to occupy is the next consideration. Whatever the house is it should be thoroughly fumigated if there are any other plants which have to be placed with the Chrysanthemums that are at all likely to be infested with green fly. A span-roofed greenhouse running north and south is perhaps the best kind of house in which to flower the plants. Vineries or Peach houses after the fruit has been gathered, and which face to the south, are good structures for flowering the plants in, and these are the houses generally used for the purpose. The leaves from the trees in the early houses will be falling just about the time the Chrysanthemums are housed, thus admitting more light to the plants. Vines in second early vineries will need the lateral growth pruned back, or the absence of light will be felt by the plants underneath, and will quickly show it by the weakness of the peduncles. The glass should be thoroughly washed, so that the plants may have all the light possible during the dull days which are sure to follow this date before the blooms are thoroughly developed. Any shading

material that may have been necessary for the summer occupants of the house should be removed, as an absence of light to the plants affects the colours of each kind to some extent; this should be avoided. Before housing, the plants should be thoroughly examined for mildew, which generally infests the under sides of the leaves in autumn, and is more difficult to eradicate than when on the outer surface. The best remedy is to lay the plants on their sides and thoroughly syringe them with the mixture of lime and sulphur, as previously advised, thoroughly wetting every part of the plant so affected. Remove all dead leaves and lateral growths from the plants and wash the pots clean. If any of the plants show signs of the drainage being blocked, they should be seen to before being taken inside. The manner in which the plants shall be arranged must depend upon circumstances and the taste of the cultivator.

With an exhibitor, the development of the blooms is the chief aim. In this case it is wise to place the Japanese varieties in a house by themselves, so that more fire-heat can be given to them during the time the blooms are developing. This section will stand more fire-heat than the incurved sorts, as too much heat is liable to make the florets of the latter section soft and flabby, inducing them to reflex rather than to incurve. A little fire-heat and free circulation of air assist the flowers of the Japanese section in developing. The colours are brighter and the florets come out cleaner and more regularly than they do if no fire-heat is employed at all. In all cases place the plants as near to the glass as possible, so that they may have the benefit of all the available light. When first housed, as much room should be given to the plants as is consistent with the space at disposal; afterwards, when all are housed, the plants may stand a little closer together.

Watering the plants when in their new quarters should be attended to very carefully. It is seldom that the plants will need it more than once a day, and not always that. Any water required should be given in the morning, so that the surplus moisture resulting from the application of water to the roots may have time to dry up before damp comes on in the night. A dry atmosphere prevents the spread of mildew more than a close one. In damp or foggy weather less air may be admitted and the hot-water pipes should be warmed during the day when ventilation can be freely given, otherwise, when the outside temperature and weather admit, air should be given to the plants both night and day. If mildew appears on the surface of the leaves, dust the affected parts with sulphur at once, as the firmer a hold this pest obtains, the more difficult it is to eradicate.

SHORT NOTES.—CHRYSANTHEMUMS.

Chrysanthemum Condor is another of the broad, flat-petalled Japanese varieties commonly described as strap-shaped. No doubt when blooms of this sort are fully expanded, the faint pink tinge of colour which they show while developing will pass off, leaving it a pure white variety of capital quality, as it is in habit of growth. This is also one of Rozain's varieties.

Chrysanthemum Mrs. Alpheus Hardy.—I shall be glad to know how this much-praised variety is succeeding this season: whether it is of desirable habit, has good foliage, and above all, what is the prospect for flower this year? My reason for asking this is, as far as I can learn, the foliage is very ineffective, while the buds are few; but perhaps in different districts and under varying conditions the results may not be always the same. H. P.

Chrysanthemum George Daniels is one of Rozain's new Japanese French-raised varieties

which was sent out during the present year, and which promises to come up to the expectations formed of it from the few blooms seen last season. The florets are broad and strap-shaped; the flowers are almost white, having at present the faintest tinge of pink as they now open. Last year there was a doubt expressed about its being distinct from *Etoile de Lyon*, shown at the same time, but as far as the habit of growth is concerned the two varieties are decidedly distinct. I have no recollection so far of any two plants differing in habit of growth in every respect and still bearing identical flowers. — E. M.

EARLY FLOWERING CHRYSANTHEMUMS.*

FOR some years before 1876, I was growing Chrysanthemums in the open garden, and I found that very generally just as they were coming into bloom the frost came and spoilt the flowers, often in a single night. I observed that one plant bloomed in October. This was the old sort, *Drin Drin*, which set me thinking if it was not possible to have a race of early sorts blooming before November. I found that Mr. Watson, then of the Marlborough Nursery, Islington, London, grew these plants in large quantities in small pots for trade purposes, but that he had few if any sorts beyond those in Mr. H. Taylor's list, which did not include *Nanum* (the *Siston* of the French). This came to me, in 1877, from the Pine-apple Nursery in the Edgware Road, London, with the name *nanum*. In 1877, also, I procured *Madame Picol*, or *Piccol*, sometimes spelt *Pecoul*—I do not know which is right. I mention these not because they were the only varieties, but that they are still two of the best in their respective lines of colour. *Madame Picol* has since produced a red sport. I do not know who has raised either of them, but that they came from France there can be little doubt. Some were probably known and grown as early as 1817, for the London Horticultural Society offered a medal for early-flowering Chrysanthemums in that year, but I do not know with what results. Mr. Broome's little book, published in 1858, mentions thirteen sorts. Among these were *Scarlet Gem*, since called *Little Bob*, its proper name being *Dr. Bois Duval*, and *Frédéric Pelé*, which seems to have preserved its French name all through until now. These two are still grown, and *F. Pelé* is even now the best in its line for many purposes, but *Dr. Bois Duval*, although having a fine colour and doing well in some places, is a very weak plant and difficult to keep in winter. Mr. Salter, in his book published in 1865, gives a list of fifteen sorts. Illustration was one of the best old sorts, being hardy, robust, of good habit, dwarf, and free-flowering. It has had many names and several sports, and for a considerable time was the principal variety grown. Its proper name is *Marie Longarre*. *Precoce* is another old sort still grown for large quantities of cheap yellow cut flowers, and holds its position because it is robust in the open ground and owing to the flowers being slightly incurved packs and stands carriage well in large bunches. I knew nothing of this before 1877. A few years previous to this most people seemed to know nothing about early-flowering Chrysanthemums. Early in 1878 the late Mr. Helman, of Croutes, Guernsey, sent me some cuttings without name, which he did not know, and could not find out, so I named it after that place, *Saint Croutes*. It turned out to be identical with the one found by the Rev. F. Freeman at Saddington Rectory, Leicestershire, hence called by him *Saddington*, but found afterwards by importation from France to be *Pollion*. It is still the best in its line, not in its original colour—pink—but white, to which it sported a few years after at Tooting, Surrey.

It must ever be borne in mind that the qualities desirable, and stamping many of these sorts as good and best are quite different from those of the late sorts and those to win prizes at shows, with the exception of such as *Mme. C. Desgrange* and *Leoni Lassali*. They are not fit for the long stick

* Paper read by Mr. W. Piercy, Forest Hill, S.E., at the National Chrysanthemum Society's Conference, September 11, 1889.

with a flower or two at the top sort of plant, or those monstrosities which look like a kind of illustrated loo table, both of which shapes no Chrysanthemum, either early or late, ever grow in naturally.

The most striking point to advance in general estimation these early sorts was the discovery in the summer of 1879 of *Mme. Castex Desgrange*, by Mr. Robert Parker, at that time of the Exotic Nursery, Tooting, Surrey. This was found by him in a lady's garden in Wales. On March 15, 1880, he gave me two little plants of it, and from those two little plants and his stock the bulk of those now in cultivation have come. As is customary, as soon as this variety became known we had the cry common in such cases that it was known before. Old French catalogues were found in which there was the name, but no one had seen the plant. Others said they had it, but I did not find they had the stock. It was in the lists of *Mons. Lemoine* and *Mons. Crousse*, of Nancy, France, of March, 1881, but I expect they had it from England the year before. *Lemoine* says it was raised by *Boucharlat*. *Crousse* spells it *Desgranges*. However, it was then, and is now, the very best early Japanese, either in its white and yellow colour, and its primrose sport called *Mrs. Burrell*. It was a curious thing that the very next summer that we heard of the first yellow sport of *Mme. C. Desgrange*, I found it had sported in six places the same colour. This is one of the curious aspects of sports that after a plant has been grown a number of years from the seed, it sometimes the same year or year after sports in a second or more places, just in the way that we had three sports of *Mlle. Lacroix* in three places in 1888; other sorts never sport at all, as in the case of *nanum*, although it is now old. I have known it since 1877, and it has been grown in all sorts of places and in large quantities for cut flowers, never varying in the least, but being neither better nor worse than when grown the first year.

At the end of 1881, I received from *M. Lemoine*, of Nancy, the variety *Lyon*, which is one of the very best early pompons I ever had or have. Its faults are its delicacy in winter and sparseness of cuttings, but in all other respects it is first-class. I have counted 434 florets in a bloom. It is now to a great extent superseded by its red sport, *Alice Butcher*, which is in every respect the same except colour, and red-flowered varieties are much more scarce; besides, the original colour much resembles that of *Blushing Bride*. At the end of 1881, too, I received also from *M. Lemoine Mlle. Jolivart*. This is still one of the most beautiful and useful pompons we have. I have not found anything to surpass it in all its good qualities. It has never sported, being white as at first. It was in 1881 that I also received for the first time *La Vierge*, a white October bloomer. I call all that bloom up to the end of September early, and those that bloom in October semi-early, which terms are about equal to the French *Precoce* and *Hative*.

In 1883 I first discovered the merits of a new sort imported from France by Mr. Ware, of the Hale Farm Nurseries, Tottenham, London. It was called *Late Flora*, but why it was so designated I know not, for it is very early, and the best yellow pompon in its line. It is a reflexed yellow flower, and blooms for months together, commencing in August. I have dropped the "*Late*," and now call it *Flora*, but there are two more *Floras*, late ones.

It was not till 1885 that I found the one named *Blushing Bride*. It was amongst a lot of wrongly-named old sorts and rubbish imported from France by Mr. Davis, of Lilford Road, Camberwell, London, and is believed to have been raised by some amateur. This is still the best in its line, and will bloom twice in one season. In 1886 Mr. T. S. Ware imported from *Mons. Pertuzes*, of Toulouse, the raiser, *Leoni Lassali*, which was of an entirely new type among the early sorts, being a large ivory-white flower of a semi-incurved character. It is very beautiful in many respects, not so profuse a bloomer as some, but that is made up for by the beauty and size of the flowers. It blooms in August,

and stands alone, being a large-flowered sort, not Japanese.

Grace Attick is the last new and entirely distinct sort that I have received. I believe it was raised in New York by Mr. John Thorpe, and imported by Mr. Cannell, of Swanley, Kent, in 1887. It is a quite new type of Japanese, a white large flower on a dwarf plant. It is the earliest of all Chrysanthemums, blooming a month sooner than nanum and coming out at the very beginning of May, under glass, of course. I believe that this plant will be largely grown, and should we be able to seed it in England, or in some other climate, it will probably be the origin of some entirely new early-blooming sorts. It is very dwarf and bushy, a good grower in summer, but weak, and very liable to mould off in propagating in spring, with a disposition to bloom itself to death in summer.

The great uses of these plants are to decorate gardens in the open, even in the north of Britain, where the late kinds would be destroyed by the frost, and to fill the gap in the season between the summer flowers and the November Chrysanthemums. Their dwarf and bushy habit fits them very much for pot plants for decoration and sale as such, while their capacity to supply cut flowers is unbounded. Considering the labour and expense, as well as their durability in a cut state in water, they are perhaps the cheapest and most effective flowers grown. Besides, there is one great point more in their favour: they will grow and flourish in the smoky and dirty air of towns and suburbs, where few plants will flourish, and where no Rose will live and bloom.

As to the progress in future, the aspects are most promising. Years ago I began to grow seedlings. My first lot grew very well, and when blooming time came they were still growing into plants of vast size, but no sign of bloom appeared. I then heard, "Oh, they do not bloom the first season." So I saved them until the next year, when their size was magnificent; but the bloom, when it came, was such that I threw them all away. Subsequent batches were no better. These were all from foreign seed. I then began to look around, and on the railway slopes at the back of my ground saw the wild English Chrysanthemum *Leucanthemum*, the Ox-eye or Dog Daisy, in bloom in May. So I thought to double that, but it was no good; all the seedlings came exactly like the parent, in every way so very different in that respect from the seedlings of the other Chrysanthemums, which I then attributed to the foreign seed being from mixed plants. I could get no seed from the really early sorts till Mr. John Thorpe sent me a small packet of early seed from New York in 1885, from which I raised over one hundred plants, among which there was only one really good early variety, which I named Piercy's Seedling. This was my first success in raising new kinds, for it is really good. But I wished to raise my own seed, so that I should know what I was doing. I tried in vain. I sent plants to Mr. Laxton, the seedgrower of Bedford, on hot sandy soil; and to Mr. Elliott, of Jersey, with no better results. The seeds, under a strong glass, were seen to be infertile. I then proposed to send the early sorts to the south of France and Algeria, and the Rev. F. Freeman sent some to Ohio, U.S.A. In the meantime I was on the look-out for some early single sort. This, through the craze for single flowers, I procured by the kindness of Mr. W. H. Cullingford, who grew a lot of seedlings from seed he had from Mr. Hartland, of Cork, Ireland, and named Hartland's Marguerite. It was a great, tall, profuse-blooming, nearly single, white pompon, and I had plenty of seed from it the first season. From this seed the next year I selected two dwarf plants of the best character, and from the seed of these I have now some fine varieties. I still have one of these, which I call Seed-bearer, which even in last year's bad season perfected good seed.

When I first grew the seed of Hartland's Marguerite it was with immense surprise I saw that instead of the plants being all alike they were nearly all different from the parent, though there was a family likeness in some of them. Last season I again grew the seed of these two selected

plants separately, and have as their descendants—Goldsmith, a fine early yellow pompon, which will bloom twice in one season; Clara, good early white pompon; Miss P. Broughton, late white pompon; White Lady, lovely early white pompon; Dod's pretty little yellow dwarf pompon, and others. Besides these, the year before last I had good seed from Salter's Early Blush, from which I have raised an advance on it I have named Jacintha. I have also from the seed of these two seedlings, among the plants grown at Mr. Ware's nursery last season, a very beautiful dwarf white pompon named Duchess of Fife; it is about a foot high, and was in bloom August 12. The flowers resemble those of Mlle. Marthe. It is entirely different from all others. I had also from this same lot of seedlings grown at Mr. Ware's the most beautiful early yellow pompon in cultivation. I have named this Golden Shah. The colour is the very finest deep yellow, very bright; the flowers are $2\frac{3}{4}$ inches across, deep, full, and reflexed. The plant grows 2 feet high, with slender, but strong habit; the foliage very spare indeed, and each flower has a good long stalk, so that every bloom can come out, which renders it very good for cutting, besides giving the plant a very elegant appearance. It is a very rapid grower. Thus two plants raised from cuttings inserted on March 24 were in full bloom by July 25, and two more struck on May 24 were in full bloom July 29. It stands rain wonderfully well for so delicate a flower, and it is certainly the very finest early English seedling up to this time, as well as being the best early pompon, English or foreign. It is remarkable also as being raised from seed saved at Forest Hill, and only two generations from the poor white Hartland's Marguerite, which was nearly single. All this is not only good as regards Chrysanthemums, but very wonderful as an illustration of vegetable physiology. I regard it as a revelation in itself worth having, apart from the gain of such a plant.

TREES AND SHRUBS.

THE GLAUCCUS AFRICAN CEDAR.

(*CEDRUS ATLANTICA GLAUCA*.)

THIS is decidedly the gem of our coniferous collection, a tree that arrests the attention of everyone. That it is not well known, a glance at some of our late publications on Conifers plainly shows us; and this is to be regretted, for the several fine specimens within a radius of a dozen miles of London clearly demonstrate that the glaucous African Cedar is one of the most distinct and ornamental of hardy Conifers.

Sir John Lubbock may well be proud of his two noble specimens of this rare Cedar, one growing on either side of the main approach leading to High Elms—that home for many of our rarest trees and shrubs. These trees are truly as stately as they are beautiful, they being between 40 feet and 50 feet in height each and regularly clothed with foliage, which at a short distance away have more the appearance of burnished silver than anything else I can recall to mind. Wise policy it was of the owner of these two Cedars to have them placed contiguous to clumps of the Black Austrian and Corsican Pines (*Pinus austriaca* and *P. Laricio*), for the difference in tint of foliage, habit of growth, and general contour is certainly remarkable. Little or no difference, save in the tint of foliage, is discernible between the glaucous African Cedar and the typical or parent plant as usually seen, for the same mode of growth and irregular appearance are noticeable in both species and variety. The difference in foliage colouring is, however, both distinct and remarkable, the deep grass or blue-green of the normal tree giving place to a most enticing silvery hue in the glaucous variety, and which renders it as distinct and pretty a Conifer as could well be desired.

At Holwood there is a noble tree of the glaucous African Cedar, it being 47 feet in height and 3 feet 2 inches in stem girth at 1 yard from the ground. The branches are long and stiff-pointed, as is always noticeable in the parent plant, and cover a ground space of fully 24 feet in diameter. Unfortunately, owing to non-attention, this fine tree has been partially spoiled on one side by the too near proximity of an Austrian Pine, but this having been removed, we may yet expect that the Cedar will attain to the goodly dimensions for which it is remarkable. Cones have been produced on this specimen for several years back.

Male cones I have looked for in vain, but it is just possible that they were produced in quantity at one time a few years ago. When the pollen is ripe and being shed on a bright sunny day, the appearance of the tree is something remarkable, the silvery foliage bespattered with golden pollen being as strange as it is beautiful, and imparting to the tree when viewed from a short distance away a most pleasing and distinct appearance.

Judging from the numerous specimens of Lawson's Cypress and the Austrian and Corsican Pine planted at the same time, this Cedar must be of fairly rapid growth, for it has quite kept pace with these during the quarter of a century since the time of planting. The bulk of stem does not, of course, equal either that of the *Laricio* or Austrian, but as regards height and general branch-spread it is not one whit behind. The soil is a rich heavy loam, and would seem, from the healthy appearance of the tree, to be just what it requires.

The African Cedar far surpasses any of its congeners for rapidity of growth, general utility, and as being a tree that can well in point of appearance hold its own with any of its predecessors. Of the greatest hardihood, for it succeeds well in many a northern station, and where the frost bites hard and keen, it may well be planted in any part of the kingdom, and without taking into consideration whether the position is sheltered or not.

Casual observers and writers on Conifers are not a little puzzled to accurately determine between trees of the Lebanon and African Cedar, but this is not difficult by a close observance of the contour and habit of the two trees. Rarely, if ever, does the African throw weight into the branches, it being far more inclined to rush up straight and expend its energy in the building up of a clean, well-balanced stem. The branches, too, are short in comparison with those of the Lebanon tree, and well covered with shorter and more spiny leaves. It grows more rapidly than the Lebanon and is generally destitute of the flat or table-headed appearance that is so characteristic a feature of that well-known species. Owing to its having a small branch-spread in proportion to its height, it is also more valuable as a forest tree, and suffers but little from crowding and cramping. As a seaside tree the African Cedar holds a distinguished place, its stout branches seeming well able to withstand the saline-laden storms to which it is in such situations frequently exposed.

The beautiful glaucous variety above referred to well merits a conspicuous position in any collection of Conifers, and now that its value is becoming better known it is to be hoped that nurserymen will take it in hand, and soon get up a stock of a tree that I feel assured will not remain long on their hand.

A. D. WEBSTER.

A Plane tree at Ely.—I enclose a photograph of the trunk of a remarkable Occidental Plane in

the gardens of the Palace, Ely, said to have been planted about 1680 by Peter Gunning, Bishop of Ely. Its growth is very beautiful, the boughs spreading widely and touching the ground, so that the inside is like a large tent. The span of its branches at three different places is 98 feet, 104 feet, and 112 feet; height 102 feet; circumference at 3 feet from the ground 23 feet 4 inches; at 4 feet, 18 feet 6 inches; and at 5 feet, 21 feet.—F. C.

* * We thank you very much, but doubt if the photograph will engrave well.—Ed.

AUTUMN FLOWERING SHRUBS.

In addition to the late flowering shrubs noted on p. 265, there are so many others that flower during the latter part of the summer and in the autumn months, that a supplementary list to those previously mentioned may be of service. No notice of late flowering shrubs would be complete without mention of the shrubby Mallow (*Hibiscus syriacus*, or *Althæa frutex*), of which we have many distinct varieties now in our gardens. Among these there are both double and single-flowered forms, but the single forms seem to open their blossoms more satisfactorily than the double ones; indeed, to me they are in every way superior. On dry sandy soils this *Hibiscus* is never seen to advantage, as the foliage becomes sickly during the summer, and if very dry much of it will drop. In cool moist spots, however, it is a most beautiful shrub. Several forms of *Ceanothus*, too, flower during September, proof of which was to be seen in a number of flowering specimens exhibited by Messrs. Veitch at the last meeting of the Royal Horticultural Society. The hybrid *Gloire de Versailles* will continue to flower as late as any of them, and to this the pink-flowered *Marie Simon* furnishes a pleasing variety. True, in many districts *Ceanothus* are sometimes injured during severe winters, yet they are well worth the shelter of a wall. Another subject that needs the same amount of protection is the Japanese *Caryopteris mastacanthus*, a free-growing, much-branched shrub, whose bright lavender-blue flowers are borne on the upper parts of the shoots, and arranged in closely packed axillary cymes. The leaves are hoary, and the whole plant is interesting from the fact that it is one of the few members of the extensive Order Labiata that can be classed with hardy shrubs. As a rule, this does not commence to bloom before September. Besides the *Indigofera Gerardiana* mentioned in the before quoted article, there are a couple of other smaller Leguminosæ well worth a place. I allude to *Desmodium penduliflorum* and *Lespedeza bicolor*, the first of which (the *Desmodium*) forms a very handsome object when liberally treated, and occupying a position that allows of its full development, as then it forms a mass of slender wand-like shoots, the outer ones of which droop over in a very graceful manner, and form altogether a very beautiful mass or clump. The shoots are rather thinly clothed with trifoliate leaves, and terminated by crowded racemes of rosy purple pea-shaped blossoms. After flowering the shoots die down nearly to the ground, and the following season's growth is produced from stout buds near the base of the plant. This *Desmodium* does not suffer at all from frost during the winter, but a sharp autumn frost will entirely destroy the blossoms. Owing to the roots penetrating deeply into the soil, it will resist drought during the summer better than many other subjects. The *Lespedeza* is like the *Desmodium*, of a half shrubby character, and forms a roundish, bushy specimen about a yard high that produces in great profusion its bright purplish blossoms. Though very pretty when in bloom, it is altogether a less graceful plant than the *Desmodium*. *Aralia spinosa* is another subject that flowers during the latter part of August and the first half of September. The immense, much-divided leaves of this stamp it, from a foliage point of view, as very distinct from all other shrubs. To the *Spirea Douglasi* may be added as late bloomers *S. Lindleyana* and the white form of *S. callosa*. *S. Lindleyana* is the largest of the pinnate-leaved section, while the second is a dwarf form of *S. callosa* with white blossoms. It continues to flower later than the

typical form, for I have often had it in bloom till cut off by the autumn frosts. The Japanese *Clerodendron trichotomum* is but a little-known shrub, yet it is very distinct and handsome when in bloom. It is a free, open-branching shrub, with large heart-shaped leaves and panicles of white blossoms. As in some of the hothouse varieties, the reddish calyx forms a very conspicuous feature of the flower. *Hydrangea paniculata grandiflora* must find a place among autumn-flowering shrubs, and where the *Escallonia*s are hardy many of them will flower till late in the season. The *Hypericum*s are all valuable by reason of their late blooming qualities. The spreading *St. John's-wort* (*H. patulum*) is a very graceful growing species, and one that flowers very freely; while *H. oblongifolium* (of which a coloured plate was given in THE GARDEN, Sept. 4, 1886) if it were rather hardier would be one of the very best, for it will often flower till frosts set in. H. P.

Cryptomeria japonica.—With reference to the remarks on this Conifer in a recent issue of THE GARDEN I may mention that there is a very handsome specimen of it on St. George's Hill, Byfleet, close to what is termed the Swiss Cottage. Fortune is reported to have said of this tree that he had seen no better specimen in its native country. This tree, growing on the most elevated spot on St. George's Hill, is surrounded by large Firs. Good examples of this fine Conifer are so rare, that I thought some readers of THE GARDEN living perhaps within easy access of the place might like to know of this specimen. It is truly worth a journey to see, and the place is at all times open to the public.—J. C. B.

Grafting Crataegus Pyracantha.—"H. P." in THE GARDEN, Sept. 28 (p. 297), recommends the increase of this shrub from cuttings, which I have proved to root as freely as *Fuchsias* in the way he describes. Own-rooted plants may be layered quite easily and surely by burying their lowermost branches under large and heavy stones, but why cannot we sow its seeds by the bush and rear healthy, strong, and natural young plants by the thousand at once and save a lot of mechanical and unnecessary labour? Seeds of the Firethorn grow as freely as seeds of the Hawthorn, and to talk of any extended propagation of this shrub by cuttings, layers, or worst of all by grafting, is sheer nonsense even from a nurseryman's point of view. Grafting Clematises, even although root-grafting be resorted to, is a mistake. Cuttings in heat are nearly as bad, seeing that these plants are easily layered under stones, far more easily rooted in fact as layers than are *Lapagerias* and some other half-hardy things. But many of the finest Clematises seed quite freely. I saw a splendid crop of seed on *C. Henryi* in a Wicklow garden the other day, also on the larger variety of *C. montana*, and I do not doubt but that we shall some day ere long get rid of the tin-kettle methods of propagation so far as applied to all hardy plants, and rear Clematises from seeds as freely as *Anemones* are raised now. Instead of grafting things generally, let us try to find out how they behave on their own roots. It has been too much the rule to stick everything on anything so long as a mere union could be secured. After all it is the cultivator who must decide whether grafting is a failure, even although the nurserymen may find it in some ways a success. But nothing is a success which is not right, and grafting is very often a great wrong, and the worst things as yet said of it in these columns are mere trifles as compared with the immense harm it has for centuries wrought in our gardens.—F. W. BURBIDGE, Dublin.

SHORT NOTE.—TREES AND SHRUBS.

Magnolia conspicua.—I notice that the fine specimen of this *Magnolia* on the terrace of Gunnersbury House is very full of buds, and there is a promise of a grand bloom in the coming spring. Owing probably to the wet character of the summer of 1888 there was but little bloom comparatively on the tree last

spring. But the rich promise of bloom for 1890 makes amends for any lack of flower in April last.—R. D.

STOVE AND GREENHOUSE.

ERANTHEMUMS.

THE *Eranthemums* are free growing, easily cultivated plants, some of which bear in great profusion very handsome blossoms, while in others the prettily variegated foliage is most attractive. To succeed in their culture they need the temperature of a stove, or at all events the warmest part of an intermediate house. During the growing season especially as light a position as possible should be given them, for some of the *Eranthemums* run up tall if too much shaded. Such being the case, they should have the tops pinched out freely during their earlier stages in order to encourage a bushy growth. Requiring as they do liberal treatment, occasional doses of liquid manure will be of great service, and frequent syringing during the hot weather is essential, not only in order to encourage growth, but also to keep down insect pests.

Some of the best *Eranthemums* are—

E. ANDERSONI, now beautifully in bloom. It is an erect growing plant, furnished somewhat sparingly with large, oblong foliage, and the shoots are terminated by long, slender, dense flower-spikes. The individual blooms are about an inch across, pure white, except the lower lobe, which is heavily blotched with a beautiful rich purple colour. A succession of flower is kept up for a considerable period, and a specimen is very ornamental when the tall, slender stems laden with blossoms are over-topping the plants with which they are associated.

E. ALBIFLORUM is another very useful species, being quite dwarf compared with the others, and quite as free blooming as any of them. This flowers when little more than a foot high, the upright stems being clothed with very deep ovate leaves, and terminated by an upright panicle of white blossoms, both in shape and arrangement somewhat like a cluster of white Lilac. This species usually flowers for some time towards the end of the summer.

E. LAXIFOLIUM is much more branching than either of the preceding, and the oblong foliage is also much smaller. The flowers of this are disposed in terminal panicles, and are of a purple colour.

E. ASPERSUM is a spring-flowering species, whose flowers, white and spotted with purple (somewhat in the way of those of *E. Andersoni*), are borne in small axillary clusters, so that when grown into bushy specimens the whole plant is studded with them. The entire flower is spotted with purple, and the lower lobe, which in *E. Andersoni* is the only portion of the flower so marked, is almost entirely of that hue.

E. CINNABARINUM is a bold strong-growing species which will in one season run up to a height of 4 feet or more. It is very showy in the spring and quite distinct from the others. The flowers, which are borne in long branching, terminal panicles, are of a bright magenta-crimson colour and much larger than any of the others, that is to say, during the spring, for though blooms are occasionally produced in the winter, they are very small and of poor colour compared with those borne later on. The difference between the winter and spring flowers is so great that they would be at once regarded as two distinct species.

E. TUBERCULATUM is a slender, freely-branched plant, with small oval-shaped leaves and comparatively large pure white blossoms. The peculiar tuberculated stems of this species is a well-marked feature.

E. PULCHELLUM.—This must find a place among the best of the *Eranthemums*, for the flowers are

of a beautiful bright blue colour, very freely borne, and produced throughout the dull days of winter. From its colour and winter-flowering qualities, this *Eranthemum* is about the most generally cultivated of the whole genus.

There are some *Eranthemums* whose foliage is their principal claim to recognition. All of these have been at different times sent here from the South Sea Islands. In *E. reticulatum* the lanceolate leaves are of a bright green tint, heavily netted with gold, which form of variegation is quite distinct from that of most other subjects, while *E. tricolor* has its oblong leaves irregularly marked with olive-green, greyish-purple, and salmon-pink in ever varying proportions. Another variegated form is *albo-marginatum*, whose leaves are broadly edged with white; and the last of the *Eranthemums* to mention is *atro-purpureum*, the foliage of which is of a rich purple tint. All the *Eranthemums* can be readily increased by means of cuttings, and some of them also seed freely, from which great numbers of young plants can be raised.

H. P.

***Rochea falcata*.**—This is included in the genus *Crassula*, but it is more generally known under the name of *Rochea*, and so far as its general appearance is concerned there is certainly a great difference between it and the old *Crassula* or *Kalosanthes coccinea*. *R. falcata* is a stout growing plant which will attain a height of 6 feet or 8 feet, but it is seen to greater advantage as a flowering subject when much dwarfer than this. The fleshy leaves, which are arranged in two rows, are of a peculiar greyish tint and curiously twisted. The bright coloured flowers are borne in a large terminal corymb, in which hundreds of them are packed tightly together. They retain their beauty a considerable time. Its cultural requirements are simple, the principal consideration being to see that the plants are not overwatered at any time, but more particularly during the dull days of winter. A mixture of loam, sand, and broken brick-bats will suit it perfectly, and a light position in the greenhouse is a very good place for it. The old *Crassula coccinea* is another most desirable succulent, whose cultural requirements are much the same as those of the preceding. A good way to treat this is to put in the cuttings about August, winter them on a shelf in the greenhouse or similar position, and shift them into larger pots on the return of spring.—H. P.

***Lilium neilgherrense*.**—This Himalayan species is the latest of all the Lilies to unfold its blossoms, for though the earliest flowers may be at their best about the same time as those of the numerous varieties of *L. speciosum*, the majority of them are not yet expanded, and over so long a season does their flowering period extend, that an occasional bloom may be had nearly as late as Christmas. The Neigherry Lily produces long, tube-shaped blossoms of a creamy-white colour and of a thick wax-like texture, and this character, combined with the fact that the temperature is much lower than it is when many of the earlier Lilies are in bloom, causes the flowers to remain in perfection much longer than in the case of most other kinds. I have at different times heard this Lily spoken of as being of easy culture, from which, however, I beg to differ, for it is an extremely difficult Lily to keep in a flowering state for a lengthened period. Considerable numbers are imported every year, and no more particular treatment is required to enable them to flower the first season than that given to other greenhouse Lilies, but the second year's crop of bloom will fall far short of the first, and few will be induced to flower after that. If any reader of *THE GARDEN* has succeeded in growing it in this country for years (not just keeping it alive), I shall be pleased to learn the conditions under which it has been grown, for it is such a beautiful Lily that no pains should be spared to ensure success in its cultivation. Though the bulbs frequently reach this country in a shrivelled up state, yet they can all be depended upon to flower the first year, provided always that they are

strong enough to do so. A coloured plate of it appeared in *THE GARDEN*, April 18, 1885 (p. 342).—H. P.

ALLAMANDAS.

This is a genus belonging to the Dogbane family; all of them are exceedingly beautiful, and they continue to produce a succession of their large and showy trumpet-shaped flowers for months. Nearly the whole of the kinds which we at present know in cultivation are of some shade of yellow. They mostly bloom in the summer months, but in a stove in the suburbs of London I last winter saw a plant which had never been without flowers. This plant was trained over the roof of the house, in which were numerous ornamental-leaved plants and Ferns, and for the majority of amateurs this is the

Allamandas are easily grown and increased from cuttings, save one kind (*A. grandiflora*), and this, if it is struck, does not produce a plant half as good as a grafted one, neither will it produce flowers in such profusion. The soil should consist for the most part of good loam, to which may be added a little peat, good leaf-mould, a small portion of well-decayed manure, and some sharp sand. The whole should be well mixed, and before potting the pots must be carefully drained. April is the time for repotting, but in the case of the plants which have been resting through the winter months and intended for early flowering the beginning of January is perhaps the most suitable time to start them afresh. They should be grown in a temperature which does not fall lower than about 65°, and treated to all the light possible as they begin



Allamanda Hendersoni.

system of culture which I would advise; but if they are grown as specimen plants, or for exhibition, then I would recommend them to be grown in the manner represented in the accompanying illustration. But in whichever manner these plants may be grown they always produce a magnificent display, and a plant of some of the species should never be absent from any stove. Allamandas are sometimes grown in bush form, but in this manner they appear to the least advantage, in my opinion, and I do not recommend it, saving for one kind, *i.e.*, *A. nerifolia*. This plant is apparently not used to making the long shoots which are such a conspicuous feature in the majority of the kinds, and it consequently conforms to the bush system better than the others, but as its flowers are inferior both in size and colour to those of all the others, I do not recommend it to amateur growers.

to break. Water may be given carefully both to the roots and in gentle sprinklings overhead from the syringe, the quantity to be increased as the root and branch growth continues.

The water supply to specimen plants should be reduced in the autumn, and they should be given a lower temperature. Thus kept in a happy medium, they may be taken in hand and started into growth when most convenient; but, however grown, the plants should be pruned hard back in spring, when, if they are required for climbers, they may be allowed to make long shoots; but if they are intended to form bushes, the shoots will require frequent pinching. Allamandas, as grown in the manner shown in the illustration, make excellent ornaments on the table at a public exhibition. Insects are not fond of Allamandas. I do not mean to infer that they are exempt from their attacks, but amateurs may train them upon the

roof of the stove without fear of much mischief arising. The following are a few of the best kinds:—

A. CHELSONI, rich yellow, the limb standing up in a bold manner, and not reflexing.

A. GRANDIFLORA, a profuse bloomer when grafted; flowers the richest yellow of any kind. It does not produce such long shoots as the other kinds.

A. HENDERSONI, flowers large, rich orange-yellow, with a deeper shade of colour in the throat. It is a very free-blooming kind, and is the very finest of all the large-flowered Allamandas. It should be grown by every amateur.

A. NOBILIS, a very fine climber, free in growth, flowers large, bright clear yellow, and a profuse bloomer.

A. SCHOTTI, a bold grower, much resembling *A. Hendersoni*; it, however, has several points which distinguish it, and one is that in the variety under consideration the limb of the large, trumpet-shaped, rich yellow flower is more reflexed than in the other kind, and *Hendersoni* has its buds suffused with a dull maroon on the outside, which is not visible in *Schotti*.

A. VIOLACEA.—I have introduced this plant for the benefit of those readers who may desire a different colour, and in this the flowers are of a reddish violet, which renders it very distinct and attractive, but it is a very shy bloomer. This, however, may arise more from treatment than anything else; certain it is I recollect it some years ago flowering abundantly upon the roof of a stove. It was planted out in a small place where its roots were closely confined, and I think the secret may be in thus keeping the plant short of space and soil to root in.

G.

Fuchsia Frau Emma Topfer.—The great defect of double Fuchsias with white corollas is that they are of more weakly growth than the dark kinds. Most of them, such as *Miss Lucy Finnis*, for instance, are apt to cast their buds, probably because the blooms are out of proportion in size to the strength of the wood. They require really good culture to bring them into a well-flowered condition. They are, too, I find, very susceptible to the attacks of red spider. Although the variety that heads this note to a certain extent shares in these defects, it is, both as regards size of bloom and robustness of growth, much superior to any Fuchsia with a double white corolla that I have hitherto grown. It grows very compactly and the foliage takes on a deep lustrous hue that helps to display the blooms to great advantage. This is a variety that I can well recommend. I fancy that these double Fuchsias, like double zonal Geraniums, are generally more satisfactory in their second year.—J. C. B.

Allamanda Schotti.—In his book on "Stove and Greenhouse Flowering Plants," Mr. Williams states that this species "is a native of Brazil, in the province of Parnahiba, where it luxuriates on the river banks." I have just met with a paragraph which appeared in the *Gardeners' Journal*, about 1848, from which it would appear that seeds of it were raised by Mr. James Stanton, gardener to Mr. R. W. Burton, Springwood, Manchester. In this paragraph Mr. Stanton states: "I beg to furnish a few particulars respecting *Allamanda Schotti*. The seeds from which I raised this plant were collected in Brazil in the beginning of 1846, but in what precise locality I am not prepared to state, by Mr. Gordon Graham, of Brighton, who most kindly presented them to this establishment. The plant flowered here for the first time in the early part of July, 1847, continuing to expand its splendid bright orange-coloured flowers without intermission until the first week in January last, having frequently from five to six expanded flowers upon a panicle at the same time. It is a plant of fine habit and vigorous growth. The one under my management covered an area of upwards of 50 superficial feet. Sir William J. Hooker, in one of his communications to me, says the flowers are most truly magnificent, far superior to any *A. cathartica* he ever saw." Is it to be inferred from

the foregoing paragraph that Mr. Stanton was the raiser of this fine *Allamanda*, or did he simply obtain seeds of this species from Brazil and succeed in raising plants? I infer the latter, though it does appear from Sir W. J. Hooker's remark that he had not previously seen it in bloom. If raised by Mr. Stanton, he assigns no reason for its having been named *Schotti*. I see some authorities date its introduction from Brazil in 1847. I think that an illustration appeared in the *Botanical Magazine* in February of that year. Is there any great difference between *A. Schotti* and *A. Hendersoni*? or between these and *A. Wardleana*? I have seen at flower shows during the past summer what I took to be *A. Schotti* exhibited under all three names, but I have never yet met with an exhibitor who was daring enough to put any two of them in a collection of twelve stove and greenhouse plants, distinct varieties.—R. D.

The Mexican Foxglove (*Tetranema mexicana*).—This is a very pretty dwarf perennial plant, that to be seen at its best requires the temperature of a warm greenhouse, or, better still at this season, an intermediate structure. It forms a close rosette of oblong-shaped leaves of a dark green colour, from the centre of which the flower-scapes are pushed up, several of them being produced by a single plant, and as each flower-head is composed of numerous blossoms, a plant when at its best is quite a mass of bloom. The individual flowers are not unlike those of some of the smaller kinds of *Streptocarpus*, their colour being a sort of violet-purple, shaded with a paler hue. The entire plant is seldom more than 6 inches to 8 inches in height. It is very free flowering, for it will continue to bloom for months, but from its small size is not nearly so effective when grown singly in pots as where several plants are grouped together in a large pan. It will thrive in any ordinary potting compost, and may be increased to any extent by means of seeds, which ripen readily, germinate quickly, and the seedlings soon attain flowering size. This *Tetranema* has been known in this country for many years, but it is quite a rare plant in a garden.—H. P.

Dipladenia atropurpurea.—This old species is a most beautiful stove climber, and one that possesses the great merits of being free growing and a most abundant bloomer, for it will continue to produce its clusters of flowers for several months, and thus form a good companion to the beautiful *D. boliviensis*, which is not half so much grown as it should be. The individual blooms of *D. atropurpurea* are of a chocolate-crimson tint, overspread with a kind of velvety lustre, and the interior of the throat towards the bottom is of an orange hue. The outside of the flower is crimson-purple at the lobes, gradually fading off to white at the bottom of the tube. The entire flower is about 3 inches long and 2 inches in width, so that it must be classed with the smaller flowering *Dipladenias*. It is often included under the head of *Echites*, and is an old inhabitant of our gardens, having been introduced from Brazil as far back as 1814.—H. P.

SHORT NOTES.—STOVE AND GREENHOUSE.

Lilium Wallichianum superbum.—This is a fine, large, white-flowered Lily, now flowering in Messrs. Low's nursery at Clapton, its large, trumpet-shaped, white flowers being very fine. A coloured plate of this was given in *THE GARDEN*, Oct. 28, 1876 (p. 426).

Lilium nepalense.—This is a very fine and curiously coloured Lily, which yields a delightful aroma in the evening. I have flowers of this species in my room, and the perfume, although strong, is in no manner overpowering or disagreeable. It is a large recurved flower with broad petals, the base deep maroon-purple, the recurved portion of the petals bright lemon-yellow. It is now flowering with Messrs. Low at Clapton.—W. H. G.

Pleroma macrantha (*Lasiandra*).—This handsome Brazilian shrub is one of the most effective greenhouse subjects for flowering at this season. It is a plant of easy culture, requiring only a good light position in an ordinary greenhouse temperature. If

it can be kept within bounds without much pruning so much the better, as the flowers are produced on the ends of the shoots. Young plants in pots do not bloom so freely as old ones that are established in a border and allowed their freedom. Some large plants are now in bloom in No. 4 house at Kew.

Dampier's Glory Pea.—The ordinary form of this is one of the most gorgeous of all the Leguminosæ, and there is a beautiful coloured plate of it in *THE GARDEN* for July 23, 1881. The typical species is now too well known to need any description, but there is a well-marked variety which appears to be but little cultivated. I allude to the variety *marginatus*, the individual blooms of which are somewhat smaller than those of the type; the standard of the flower, too, is also lighter in colour, being in fact of a bright scarlet tint. The most prominent feature is, however, the keel, which is white, with a scarlet margin, while the almost black blotch, which stands out so conspicuously in the typical *Dampieri*, is in this variety of a deep plum colour. Where the older kind is well grown, the variety *marginatus* would furnish a good companion to it.—H. P.

FLOWER GARDEN.

COLOUR IN FLOWERS.

THE note in *THE GARDEN* of September 28 (p. 286) touches an interesting point. It is a pleasure to find a correspondent condemning in no unmeasured terms the loss of such good flowers as the old *Dahlia coccinea* through the craze for novelty. "W." also utters a protest against the fawn and allied shades that florists have imparted to the flower, and laments the dimmed tints, unlike the brilliancy of the once popular *coccinea*. If anyone judge the progress of such florists' flowers impartially, one conclusion only can be drawn, and that is novelty has more charm than intrinsic beauty. If this is not so, such a fine single *Dahlia* as *coccinea* would not have suffered undeserved neglect. It would be seen now in the garden broader in petal, fuller, and finer from the result of long years of cultivation, not relegated to the border of a botanic garden. And this question leads to one of equal importance—the infusing of crude mixtures, spotty, dabbled bits of colour into our leading flowers. The single *Dahlia* suffers from strenuous efforts to bring it to the largest possible size. A flabby bloom that can resist little wind was considered perfection, but things are now in some measure reversed, and the inclination is to have the flowers smaller, with firmer and more shapely petals, but there is no desire for better colours. Only recently a variety was certificated in which the ground colour of the flower consisted of buff, overlaid with stripes and streaks of red. Such a flower, apart from the crude, hideous mixture of colour, seldom or never retains its character. Sometimes more than half of it is red; occasionally it consists wholly of the nauseous buff-yellow, and even appears without its spots. There is a too strong tendency to produce "spotty" flowers, and there are certainly sufficient maroon, purplish magenta and indescribable lake tints to thoroughly mystify everyone who attempts to clearly define them. Rich, bright self colours that remain constant should be encouraged, not the variegated flowers and those with inner rings of colour that melt into other nondescript shades quite impossible to describe with intelligent accuracy. This is the reason of the disappointment of many who purchase new things such as Dahlias. The flowers are staged in their freshest beauty and the best of their kind, but the "sportive" varieties are often entirely out of character the following season. There are several yellow varieties, "Perfections," and so forth, but it is question-

able whether there is anything finer, purer in colour, or handsomer than the old *Cervantesi*; yet gardens might be searched for in vain to discover a single plant. And this some are pleased to call progress! Rather is it a retrogression when florists can give us nothing more brilliant or decided in colour than the original types from which the great throng of varieties has come. If a little more attention were paid to good colour, now swallowed up in size of bloom, our gardens would gain much. An example of a flower in a fair way of being spoiled is the *Kämpfer's Flag*. When of a rich decided colour and purely single, it is a noble flower, exhibiting charming folds, curves, and symmetry; but make it half-double and dabble bits of colour over its broad segments, and the result is a bloom deprived of its beauty. Yet there are many varieties in which this original gracefulness is driven out by hybridising to produce new forms; it matters little what they may be so long as they exhibit something novel. The great blemish is seen in the *Auriculas*, herbaceous *Phloxes*, *Cyclamens*, *Primroses*, *Chinese Primulas*, and *Carnations*. In many of these there is a distinct bluish or slaty-purple shade that sometimes takes the form of ash-grey, which spoils the flower and threatens to destroy the purity of colour in the whole race. This is most evident in the self hardy *Auriculas*. These are victims of the florist's mismanagement. There are very few of the colours not dimmed by this intolerable ash-grey or purple-magenta, a mixture of shades dull, uninteresting, and sufficient to shock a sensitive colourist. Purple or blue as we see it in the show *Auriculas* is rich, telling, and distinct; the sapphire colours are as lustrous as the gem, but in the *Primrose* the purples and magentas are evils that, though natural to the flower in a modified form, should be suppressed rather than driven out by those who attempt to introduce a broader range of colours. Pink, rose, crimson, pure white forms make the herbaceous *Phlox* the delightful flower it is; but infuse mauve shades into this bright and happy colouring, and we have the dull wretched results we find where this has been attempted. The *Cyclamen* is another flower in danger of entirely losing its beauty by this injudicious crossing. The colours are far less brighter and richer than three years ago. No one can deny this who has seen the best strains at the exhibitions. Running through them is this ash-grey or kind of mauve that has taken out the bright colouring to the detriment of the flower. A boxful of *Carnation* blooms exhibited last year had flowers of a slaty shade for the ground colour, and the petals edged with dull red. What a combination! And yet such a thing is praised simply for its novelty. This is no fancied grievance. To preserve the purity of the flowers should be the aim of the florist, not the destruction of the loveliest colours by foreign shades that soon ruin the whole race. It is the strange attraction for this slaty-mauve-purple, to give as clear a definition as possible, that has worked and will work considerable mischief with our best and hardiest florists' flowers. Other readers have doubtless something to say on so important a theme.

C.

Cutting back the stems of herbaceous plants.—I think it was Mr. Burbidge who first drew attention to the fact that if you cut the top off the uprising stem of the *Chimney Campanula*, the result was not to prevent its flowering, but to produce a dwarfer plant, though otherwise equally as free blooming and later. Someone else said that if the tops were cut off the young stems of a *Pyrethrum uliginosum*, the plants came into bloom at the same time as though they had not been interfered with, but

only grew half the height. This I have verified this season. Cut and uncut plants are growing side by side and there is no appreciable difference in them, except in the matter of height. I have carried the experiment further, and have cut back perennial *Asters* and other things, and in every instance with good results. *Aster acris*, which is quite one of the most free-blooming and pretty of the early section, is flowering beautifully at 1 foot high. It usually grows 2 ft. or 2½ ft. *A. formosus* (or *Mme. Soyneuse*), which usually grows about 20 inches, is only about half that height; while *A. Amellus* is utterly unlike itself—a densely-branched dwarf mass only 9 inches or 10 inches high. But the most curious results are found in the matter of certain *Sunflowers*—*Helianthus altissimus*, *decapetalus*, &c. The dwarfing and branching effect is so distinct, that *Asa Gray* would, I think, be tempted to give the plants specific names. So far as I see, all free-growing plants may be so dealt with. The practice will be valuable in many ways. You can put an otherwise tall plant where there is only room for a short one, and in very exposed situations the gain will be immense.—T. SMITH, *Newry*.

SOME GOOD EARLY AUTUMN FLOWERS.

LOBELIA FULGENS QUEEN VICTORIA is an indispensable plant for flowering at this time of the year, for the colour is so very rich as to be almost unrivalled. I find single crowns of this capital for planting between other things which go out of flower early, as they take but little room and the flowers have a telling effect until cut down by frost. This year I have used these *Lobelias* between *Carnations* that go out of flower early and make but little grass, and groups that would now be looking dull without something of the sort are very gay and bright. No doubt these *Lobelias* would be used in greater numbers if so many were not lost by damping off at the collar in the early spring months. The best preventive of this that I know of is to give them a little heat as soon as it is noticed. A light position in an intermediate house is a capital place for them, or, lacking that, a vinery not long started will do nearly as well. Even crowns that have rotted off below can be induced to root again in such a position.

CELSIA CRETICA, though classed as a hardy biennial in Nicholson's "Dictionary of Gardening," does not winter safely here in the open ground, and I find it does best treated as a half-hardy annual. It must be sown in heat and quite early, or it will not get into full flower before frost comes and destroys it. It is, however, worth taking a lot of trouble with, for the tall spikes covered with large primrose-yellow flowers are very effective, and the beautifully marked brown eyes make the flowers very attractive. Planted in groups of three and used in conjunction with a very dwarf and free-flowering dark maroon *Dahlia* of the *Cactus* type it is charming. Any plants that do not get forward enough to flower well out of doors may be lifted and potted, when they will make good material for winter and spring conservatory decoration.

PHYGELIUS CAPENSIS AND ANEMONE JAPONICA ALBA.—A big plant of the Cape Fig-wort is looking very fine in a sunny part of the hardy plant border. It has a bold group of the *Anemone* as a background. The light sandy soil here apparently suits the Fig-wort, for it never fails to flower well. In this soil and position it does not object to plenty of manure, but in a heavier staple this should be avoided, and the hottest available spot should be selected for it. In this garden the Japanese *Anemones* increase but slowly, though they grow and flower well. Near here, and in heavier soil, they increase so fast as to become almost a nuisance.

TRITOMA UVARIA VAR. GRANDIS AND PHLOXES.—A group that is looking equally as well as the above and on the same border is formed of these plants. Three plants of the *Tritoma* and several of a tall white *Phlox* are planted together; the leaves of the *Tritoma* come well down to the Grass, while several of its flower-spikes tower above those

of the *Phlox*, which is not a florist's variety by any means, but one with starry-looking flowers which look light and graceful when compared with those which are up to the florist's standard. None of these plants are staked, but they are planted thickly enough to support each other, and they look the better for it.

SALVIA PATENS.—This old favourite must have a word of praise for its lovely colour, and in gardens where it does well few things can surpass it. For associating with yellow *Marguerites* it is excellent.

J. C. TALLACK.

Cassia corymbosa planted out.—In the midst of the loveliest Surrey scenery and placed on a brow of a southern slope overlooking Leith Hill is the garden of Sir W. Farquhar, Polesden Lacy, Dorking. The garden has other beauties than its picturesque and commanding situation, for here are hardy flowers in abundance, and especially characteristic of the place is *Cassia corymbosa*. Late in September the many specimens of it were one mass of flower, a few of which are quite thirty years of age, others twenty. They are dotted about here and there on the turf, with usually a few *Pelargoniums* or similar plants at the base to hide their naked stem, and they give brilliant colouring throughout the summer, lasting until November if the weather is not too severe and stormy. One plant measures about 5 feet in height with a diameter of 7 feet, and the girth of stem is 8 inches. The treatment given is similar to that required by the *Fuchsia*. At the end of October or as soon as the frosts have destroyed the rich yellow flowers, the plants are cut back and then taken up, potted, and placed in a house that just gives protection from frost. During the winter very little water is given, and as growth advances in spring the supplies are increased. At the end of May they are hardened off and returned again to the beds, which in the meantime have been well manured. This *Cassia* is usually confined to the greenhouse, but this short note will show it has other uses. In no other place is it used to such advantage as here, or more painstaking care taken to preserve the beauty of the plants from year to year.

Victoria and dwarf Chrysanthemum Asters.—The present has been a splendid season for *Asters*; at any rate they have flowered well here, and lasted a long time in flower. They are not cultivated with a limited number of blooms to each plant, as are those plants which are intended to supply exhibition flowers, but they are grown with a view to make gay the fronts of herbaceous and Rose borders, with an occasional row planted in a convenient spot in the kitchen garden with the object of supplying cut blooms. In my opinion the *Victoria* and dwarf *Chrysanthemum* varieties are by far the best. They are extremely varied in colour. The *Victoria* seldom grows more than 1 foot to 15 inches in height. The blooms are of first-rate shape and borne in great profusion, in many instances this season as many as twenty flowers on one plant. The small or lateral-like blossoms now produced are capital for cutting. The dwarf *Chrysanthemum Aster* reaches a height of about 9 inches. The main point to study in the successful culture of these annuals is not to sow the seed too early nor in heat, and to transfer the plants in showery weather to their permanent quarters in good time, so that their growth may not be checked. Slugs are at times very troublesome when the tender plants are first put out, but frequent dustings with soot and by keeping the soil about the plants occasionally stirred with the Dutch hoe is the best preventive to this pest.—E. M.

Daffodils from Ireland.—Kindly let me give my reasons for the statement referred to as to the *Daffodils* spoken of by Mr. Engleheart (*GARDEN*, Sept. 14, p. 246). The experience of such as grew the bulbs in Ireland up to 1888, including no less an authority than Mr. Burbidge, is so opposed to the decision of the committee, that I could not conclude but that there was an error or a substitution. Indeed, I have obtained evidence of such confusion. It is customary in every report that I have

seen emanating from the Daffodil committee to give the names of those who submit flowers for registry or non-registry. By referring to the report of this specially adverse decision, it will be seen that this important item was omitted. I may now state that the entire sale of the Daffodils mentioned has from the start been entrusted to me; indeed, the popular names affixed to them I had something to do with, subject to the approval of the stockholder. Neither the latter nor myself sent blooms on this occasion, and then the question arises, Where did they come from? Certainly no individual trader in England possesses stock enough to qualify him as their champion, and most certainly all new varieties sent from one interested other than the introducer ought to be received with suspicion. Indeed, when Mr. A. D. Webster as one of the Daffodil committee at large wrote to THE GARDEN, May, 1888, he must, too, have had his suspicions. It is not the first time substitutes have been submitted to the Daffodil committee. At my installation sitting (1886), in the absence of the owner (a Dutchman), a substitute was sent round the table twice for that well-known variety, Golden Spur, until I detected it. Will Mr. Engleheart kindly say from what source the flowers of the Irish Daffodils were received April 9, 1888, and he might add whether he ever saw the originals growing?—W. BAYLOR HARTLAND, *Temple Hill, Cork*.

Asters sown in the open ground.—Not having the time to sow in frames and transplant, I last April sowed my Asters in the open ground, merely covering with mats until the plants were well up. The difficulty was to save them from the attacks of slugs, but this I managed to do by frequent dressings with soot. Before they could crowd each other I thinned them out to 6 inches apart, and twice in the summer I gave them a top-dressing with concentrated manure, and washed it well in twice during the summer. I can truthfully say that I never had such a fine bed of Asters, and think I never saw better blooms in the seed farms where they are grown with special care. Several who saw them said that many of the blooms were quite good enough for exhibition. I must own that I was surprised at their doing so well, for all that I wanted them for was for cutting, so that I had no thought of aiming at perfection of bloom. My soil is light and I live in a warm county, so that I will not pretend to say that this simple way of growing Asters would succeed everywhere as with me, but I think that many comparative failures in the culture of this fine annual arise from taking too much pains. All know how much more freely self-sown annuals grow than when transplanted. They get a better hold of the ground by the time hot weather comes, and not getting any check they are less likely to be crippled by insect pests. I believe that plants raised in this way a month later than those sown under glass would be found in the end to be quite as forward and would yield finer blooms. Where Asters are dotted among other things, it would not, of course, be practicable to grow them in this way, but great quantities of this flower are cultivated by market gardeners, florists and others for cutting from or for potting up. In such cases there is much in favour of the simpler, labour-saving, and in all ways less expensive method. One needs not to think twice to realise the difference between sowing where the plants are to bloom and under glass, with the indispensable pricking off into boxes, hardening off, and planting out.—J. C. B.

SHORT NOTES.—FLOWER.

French Marigolds at exhibitions.—These unfortunate flowers are doomed to ill-usage. They are grown to an absurd size, and placed on the exhibition table with a paper collar underneath. Florists are utterly spoiling what is a beautiful flower when not muddled with.

Actæa spicata—As "W. W." inquires if this is wild in England, I write to say it grows in many woods in Yorkshire, and is more remarkable for its handsome black berries than for its short spike of white flowers in May. From what "W. W." says, it seems

highly probable that the plant he grows is quite another thing; not blooming in spring, but later, and of far greater stature in every way. In the rocky woods I have never seen *Actæa spicata* more than 2 feet high; it frequently grows and flowers at the same time as *Paris quadrifolia*, the Herb Paris of evil fame with the Baneberry.—E. H. WOODALL, *Scarborough*.

Mina lobata.—This new climber is very effective in proper sites. In rich ground the flowers are long in appearing, in poorer soil the growth is not so rampant, and the blooms then stand out beyond the dark glaucous green leaves. In one overrunning a standard Rose, a white Jackman's Clematis has become intermingled. The contrast is most charming. The blossoms keep their beauty long in water.—J. S. B., *Bath*.

SAXIFRAGA LONGIFOLIA.

This beautiful species has long been considered the queen of the silvery or crusted-leaved section, and when doing well and in robust health it is certainly a most valuable subject for the



Saxifraga longifolia. Engraved for THE GARDEN from a photograph sent by Mr. Edward Moir, Newport-on-Tay, N.B.

rockery. The characteristic beauty of its huge rosettes of silver crusted foliage, its immense columns of innumerable pearly white flowers, and above all the ease with which it may be grown mark it at once as a most desirable subject for every rock garden. Even where the conditions cannot reasonably be considered as favourable as in its native habitat, it is not at all unusual to see the individual rosettes over a foot in diameter, many of the leaves being each close on 7 inches or 8 inches in length. Its headquarters are the Pyrenees, where it may be seen in quantity clothing effectively the surface of almost perpendicular rocks above the Val d'Arize, the Vallée d'Eslunbé, Haute du Morboré, in the Hautes Pyrenees, &c. This simple fact has given rise to many of the failures experienced by the traveller with a mild taste for rock gardening. The rosettes, where they can be safely gathered, are pulled roughly from the

rocks and sent home with instructions to plant them in a brick wall, as being the nearest available position to their native rocks; they, of course, fail, both because the half of the roots have been destroyed, but chiefly because there is nothing in common between Nature's rockeries and a modern brick wall; indeed, it would be something akin to the miraculous if a single rosette was alive a month after. If the collector could have followed the roots of these Saxifrages he would have found them feet, perhaps yards in the crevices of the rocks cool and moist, while the part on the surface is quite dry. These are just the conditions that suit *S. longifolia*, and this may be easily managed even on small rockeries, with layers of stones, &c. It is always safest, however, to secure seed of these alpine. They can all be raised in a cold frame and soon make good-sized plants. They can either be kept in pans or boxes, or planted out in suitable spots on the rockery; the more exposed the better they will thrive. When a rosette throws a flower-stem it dies off, as most of this section do; seeds, however, are usually ripened by which the stock may be kept up. Its near allies *S. crustata*, *lingulata*, &c., are all very handsome, and well worthy of a place even in select collections.

K.

The Belladonna Lily.—The note on this beautiful Lily in THE GARDEN, September 14 (p. 237), is most opportune. It is a pity that more gardens do not possess this fine autumn-flowering plant. No doubt one of the chief causes is the want of interest displayed in its cultivation. I have seen odd plants here and there in herbaceous borders and rockeries, but never saw them flourishing in such places. You say it is as easy to cultivate as a Potato. I go farther than that by saying it is very much easier, because there is not the annual trouble of planting, lifting, and storing the bulbs. The chief point is the position; against a low south wall is best; if against a warm house all the better. If the soil is of a sandy nature, nothing more is needed than the addition of some partly decayed manure placed under the bulbs at planting time—early in February. A thick mulching in dry weather when the growth is being made is also of advantage. If the soil at the foot of the wall be cold and heavy like ours was when our plantation was made four years since, I should advise the removal of the whole to a depth of 18 inches and as much wide, filling in the bottom with clinkers or broken bricks to a thickness of 6 inches for drainage. Over this lay some turves, fresh cut, to keep the drainage clear, filling up the space with loam, to which may be added some peat, partly rotted leaves, sand, and a sprinkling of charcoal, which will tend to keep the whole porous. Plant the bulbs 4 inches under the surface, setting them on a base of sand to give them a start, mulch the surface with half-decayed leaves, and supply the plants liberally with water if the weather be dry during the time growth is being made. Our bulbs were treated in this way, and with the exception of last year when, owing to the wet season, bloom spikes were scarce everywhere, they have rewarded us with abundance of flowers, which are always appreciated, either growing upon the plants or used in a cut state for filling vases.

Their delicate perfume is also much liked by some.—S.

NOTES FROM NEWRY.

TRITOMA LEICHTLINI DISTACHYA is one of the most distinct and handsome of the newly introduced kinds. It has pale green semi-prostrate leaves and a 2-foot scape bearing an almost spherical head of flowers which are at first of rather a disappointing dull yellow colour, but become brighter, and are then well shown off by the bright red stamens which are gradually exerted until they ultimately hide the corollas and the head becomes a mass of black-tipped bright red filaments, resembling nothing so much as a *Metrosideros* and quite unlike a *Tritoma*.

T. HYBRIDA LA PERLE is another very distinct plant. The flower-scapes are each about 2½ feet high, the head being 6 inches or 7 inches long. Colour a rather peculiar cinnabar-red, the corollas being margined with white; the anthers are golden. The most striking feature of this handsome variety is the regular imbricated manner in which the flowers are arranged on the spike.

T. UVARIA RUBRA is another variety worth special mention. It is of medium height, the heads nearly spherical and of a bright sealing-wax red colour which is very lasting; the flowers finally fade to yellow.

T. UVARIA METEOR is of robust growth, the flower-stem reaching 4 feet or more; the head, 1 foot long, is clear apricot, nearly of the same colour as that of *T. Macowani*. All these are in bloom now, middle of September.

HERBACEOUS LOBELIAS.—I send you a spike of my new kind, *Firefly*, the handsomest of the scarlet section. The petals are nearly twice as broad as are those of any other kind, while the colour leaves nothing to be desired. It is, I think, the most vivid of all. It is most vigorous, often growing 5 feet high, and of free branching habit.

CERES is another kind I like very much, of a glittering magenta-crimson marked with rose. It is of free habit also.

ROSEA is also a distinct, vigorous, and handsome kind. The clear rose colour is, so far as I know, unique amongst the group.

SPHOCAMPYLOS TRICOLOR.—This distinct and pretty *Lobeloid* is this season stronger than usual, being over 6 feet high. It was planted many years ago at the foot of a warm wall, and gets no sort of protection. It dies down annually, and shoots up again with renewed vigour. I think this plant was redistributed a year or two ago under a new name.

THE AUTUMN BLUEBERRY (*Billardiera longiflora*).—I send you berries of this distinct and pretty New Zealand plant. Here it is of the freest possible growth, having gone up to the top of a wall fully 12 feet high, and extended itself right and left amongst the branches of Peach and other trees. It is a veritable "tree strangler" in a small way. It is beautiful in the spring when draped with white blossoms, and more beautiful in the autumn months when these blossoms have turned to turquoise-blue berries. No weather affects it.

CRINODENDRON HOOKERI.—The finest specimen of this I have yet seen is growing in a brick pit at the eastern end of a cool house at Dromolane, near this town. The house is so situated that the sun fails to shine upon it after 9 o'clock or so in the morning. It is trained in a fan-like manner, and covers a space 4 feet by 4 feet, and was recently in great beauty, having no fewer than ninety-seven flowers open at the same time. I believe many have failed to grow this beautiful shrub. The above may induce them to try again. T. SMITH.

The double Soap-wort (*Saponaria officinalis* fl. pl.).—The single form of this plant is common enough, but is it not unusual to find the pretty double form growing wild? Here in Suffolk the double variety is quite plentiful in some rather open woods. It appears quite natural there, and at the present time looks beautiful with its profusion of large, double, delicate, flesh-tinted flowers. Had the spot been near

to a house or garden, I should have imagined someone had been naturalising the plant, but, however it came there, it is quite at home, and looked better even than in an open, sunny, mixed border.—A. H.

SOME SCRAPS ABOUT GARDENS.

A FRIEND writing, encloses a few mems. picked up in her library:—

"Lord Herbert, of Cherbury, used to say that a 'gentleman' ought to know the nature of all plants, being our fellow creatures, and how few comparatively really care about them."

"There is a nice criticism of Washington Irving on English landscape gardening: 'Those charms which in other countries Nature lavishes on wild solitudes are here assembled round the haunts of domestic life. They seem to have caught her coy and furtive graces and spread them like witchery about their rural abodes.'"

"Did you ever glance at an old-fashioned novel by a once celebrated man, Plumer Ward, called 'De Clifford?' There are such capital remarks on gardens and 'happy valley' life in it. He says at last that all his bothers melt when he walks up his Daisy-studded walk, especially when it is showery. 'P. W.' has a very special delight in herbs for their scent, and goes on to animadvert on the 'far too many beautiful Tulips of flesh and blood (all show and no fragrance) that throng our drawing-rooms.'"

"It seems that Rousseau had my wish to be buried under a tree, and said he was sure that if he was laid under an Oak he should revive (you wickedly observed that perhaps I should hurt its roots)."

"Queen Caroline wanted to shut up St. James's Park and convert it into a garden for the palace, and asking Sir R. Walpole what it would cost probably, he said, 'Only three crowns.'"

"Descartes was so fond of his flowers that he used to go out very late at night to study 'le sommeil de la floraison avant le lever du soleil.'"

"I see Virgil grafted his Pears."

MARKET GARDEN NOTES.

CARNATION SOUVENIR DE LA MALMAISON.—Carnations appear to be very popular just now, and I am told that during the past summer they have realised better prices than Roses. There is no doubt that the old *Souvenir* has been the flower of the season; for button-holes it has been much in demand. It does not seem to matter at what season the blooms are sent to market, they are sure to sell readily. They make most, of course, early in the spring, but even in summer they realise very good prices. This *Carnation* does not belong to the so-called winter-blooming section that forms their buds in autumn, and it will not bear hard forcing. It may be brought along gently in a light, airy house to bloom in spring. Without heat the blooms do not expand before July. I find that a most important point is to get the pots well filled with roots by the time the flower-stems appear. If the plants are not well established they make weakly stems, not rising much above the foliage, and producing only one or two moderately-sized blooms. A really good, vigorous plant in a 6-inch pot will throw up five or six stout stems, each one carrying as many good blooms, the largest of which will be as big as a good sized Rose. The worst of having indifferently rooted plants is that the flower-stalk of the secondary late blooms does not extend sufficiently, which makes it awkward in cutting for market. When my plants are throwing up to bloom, I give them a little weak liquid manure. This must, however, be very weak, for the roots are so small that they are soon injured.

GOOD TOMATOES.—Looking through some large houses cropped with Tomatoes for market, I have come to the conclusion that, from the market gar-

dener's point of view, there can be no finer kind than *Perfection*. It has every point that is necessary to ensure a ready sale in the London markets. Skin smooth as an Apple, glossy, high in colour, and plenty of fruits weighing 1 lb. have been cut this summer. How this *Tomato* may answer for early work I cannot say, but for main crop purposes I do not well see how it is to be surpassed. It does not crop quite so heavily as *Abundance*, which occupies one division of the house, so that there is a good opportunity of comparing them, but the individual fruits are so much larger that the aggregate weight would probably be greater in the case of *Perfection*, and price in the London markets is immediately determined by size and colour. By the side of such kinds as these the old *Red* appears a poor, shapeless, dingy-looking fruit, and whatever may be its merits for forcing there can be no doubt that its time is past for furnishing the main supply of Tomatoes at this season of the year.

BLACK CIRCASSIAN CHERRY.—A Covent Garden salesman tells me that this *Cherry* realises 1s. 6d. per lb. wholesale in the London markets. There appear to be very few plantations of it, one being near Hampton, in Middlesex, and this is now past its prime, the trees showing signs of decay. How is it that a fruit so valuable for market purposes should be so neglected, for it is evident that it is the quality in combination with the small supply that keeps the price up? Curiously enough, I never remember, either in *THE GARDEN* or elsewhere, to have seen special mention made of this *Cherry*. Perhaps your readers who may have grown it would favour us with their experience of it. It is doubtless one of those fruits which, like the *Ribston Pippin Apple*, require certain favourable conditions of soil or climate, or perhaps both, to ensure its doing well enough to be profitable. I have been assured that such is the case. In any case this is a fruit that should be tried by all who are planting for profit, for it is reasonable to assume that the requisite conditions are to be found in the more favoured districts of this country.

J. C. B.

Climbers for a covered way.—I have an iron covered way (espalier), 45 feet long, 7 feet high, 6 feet wide, which I wish to cover with flowering climbers. Would some of your correspondents suggest the most effective way of doing so?—GREYFRIARS.

Destroying fish in ponds.—I shall be glad if any reader can tell me of any means to get rid of a quantity of small fish in a lake without its being emptied, and without injuring the water in any way, as the water is used for drinking purposes, washing and all kinds of domestic uses. The water always is very thick and puddle-looking. The depth of water is about 4 feet, and no water-fowl kept.—H. W. P.

Lichens on fruit trees.—Some three years ago, when I first had the garden attached to this house, the fruit trees, which had all been greatly neglected, bore very little fruit. But this year I have had a good supply of Pears, Apples and Plums, no doubt the result of care and attention. Many of the trees, however, are still covered with Lichens. Are these injurious, and if so, what should be done to remedy the complaint.—B. A. THORNYCROFT, *Steyne, Isle of Wight*.

BOOKS RECEIVED.

Part 5 of "Orchids and their Management." Upcott Gill, 170, Strand, W.C.

"History of a Field newly laid down to Permanent Grass." By Sir J. B. Lawes, Bt., LL.D., F.R.S. "Results of Experiments on the Growth of Potatoes for Twelve Years in Succession on the same Land." By J. Gilbert, M.A., LL.D., F.R.S.

"Nature Stories, Myths, and Phantasies." Tales for the young. By Young Pan. Hamilton, Adams & Co., Paternoster Row. 1889.

Names of plants.—*E. Woods*.—2, *Cymbidium* sp.—*W. B. Leicester*.—1, *Statice speciosa*; 2, *Echinops ruthenicus*.—*C. H.*—Send flowers; evidently a *Lycaste*.—*J. S. A.*—*Rhodanthe Manglesi* var. apparently, but specimen very poor.—*A. Blackie*.—3, *Euphorbia Lathyris*.

Names of fruit.—*J. Ratnabow*.—*Warner's King*.—*Morris, Stoke-on-Trent*.—1, *Hanwell Souring*; 2, *Lewis's Incomparable*; 3, *King of the Pippins*.—*A. Blackie*.—1, *Pear*, *Beurré d'Anjou*; 2, *Apple*, *Norfolk Beautifin*.

WOODS & FORESTS.

THE POPLAR.

WHEN planted on suitable soil no tree grown in this country can surpass or even equal the Poplar for rapidity of growth and imparting quickly a furnished appearance to the landscape. The species which I have found best adapted for planting in this country for profit are: The Black Italian (*P. monilifera*), the White Poplar (*P. alba*), Grey Poplar (*P. canescens*), and the Aspen Poplar (*P. tremula*). The Aspen may be planted with advantage on damp marshy ground that cannot be thoroughly drained, as well as on thin rocky positions on the most exposed hillsides and mountain peaks. On rocky ground, of course, the trees do not attain a large size, yet they are very ornamental, and in autumn when their foliage assumes a pretty orange colour they contribute largely to the beauty of the landscape. The Abele and Grey Poplars are both well suited for planting on bare wind-swept districts of the sea-coast where the soil is of a poor sandy texture and liable to become dry during the summer. The three last-named species are apt to contract heart-rot and pumping if allowed to stand for any length of time after they have matured their growth. Under such circumstances the planter should cut them down and turn them to account as soon as he finds them adding little or nothing to their cubic contents. All the forms of the Poplar are rather impatient of pruning, more especially when branches of any great size are removed close to the trunk of the tree, as by so doing the wound is apt to retain moisture and lay the foundation of rot and decay. As some of the species, however, have a tendency to produce large unwieldy branches, these had better be cut back in order to lessen the risk of rupture by wind. From its quick growth, large size, and the superior quality of its wood, the Black Italian Poplar occupies a prominent position. It is, however, by no means confined to any particular class of soil, as I have planted it with success upon stiff clay resting upon a clay subsoil, as well as upon gravelly loam resting upon a loose bottom.

Although the Poplar is often planted in mixed plantations, yet to grow the tree to the best advantage it should be grown in blocks by itself, and at such a distance apart that clean stems free of knots are produced. The distance apart may vary a little according to soil and site. The Poplars are not suitable for planting on mossy ground, as they never attain a large size, unless the staple is well mixed with clay, and, besides, they are liable to contract heart-rot at an early stage of their growth, and their wood is always of a soft inferior quality. Good clean-grown Poplar timber, free of knots, is used for a great variety of purposes, and in cases where the cost of transit is not too heavy, it often commands as good a price as Larch. I have planted all the above-named species with perfect success at an elevation of about 1000 feet above sea level. I may, however, state that the Aspen species often reproduces itself at a much higher elevation than that indicated.

J. B. WEBSTER.

Quercus Daimyo.—This is by far the largest-leaved Oak I have ever seen. A tree of it here has borne leaves during the past season from 10 inches to 14 inches in length and about 5 inches in width at the widest part, and it seems to be a robust grower. This being comparatively a newly-introduced Oak, and probably not known to many planters, I venture to strongly recommend it as an ornamental tree, far surpassing in size *Q. macro-*

phylla and *Q. nobilis*, although these are both remarkable for their handsome foliage; the latter particularly is a brilliant tree in autumn, its leaves when dying off assuming rich tints. While speaking of Oaks, permit me to mention two more well worth growing, viz., *Q. Toza splendens* and *Q. Robur purpurascens*; the former has fine foliage, and the latter bright reddish purple young shoots. The latter is, I think, also known under the name of *Q. Robur purpurea*.—T. N. G.

THE GROWTH OF YEW TREES.

It is not often that reliable data can be obtained as to the age and growth of trees, but Mr. Walter Money, F.S.A., writes that the parish registers of Basildon, Berks, which furnished the long desired information as to the birth and burial of Jethro Tull, contain some interesting memoranda respecting the growth of two Yew trees planted in the churchyard by Charles, Lord Fane, in 1726. One of these trees, it is recorded, was planted on the south side of the church, and the other on the north. In the year 1780, that is, fifty-four years after planting, the tree on the south side measured 6 feet 3 inches in girth. It was again measured in 1796, when the girth had increased to 8 feet 6 inches. In 1834, or after an interval of thirty-eight years, the dimensions had increased to 8 feet 9 inches. In 1889, or 163 years after planting, the tree shows a girth of 9 feet 10 inches; all the measurements being taken close to the ground. The size of the Yew on the north side is not recorded in 1780 or 1796, but in the year 1834, when both trees were measured by the Rev. J. S. Henslow, Professor of Botany in the University of Cambridge, its girth close to the ground was 9 ft. 2½ in.; and at the present time (1889) it measures at the same place 9 feet 6 inches. From these figures an idea may be formed of the time required for the Yew to attain such a bulk as many of those still standing in Berkshire. At Aldworth, in this county, so celebrated for the number of rich tombs it contains of the De la Beche family, there is a Yew in the churchyard, supposed to be 1000 years old, which measures 27 feet in circumference. This tree has not increased in bulk since 1760, when its size is recorded in More's "Berkshire Queries" as 9 yards in girth; and it is well known that trees, particularly the Yew, cease to increase in size after a certain age. At Bucklebury there is another ancient, time-shattered Yew, which also measures 9 yards in circumference near the separation of the branches from the trunk. Still more interesting is a group of venerable Yews at Watcombe, a lone farm on the road from Hungerford to Wantage and Oxford—the site of a cell or grange, with a church attached, belonging in pre-Reformation days to the Benedictine Monastery of Hurley, to which house it was given by Geoffrey de Mandeville about 1086, and mentioned in the Pipe Rolls as being under the charge of a provost in 1166. These Yews are in the shape of a cloister court, and are planted in double rows, forming alleys or covered ways between them, with a pond in the centre. This enclosure has "for time out of mind" been known by the country people as "Paradise," derived probably from the form of the enclosed portion of the forecourt of the basilica, which was called the "Paradise," and from the surrounding porticos the cloister took its origin. The "Sprice" at Chester is a corruption of "Paradise," as it was called at Chichester and Winchester. A pair of sturdy Yews, a little to the rear of "Paradise," at Watcombe, are known as "Adam and Eve." Singularly enough, these trees are of the male and female species, one producing berries, and one not, while the foliage of "Adam" is of a darker shade than that of its companion "Eve." The former measures somewhat over 9 feet in circumference, and the latter 10 feet. Standing alone at some distance in the background, farthest removed from "Paradise," is another Yew tree, the hollow trunk of which is now nearly reduced to a shell, but carries a flourishing head, and measures over 20 feet in circumference. It has a lateral opening, and five or six persons could comfortably obtain shelter within the central cavity. These notes may probably lead to the pub-

lication of similar records denoting the age and size of other specimens of this gloomy Evergreen.

Nurses for trees.—With good nursing almost any shrubs or trees may be made to grow anywhere. Without it there are hundreds of places where it is hopeless to attempt to grow rare coniferous or common trees, such as Oaks, for instance. Whatever does best in the neighbourhood—whether it be Larch, Spruce, Scotch Fir, Birch, or even Broom—is the best plant to use for nursing and sheltering the trees or shrubs we wish to ultimately predominate. Plant choice trees in the positions and at the distances you wish them to occupy, but plant the nurses everywhere. Let them fill all the intervening spaces, almost embracing the permanent plants on all sides, without actually touching them. The function of these nurses is to help the other trees to grow. But in arboreal matters the nurse is often allowed to grow over and smother the tree it was meant to help; and so there has been a rebound against the whole system of nursing, and we constantly see trees of rare form and surpassing beauty set down in the open teeth of the wind. Is it any wonder that, thus exposed, they refuse to grow, become stunted, and die?—F.

The American Larch (*Larix americana*).—This Conifer was introduced to this country early in the eighteenth century; but, even in the present, it is but rarely to be found in any plantation, wood, or forest in this country. It is a slender tree with heavy close-grained wood, horizontal branches, and with more slender and usually shorter leaves than the *Larix europæa*. Compared, however, with the European Larch, the American species is inferior in quality of timber, and is a less beautiful tree; but the common Larch, in its present diseased condition, cannot be depended upon to produce good, sound, and perfectly matured timber, and can only be profitably cultivated with a view to quick returns in the shape of hop poles, fencing rails or palings, pit props, railway sleepers, temporary buildings, or for other ordinary rural purposes. Until, therefore, we can obtain a new and healthy progeny of the European Larch, I would recommend the American Larch as a useful and profitable, though coarse-wooded, tree, for the climate of Great Britain and Ireland. It is equally hardy, and quite as rapid in growth as the common kind, and quite as accommodating as to soil and situation, and would produce equally quick returns in poles, &c.; though, as I have stated, the wood is somewhat coarser. Its cones and foliage are smaller than those of the common Larch, and its branches longer and less regularly disposed. There are several forms or varieties of it, all of which are hardy and useful enough in ornamental planting. This tree is also called in America the Black Larch, Tamarack, and Hackmatack.—J. N.

Leycesteria formosa for covert.—This shrub is thoroughly naturalised here. Large numbers of seedlings spring up everywhere yearly. The situation is sheltered, and the soil on a moist bottom. Established plants make rods 9 feet or 10 feet high in one season. Many have been planted in the woods, as I have been told the berries are an attraction to pheasants. Can anyone inform me if it really is so?—J. M., Dorset.

A Birch wood.—In passing through a wood wholly composed of Birch trees the other day I saw beauties in the crowded trees distinct from those that we all admire in the isolated ones. The numerous white pillars, tall and slender from overcrowding, and the arched effect over a narrow roadway were beautiful. The whole thing was very suggestive to me of the drawbacks of the usual mixed system of our shrub-beries and groves—a system by which one sees the same effects almost every where.—H.

Lawn trees.—In selecting trees designed to decorate the lawn, and especially positions clearly within view, care should be taken to select those that retain their foliage fresh until late in autumn. Unfortunately, too, many plant some of the early-maturing deciduous trees, which wither away while shade is much wanted. Let us remember that with deciduous trees their leaves usually commence to fall with the maturing of their fruit, and that exotic hardy trees, such as the Acacia and the Catalpa, retain their leaves perfectly fresh much longer than native English trees.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ROOT-LIFTING.

CROPS of fruit generally, in many places extremely scanty, having been gathered and stored, the most important work in the fruit garden is the root-lifting of Peach trees. The culture of the Peach in the open air within the past few years, many of them by no means good ones, has made rapid strides. Raisers and introducers of new sorts have given us early and late varieties, which have lengthened the season at both ends, the most profitable, but scarcely the best coming in about the middle of July. These, it is hardly necessary for me to say, will never displace our old standard sorts, including the Noblesse, the Bellegarde, the Mignonnes, and others, but they form a valuable advance guard, to which I can do full justice without breathing a word against other modes of culture, a healthy tree in a pot or covering hundreds of feet of trellis under glass giving me quite as much pleasure as a good specimen on the open wall. Glass unquestionably is the fruit grower's sheet anchor; cold, wet, frosty springs are his bane; but somehow or other, much to his credit, he covers high and lengthy walls with handsome trees and gathers good crops of fruit where harder species sometimes fail. The complete art of culture as now practised need not be touched upon here, but one important item, root-lifting, being now in season, I would ask all who wish to retain or win their spurs to begin, continue, and end this annual operation before the leaves fall. Root-pruning or chopping off the best of the roots is a clumsy operation, but root-lifting is a different business altogether. It consists in opening a trench, longitudinally it may be, right along the centre of the border, near to, but quite clear of the roots of the trees, or, the operation having been performed annually since the trees were first planted, a semi-circular trench may be thrown out a given distance from each bole or stem. In either case, the heading having been opened, steel forks are brought into play; the earth bit by bit is forked down and worked back, keeping close down upon the drainage until a complete network of strong and fine roots is laid bare. All the strongest roots are shortened to within a few inches of the surface of the ball; it may be 3 feet or it may be 6 feet in diameter. All the weak ones, the real workers, are kept moist and carefully retained. If the drainage is good, and the compost, free from mulching or manure, is satisfactory, the latter is returned to the trench and made very firm in thin layers; each root, be it large or small, is relaid as the work proceeds; the soil amongst them is made moderately firm, care being taken that none of them are broken or bruised. Treading, however, is not the best method of firming the compost; therefore when all the roots are covered with soil the whole mass is flooded home. Water neither breaks nor bruises the tender rootlets, but it washes the soil into every crevice; it solidifies the whole mass, and in twenty-four hours, in unison with the leaves, the roots are at work again. As the trench round each tree is flooded it is left for a time, a night or a day, to settle, and when quite firm the remainder of the compost is put in, evenly pressed with the feet, and the whole border is mulched with long stable litter. In my own management, as I have often

stated, this root-lifting is performed every year, but unless the trees are extra strong I never break into or disturb the wall paths, which are 5 feet to 6 feet in width. The trenches each year are opened a shade further away from the stems of the trees, but we always work inwards until the knife-cuts of the preceding year are visible, and then, finding four or five roots emanating from each cut, these are shortened prior to being relaid. An important preliminary operation I have overlooked, and that is the removal of every particle of manure from the surface of the border before the trenches are opened. The compost, pure calcareous loam and old lime rubble, may then require fortifying with a tithe of fresh, but I never allow a bit of manure to pass into the staple of the border. Where large healthy trees break into strong growth they advance rapidly to grossness, making wood which seldom produces fruit the following year, no matter how favourable the autumn may prove for ripening. Trees, on the other hand, which receive a wholesome check at the hands of the root-pruner are in the best condition for setting a heavy crop of fruit, and having all their roots under the influence of sun-heat, each shoot gathers strength as it goes, or, failing in this, the defect can soon be corrected by mulching and feeding with liquid.

W. C.

ROSE GARDEN.

T. W. GIRDLESTONE.

NEW ROSES OF 1888-9.

THE NEW ROSES that were distributed in June, 1888, and that have therefore flowered more or less in character this summer, are about up to the average, and, as usual, include a few first-rate novelties, both English and Continental. Of course, the chaff is greatly in excess of the grain, the complete list containing the names of more than a hundred varieties, about half of which have not even reached this country, and are never likely to be seen here. Of the rest, about three dozen constitute the pick, and the following have been carefully tried, the result indicating that the English raisers are responsible for the best of the Hybrid Perpetuals, and the French for the best Teas, while both contribute charming additions to the pretty miniature Polyanthas.

TEAS AND NOISSETTES.

HENRIETTE DE BEAUVAU (Lacharme).—The last Rose sent out by the greatest of the French raisers, and a valuable addition. It is a Dijon Tea, flowering late, but freely; a genuine climber, with deep red stems and foliage, against which the pale yellow self flowers are effectively displayed. The flowers are large, full, well formed, with a high centre, in colour about the shade of Etoile de Lyon, quite distinct, and likely to be frequently exhibited. Throughout the past month many blooms of this variety have been especially beautiful.

LADY CASTLEREAGH (Dickson).—A fine plant, vigorous, with handsome foliage little liable to mildew, very free and perpetual flowering; flowers large, very full, charming in their creamy-yellow colour, margined or washed with rose, very fragrant, though hardly high enough in the centre.

L'IDEAL (Nabonnand).—One of the most lovely bud Teas that has yet been raised. M. Nabonnand describes it as a Tea Noisette, and it certainly is not easy to say which heading it should be classed under. The point, however, is absolutely immaterial, in view of the fact that the beauty of the variety cannot fail to ensure it a wide popularity, quite irrespective of its parentage or origin. The plant is a moderate climber, attaining about the same stature as that delightful Noisette Ophirie; every shoot produces blossom, and the variety is as

free and as ever blooming as a China. To describe the colour of the flowers is not easy, for the shades are as strangely mingled as beautiful. The first sight of several plants in flower immediately recalled Fortune's Yellow, than which, however, the tints of L'Idéal are all stronger and deeper. Yellow, deepening to orange, suffused and softened with warm rose colour, gives a richness and distinctness of hue that ought to make Nabonnand's seedling as much the rage for buds and bouquets as William Allen Richardson. In fact, for this purpose the buds of L'Idéal are a good deal the better adapted, being longer and more graceful in outline, and though they are less full than those of Mme. Ducher's variety, even the expanded flowers produce a charming effect of colour on the plant.

MME. HOSTE (Guillot).—The accident of alphabetical arrangement brings the best of the Continental contributions together. This new Tea, like not a few of the Roses, and especially of the Tea-scented varieties sent out by the famous Lyons house, has proved to be in every sense of the word a host in itself. If the French growers had sent us nothing else besides this variety and L'Idéal, these two Roses would still have sufficed to make the season notable. Mme. Hoste can hardly be more exactly described than as a pale lemon-coloured Anna Olivier. In habit, mode of inflorescence, freedom, and form of flower, the new Rose closely follows the older variety, the main difference lying in their entire distinctness of colour, while perhaps the flowers of Mme. Hoste are inclined to come generally a little larger than those of Anna Olivier. The constancy of the novelty is also exceptionally conspicuous, almost every bloom being of characteristic form as well as of good size and colour, and there can scarcely be a doubt that Mme. Hoste will take a prominent position among the first-rate Teas.

MME. JOSEPH GODIER (Pernet fils—Ducher).—Very free and charming in colour, being of a variable coppery-yellow shade flushed with rose, but it is doubtful whether it is likely to come large enough to be valuable to exhibitors.

PRINCESSE DE SAGAN (Dubreuil).—If only the flower of this Rose were rather larger and fuller, it would be a splendid acquisition. Here, at last, is a real crimson Tea, as free and ever blooming as the common China, and of a rich velvety maroon-crimson that recalls the shade of the Hybrid Perpetual Louis Van Houtte. The effect of the plant in the garden is admirable, as the colour stands well even in the fully expanded flowers and does not fade off to any dingy purplish shade; but the flowers are neither so large nor so full as could be wished, and consequently in spite of their distinctness and much wanted colour cannot claim to stand in the first rank.

SOUVENIR DE MME. METRAL (Bernaix).—A red Dijon Tea, distinct and pretty in colour, bright cherry-red with yellow base to petals, but flowers somewhat lacking in form.

TRIOMPHE DES NOISSETTES (Pernet père).—A variety not dissimilar in character and colour to the preceding, and equally free and perpetual.

CHINA.

LAURETTE MESSIMY (Guillot).—A lovely bud Rose, admirably adapted for bedding, making a nice bushy plant, ever-blooming, and producing in the utmost abundance its long, graceful buds of brilliant rose colour, with yellow base; a variety that should prove invaluable to those who require a supply of button-hole bouquets of Rose buds.

BOURBON.

KRONPRINZESSIN VICTORIA (Vollert).—A pretty pale sulphur-yellow sport from Souvenir de la Malmaison, opening flat like the type, but in the bud and half expanded state a very attractive Rose. It resembles its parent in its free and perpetual character and in its sturdy, erect habit of growth, so that it makes a very distinct and effective variety for bedding or massing, as well as for supplying an abundance of cut flowers.

POLYANTHA.

CLAIRE JACQUIER (Bernaix).—A distinct addition to the climbers, the large trusses of miniature flowers being of a novel shade of orange.

GEORGES PERNET (Pernet fils—Ducher).—A pretty rose colour or peach blossom, but getting too near the Chinas and losing the characteristic inflorescence of the Polyantha—a tendency that should not be encouraged.

GLOIRE DES POLYANTHA (Guillot).—The best, so far, of the pink varieties, bright in colour, perfect little flowers, produced in large trusses, ever-blooming, and very dwarf in habit; it is in every way an improvement on Mignonette, from which it is a seedling.

GOLDEN FAIRY (Bennett).—Buff-yellow, a decided acquisition, quite distinct from Perle d'Or, and of better and more compact habit.

LITTLE DOT (Bennett).—A very diminutive variety both in habit and flower, but with very perfect little blossoms of a delicate flesh-pink colour.

MINIATURE CHINA.

RED PET (Parker).—A crimson counterpart of White Pet, and a most free and useful addition to miniature Roses, amongst which it is as yet the only genuine crimson. The flowers are produced in large trusses throughout the season, and the variety is very pretty when cultivated in pots.

HYBRID PERPETUALS.

AUGUSTE PERRIN (Veuve Schwartz).—A cherry-red Rose, fine-petalled, and of vigorous erect habit; may be useful, but not of striking character.

BARDOU JOB (Nabonnand).—This may be described as a glorified Rose des Rosomanes. It is a very vigorous grower, and will make a fine pillar or climbing Rose, the large semi-double flowers being produced abundantly in clusters throughout the season. The colour is richer and deeper than in the old Rose des Rosomanes, the petals being bright crimson, heavily shaded, especially in autumn, with dark velvety shades, almost approaching black. It is not easy to see why the raiser should have sent out this Rose as a Tea; it should, however, become the parent of some valuable additions, as besides being possessed of so many good qualities as a garden Rose, it is a most abundant seed-bearer.

CAROLINE D'ARDEN (Dickson).—A very large flower, soft rose in colour, of the Marquise de Castellane type, the plant growing a moderate height, with stiff, erect shoots. This variety is most delightfully fragrant and blooms early, and it has on several occasions been extremely well shown by the raiser.

COLUMBIA.—The Americans really need not have troubled to send us, under a new name, our old friend, Mme. Lacharme, which everybody here knows, although very few people, now that we have *Violette Bouyer*, *Merveille de Lyon*, *Viscountess Folkestone*, &c., need or care to grow it, especially at a cost of 5s. per plant, when it is obtainable anywhere for as many pence. *Columbia* was sent out as a pure white sport from *Comtesse de Serenye*. Possibly in potting up a large batch of this Rose, a plant of Mme. Lacharme may have been accidentally included, and, if so, becoming naturally conspicuous when flowering, have been thought to be a sport; but it argues a great ignorance of varieties in America, or great carelessness somewhere, that a Rose which has been in general cultivation for so many years that it is already surpassed in its colour, and is being annually less grown, should be distributed as a novelty at a high price not only in America, but in Europe. Rose growers will become very shy of these American so-called new Roses if their distributors do not exercise a little more discretion in sending them out. Of all the American quasi-novelties in Roses that have reached this country of late years, only two have proved to be really new and distinct, namely, *The Bride* and *Sunset*.

DUCHESS OF ALBANY (William Paul).—This Rose is quite distinct in colour from *La France*, which in every other respect it exactly resembles. It has all its parent's good qualities of habit, freedom, size, form, fragrance, but, unfortunately, its colour emphasises just those shades which many of the warmest admirers of *La France* would gladly see eliminated therefrom, namely, the pur-

plish and lilac tints. If we could get a sport from *La France* strengthening its brighter colour—a *La France* the colour of *Marie Finger*, for instance—it would be a great gain, but there is always a danger in getting a colour deeper, of making it duller, which is not desirable.

DUCHESS OF LEEDS (Mack.).—This Rose has one merit in its great freedom of bloom. Beyond this, however, its value is not obvious. Its colour is not attractive, and its lack of size, form, and quality in any stage of the flower will not conduce to its popularity. The metallic rose shade of the flowers recalls that of *Baron Gonella*, which, if the colour is wanted, is, though not so free, a better flower, in spite of having been sent out thirty years ago.

GERMAINE CAILOT (Pernet fils—Ducher).—A beautiful flesh-coloured flower, large and of fine form, and quite distinct, but of dwarf habit. If vigorous enough, a decided acquisition.

GLOIRE DE MARGOTTIN (Margottin).—A very brilliant red Rose of most vigorous habit, and likely to make a fine pillar Rose. The flowers are large, full, and well formed, but the petals are hardly substantial enough to stand the hot sun of early summer. Late in the season, however, or in wet weather, the flowers last well enough, and may be successfully exhibited. This variety is the best of all red Roses for forcing in pots, and the colour is most brilliant even when grown under glass.

LADY ALICE (Paul and Son).—This pale variety of Lady Mary Fitzwilliam is very pretty when at its palest, and a superb box of it, perfectly in character, was exhibited at the Crystal Palace on the 6th of July. But the intermediate shades between a pale Lady Alice and a deep-coloured Lady Mary are so numerous, that it is to be feared it will prove hardly possible to keep the two apart.

MME. ANDRE DURON (Bonnaire).—Described by the raiser as a Hybrid Tea, but in appearance a poor replica of Sir Joseph Paxton, and one of the Roses to be avoided.

MME. CESAR BRUNIER (Bernaix).—A light Rose, something in the way of *Abel Grand*, and which may be useful. It is vigorous, free, and perpetual, with large, well-formed flowers, but with Mme. Gabriel Luizet to surpass, it is difficult to say how far it is wanted.

MME. GEORGES BRUANT (Bruant).—This Hybrid rugosa is a pretty garden Rose, most free and ever-blooming, and delightfully fragrant. Being pure white and semi-double, it is not likely ever to be valuable as a market Rose in the cut state, owing to the roughness or lack of finish of the exterior of the buds.

MONS. CHEVALLIER (Pernet père).—A cherry-red Rose, with fine petals and the habit of *Alfred Colomb*, which will be worth trying another season.

QUEEN OF AUTUMN (Paul and Son).—As its name implies, a free autumnal and a very fragrant round red Rose. In the early summer it has often a suggestion of a hollow centre or eye, after the fashion of *Annie Wood*, but in the cooler weather later in the year this becomes less apparent.

SCIPION COCHET (Eug. Verdier).—Probably the best French Hybrid Perpetual of the season. Vigorous, free-blooming, the flowers of good size, quite distinct and magnificent in colour, which is a rich velvety crimson shaded with dark blackish maroon, this variety makes an addition to a class that is always welcome, and in which a few reliable varieties are especially wanted by exhibitors.

SIR ROWLAND HILL (Mack.).—This fine Rose has proved deserving of the many good things that have been said of it. Of Charles Lefebvre race, the flowers are carried erect upon the stout, handsomely-foliaged shoots, and the great substance of their petals renders them especially enduring. The colour recalls that of the still charming *Souvenir du Dr. Jamain*, and may be best described as plum colour, and from its pleasing shade and its distinctness the variety is certain to become popular and to enjoy the wide cultivation that it deserves.

SOPHIE STERN (Lévéque).—This variety makes gigantic growth, rivaling that of Mme. Isaac Pereire, but it is evidently not very perpetual, as it

shows little sign of bloom as a maiden. The plant, however, is so handsome, that should the flower prove showy it will make a fine pillar Rose.

SUZANNE CHAVAGNON (Gonod).—Another vigorous, but not very free-blooming variety as a maiden, and apparently of *Baroness Rothschild* race; but the colour and habit are good, and will make the variety worth trying again another season.

Four good Roses.—Roses as cut flowers are always acceptable, and admired by everyone. For this purpose a very large quantity is grown in most gardens. My experience this season is that *Gloire de Dijon*, *Homère*, *Narcisse* and *Devoniensis* have given more blooms than any other kinds in the open air. *Gloire de Dijon* is growing in different aspects on walls, as standards, and also planted against the end of a glass house, and I get good blooms from the plants in all the positions. Some standards growing here gave but little flower the first blooming, but the plants made strong growth. These standards are growing in a long flower border and many would have shortened these shoots back for appearance sake, but this I object to in summer, and left them the whole length, and I have been well rewarded, as every eye broke and produced one or more flowers. I counted the number of Roses on several shoots and found they had each from twenty to thirty good blooms. Many of these blooms would compare favourably with those of *Maréchal Niel*. These have been most serviceable, as I could cut from fifty to 100 blossoms in a morning from them. At the present time (October 4) there are still many good blooms. I had never tried leaving these summer shoots the entire length before, and am so pleased with the results, that I would advise everyone to let the shoots remain regardless of appearance. The same remarks apply to *Homère*, but in a less degree. It, too, has given us a grand lot of flowers from standards as well as from plants against walls. It is hardy, free-growing, and flowers very freely. It is more adapted for the open air than under glass. Under glass the flowers lack that lovely tint which is seen when grown in the open. *Narcisse* planted against a south wall has scarcely ever been out of bloom since April. It is still covered with bloom, and will yet flower for some time if the weather continues mild. *Devoniensis* thrives well here as a dwarf against the foot of a low wall, and throws up strong shoots, all of which flower freely. The climbing form of this does well against walls, and continues flowering till late in the autumn. If I were asked to name the next two best kinds, I should say *Cloth of Gold* and *Souvenir de la Malmaison*.—DORSET.

SHORT NOTES.—ROSES.

Sombreuil is a pretty garden Rose, hardy, vigorous, and free flowering, with large, loose, globular, double white blooms, faintly suffused with delicate pink, which gives a little colour and constitutes a charming flower.

Mme. Joseph Godier is an 1887 Rose of good promise, as it blooms very freely, the suffusion of several shades of rose upon a yellow ground constituting a charming flower. The flower is of medium size.

Charles de Legrady is a vigorous and exceedingly free-flowering Tea. It makes a handsome bush, as the strong shoots are densely clothed with glossy foliage and terminated by clusters of large, long flowers of a distinct rosy carmine hue, which fades to a silvery tinge towards the edges of the petals.

Jeanne Abel.—This is one of Guillot's 1882 varieties. It has been flowering abundantly all the season, and proves to be good in every way. It has a large loose globular flower like that of *Souvenir d'un Ami*, and is very sweetly scented. The colour of the flower externally is a tender rose suffused with white, but brighter in the centre.

Perle de Lyon is one of the best yellow-flowered Teas. Though of a different shade of yellow, it is as vigorous, hardy, and free as that fine kind *Perle des Jardins*; in fact, the quantity of beautiful buds and perfect flowers borne upon one bush is quite amazing, whilst a group is very effective. The flowers are of

fine form, double, of a pale yellow externally, but gradually deepening in colour towards the centre of the flower, which assumes an apricot hue.

Dr. Grill is a comparatively new and as yet little known Tea Rose, but it should become popular. It is of vigorous growth, free and branching in habit, and flowers very freely. The flowers are large and open, but full, and of a rich copper-yellow, internally suffused with salmon, the reverse of the petals tinted with rose.

Mme. Chauvry, one of the 1886 Roses, is a fine kind. In its vigour, habit, beautiful colour alike of wood and foliage, and in the marked absence of thorns it much resembles Mme. Berard. It has a full globular flower of good form and colour, which is deep yellow tinged with rose. It will make a good climber, and prove a valuable addition to that increasing class of fine Roses known as Dijon Teas.

Sunset has been bearing enormous, but well formed blooms all through the autumn. It is said to be a deep-coloured sport from *Perle des Jardins*, but in addition to the distinct colour it has greater vigour, and makes a strong bush. The buds are large and beautiful, and they gradually open into flowers of great substance and of a deep orange or saffron-yellow colour.

Papa Gontier is a favourite Rose with the Americans, the flowers being in great demand for button-holes. It is only semi-double when fully expanded, but its value consists in its long, large bud, which is of fine form and distinct colour, being bright rose shaded with carmine and crimson. It is a Tea, but so much does the growth, form, and colour of the flower resemble those of a Monthly, that it might really be classed as a very fine one and grown with them. I have only seen this Rose in one garden, but it is worthy of more extended cultivation.—A. H.

Emilie Dupuy is a charming Rose, with the vigour and glossy foliage of a *Gloire de Dijon*, but with a flower of a characteristic form, differing from all of that race. In colour it is a fawn-yellow suffused with salmon, but the flowers, which are full and very double, open well, and a perfect, fully expanded bloom has the outer ray of petals spread out somewhat like the guard petals of a Hollyhock, forming a little saucer to the body of the flower. Anyone buying Roses in the coming season should obtain this one and give it a good position on the wall.

Three French Tea Roses not mentioned in English catalogues are *Amabilis*, *Rivoli*, *Charles*, and *Vallée de Chamonix*. From what I have observed of them growing and flowering among others in a large private collection they are all worthy of cultivation. *Amabilis* forms a dense bush, has glossy foliage, and produces its rosy flowers freely. *Rivoli* Charles has a delicate beauty of its own. The erect shoots bear flowers which are externally of the tenderest rose colour, whilst a warm shade of rose brightens up the centre of the flower. *Vallée de Chamonix* is a dwarf-growing kind, the flowers being of medium size, with large shell-like petals which are pale yellow externally, but internally of a bright shade of copper-yellow, which imparts quite a glow to the flower.—H.

Red Tea Roses.—Hitherto the light and pale, but delicate colours have characterised the Tea Roses, whilst the deeper and more pronounced colours in all their varied shades have been found among the Hybrid Perpetuals. But there are now true Teas with flowers of a bright crimson-red hue, and which are borne as profusely as are those upon the old light-coloured kinds. *Souvenir de Thérèse Levat* is a rich crimson-red, hardy, vigorous and free. It makes a good bush, and the pretty buds are so plentiful that great quantities can be cut. *Souvenir de David d'Angers* is another of this class. It is a free and beautiful kind, but is hardly ever seen, and the name only appears in French lists. I saw a group recently of little bushes upon their own roots, and they were smothered with blossoms, for every little twig bears its flower, which is of medium size and of a bright crimson colour. *Princesse de Sagan* is the latest addition to the class, and it proves a distinct and meritorious kind. It is of vigorous growth, free flowering; the flowers are full, of a bright crimson hue, which is overlaid externally with a maroon-crimson shade,

which gives the flower a soft velvet-like appearance. In some of the bright-coloured Teas there appears a dingy lilac-purple shade, as in *Madame Cusin*, which is not pretty, but objectionable. No trace of this tint, however, appears in any of the three kinds mentioned.—A.

NOTES OF THE WEEK.

Chrysanthemums in the parks.—There are good displays of Chrysanthemums in Finsbury and Southwark Parks, both now open to the public, Sundays included. The Inner Temple show will not be opened until November 18.

Rouen Violet (*Viola rothomagensis*) has been in bloom since spring on the Broxbourne rockery, and nothing but frosts will stop the display. It is a lovely hardy Violet, very little seen, yet one of the best. A warm, light soil suits it well.

Orchid Nomenclature Committee.—It is proposed that the first meeting be held in the Lindley Library, Royal Horticultural Society, 117, Victoria Street, on Tuesday, October 29, at 2 p.m. Gentlemen having suggestions to make for the consideration of the committee are requested to communicate with Dr. Masters, *Gardeners' Chronicle* office.

A fine mixture.—One of the prettiest autumn beds at Kew this season is composed of the blue *Agathæa celestis* mixed with white *Viola Snowflake*, with an edging of *Echeveria secunda glauca*. The *Agathæa* and *Violas* are of about equal height, and the whole bed has been for some time a pretty combination of pale blue and white.

Calanthe vestita rubro-oculata.—This is a charming autumn flowering *Calanthe*, and we were reminded of its value by a number of specimens in full bloom in the garden of Broxbournebury, Broxbourne, the residence of Mr. H. J. S. Bosanquet. The flowers are each about 2 inches across, white, with a central blotch of rich crimson.

Stephanotis in fruit.—I send you a sketch I have just made of the fruit of the *Stephanotis*, which I fancy is rather uncommon. The plant is in the garden of Mr. R. Sewell, Claybury, Chigwell. It has bloomed pretty continuously since the month of April. The fruit is from an early blossom, and at present the colour is green, a little lighter than the leaf.—G. R. CLARKE

Irish Daffodils.—The Irish Daffodils Countess of Desmond, Silver Bar, and Robert Boyle, referred to by Mr. Engleheart (*GARDEN*, page 246) and by Mr. Hartland (page 325), were by me placed before the Daffodil committee along with others. The bulbs I received from Miss Currie a few years ago. In placing these Daffodils before the committee I was paying Mr. Hartland a very great compliment, as I did what he omitted to do.—P. BARR.

Carnation W. M. Welsh.—We have much pleasure in sending you a few late blooms of our new border (or cutting) *Carnation W. M. Welsh*. We regret that they are undersized owing to the lateness of the season. We send you a few sprays as well to show you what a free bloomer it is.—MESSRS. DICKSONS AND CO., Edinburgh.

* * A very free-flowering variety with rich red flowers.—ED.

Allamandas.—If "R. D." (p. 324) will refer to *THE GARDEN* (Vol. XXIX., p. 400) he will find there an article on *Allamandas*, in which the points he raises and the questions he asks are dealt with. A *violacea* is referred to by "G." on p. 324 as being "a very shy bloomer." The plants at Kew, though small, are flowering freely under precisely the same treatment as is commonly adopted for the yellow-flowered kinds. We hope to publish a coloured plate and the history of this interesting plant.

Erigeron mucronatum.—There is no more valuable flower for border or rockery at this season of the year than this. It has been a mass of bloom since early summer, and though the flowers resemble those of the common Daisy, they are so delicately tinted and shaded with pink, and withal so numerous as to make a very interesting and beautiful group. The seeds which dropped from the early summer flowers have germinated, and formed quite a colony round the mother plant. It has also been called *Vittadenia triloba*, and is perfectly hardy, requiring a rich free soil.

Jambosa australis.—This interesting plant was shown at the meeting of the Royal Horticultural Society, on Tuesday last, by Mr. G. Wythes,

Syon House Gardens, Isleworth. It is now included under *Eugenia*, and belongs to the *Myrtaceæ*; in fact, the whole character of the plant is like that of a *Myrtle*. The flowers are creamy-white like those of a *Myrtle*, and borne with the small shining crimson fruits. To keep the plants dwarf they should be stood close to the glass, and during the summer placed in the open.

Clematis orientalis var. graveolens is just now very beautiful. When allowed to grow untrimmed, as our practice is, it forms a most graceful plant, with long branches covered with the most picturesque bunches of seeds. It is one of the most useful for arbours, and in gardens where rockeries are on a grand scale few plants will be found more suitable than the above. It prefers a calcareous medium, but grows well, and flowers and fruits freely in common garden soil, the surface of which should be mulched once a year in order to encourage a vigorous growth. The flowers are rather small, of a dull yellow-green, but the seed-bunches have been beautiful beyond description for the past two months.—K.

The Tickseed family (*Coreopsis*) contains several important garden plants, and none more so than the perennial *C. lanceolata* and its near ally *C. auriculata*, which under cultivation seems to lose the auriculate leaves and approaches more nearly to *C. lanceolata*. *C. grandiflora* is said to be the best of the lot, but we have tried in vain to procure it, having invariably received *C. lanceolata*, which seems the most common of the perennial kinds. *C. tenuifolia* and *C. verticillata* are very pretty plants, but somewhat delicate and requiring a little care to manage them properly. We have lost sight of *C. rosea*, a charming dwarf and fairly hardy species with soft rose-coloured flowers.

Peach Sea Eagle.—I do not like this Peach. It is undoubtedly late in ripening—the latest of all, but that is its only recommendation, as although it is very showy it is always deficient in flavour. I send you a specimen from a tree on an east wall. It is bearing dozens of the same stamp. It is altogether a mistake to plant very late Peaches in the open, as they invariably are of inferior quality. In my opinion none to ripen later than *Barrington* should be planted in the open. *Alexandra* is the finest flavoured of our earliest Peaches, and while in Scotland lately I heard the most flattering and reliable testimonials as to *Early Silver* being a good one.—J. MUIR, *Margam, South Wales*.

Peach Comet.—This Peach appears to be little known judging by the few places in which it is found. It appears to be an enormous cropper and a strong grower, judging by some trees I saw recently in the gardens at Dillington Park, Ilminster, Somerset. One tree covered a piece of wall from 18 feet to 20 feet long. The tree was bearing equally all over splendid large highly-coloured fruit just ripe at the time of my visit at the end of September. Mr. Brooks, the gardener, thinks highly of this Peach, and told me he had two trees of it, and had ordered more, remarking he had never seen it affected with blister or blight, nor fail to bear a crop. He considered *Comet* the best late Peach. Mr. Brooks informed me that he had had a splendid crop this summer, and the trees promise well for another season.—J. C. F.

A new Begonia.—I send you herewith the first male flower of *Begonia hybrida octopetala-Lemoinei* "*Fleur d'Automne*," the first of three varieties of this most interesting race of new hybrid *Begonias* raised by M. Lemoine, of Nancy, and sent out for the first time this summer. Your readers will have already been made acquainted, at all events, with the name and general appearance of these hybrids by means of a woodcut of one of them (*THE GARDEN* of February 9, 1889, p. 125), reproduced from a photograph furnished by their raiser, M. Lemoine, and accompanied by a note from him. My plant, so far, exactly corresponds with the description there given, save that the flower which I send is quite 4 inches across; whereas in the description 3 inches is given as its ordinary size. The first flower opened about September 26, and was at first

rather of a pale and washy colour, but this greatly improved and deepened as the flower matured, till it is now, as you will see, of a fine clear deep rose colour. It opens quite flat during the first half of the day while the sun shines upon it, but about 2 p.m. it almost shuts itself up till next morning. The flower-stem is just 1 foot in height, and the foot-stalk of the centre or main flower is 4 inches more. On each side of the base of this foot-stalk rise two lateral stems, one of them bearing six flower-buds, the other two, so the spike altogether shows nine flowers. How many of these will be female flowers I cannot yet say. My plant shows as yet four more spikes in various stages of development, so that as the tuber was by no means a large one, it may fairly be said to be free-flowering. The names of the other varieties sent out at same time are *Anemone*, with large pure white flowers with yellow stamens in the centre, and *Ville de Nancy*, with brilliant magenta-coloured flowers. This last seems much the strongest grower of the three and already has numerous large leaves, but as yet shows no sign of flowers. The variety *Anemone* did not start into growth till at least a fortnight after the one now in flower, and seems of a considerably less vigorous habit of growth. When these varieties come into flower I hope to send you a farther note about them.—W. E. GUMBLETON.

Saxifraga Fortunei.—This lovely species is now in flower in the open air, though, unfortunately, not a very reliable plant, as it is liable to be destroyed by the early autumn frosts, and the entire efforts of a year blighted in a single night. Although we still have a plant in the open air, we prefer keeping the stock in a cold frame where we can protect in case of need, and where we are sure of the flowers opening. *S. Fortunei* produces large panicles of pretty white flowers, which produce a very charming effect in late autumn. It would make a very desirable addition to the list of cool greenhouse plants, and as it requires no particular care either before or after flowering, it may be successfully managed by anyone. *S. cortusæfolia* is also a desirable addition to the known *Saxifragæ*, and though not so ornamental as *S. Fortunei*, it is distinct enough and may be grown for the same purpose.

Dendrobium Phalænopsis.—The majority of the *Dendrobiums* which are natives of Australia and New Guinea are well known to be amongst the most difficult to keep in health for any length of time after importation. They come from one of the sunniest regions of the globe, and in no other group of Orchids is the baneful effect of our fogs and sunless skies more apparent. The species under notice, however, fortunately proves to be an exception; it is easy to cultivate and free-flowering, which is all the more satisfactory, as it is assuredly one of the most beautiful of all *Dendrobiums*. It flowers during the autumn, bearing a raceme of six to ten flowers at the top of the current season's growth. The sepals and petals are rosy lilac with darker coloured veins, and the lip is deep maroon towards the base, paler towards the front. A plant which was sent some years ago from Timor, an island lying several hundreds of miles west of Australia, but possessing, according to Dr. Wallace, a climate identical with that of Northern Australia, where this *Dendrobium* is also found, is now flowering at Kew. It must have a position in the lightest part of the stove, and must be kept very moist when growing. After flowering it should be rested by withholding water, not removing it to a cooler position, as is usual with most *Dendrobiums*. It was introduced in 1880, and still remains a rare species.

Cyclamen hederæfolium.—Now that the beautiful leaves of the above have appeared amongst the pretty rose-coloured flowers, the effect is very fine. It seems strange that this plant (by no means scarce) is not oftener met with in collections. It is perfectly hardy, requiring a somewhat shady spot next to or under trees, a free soil, and to be left alone. The soil should be made as free as possible, and this may be done with a good admixture of old lime rubble broken up in pieces the size of marbles, and well mixed with the soil.

These *Cyclamens* should never be planted deep; many of the failures we hear of may be accounted for in this way. The corms should simply be laid on the surface and gently pushed into the soil, never more than half burying them. They seed freely, and if the ground be kept clear from weeds, seedlings will spring up freely and in a very short time form a fine new colony. *C. græcum* is a very near ally, and at the most no more than a variety of *C. hederæfolium*, which, I believe, is now called *C. neapolitanum*.—K.

Solanum pensile.—This is a pretty flowered climber for the warm greenhouse or stove. It has been introduced to Kew from Demerara, and it is now flowering freely in the Begonia house. The leaves are lanceolate, dark green, each 2 inches to 4 inches long; the shoots are twining, and the flowers, in large, loose, terminal, pendent racemes, measure a foot across and about the same in length. Each flower is an inch across and of a deep blue-purple colour with a yellow eye. Flowering in late autumn, too, this species should prove a really valuable garden plant. There are three good climbing species of *Solanum* in gardens now, viz., *S. Wendlandi*, recently noted as flowering at Kew; *S. jasminoides*, an elegant little greenhouse plant, now fairly common in gardens; and the above. Unless we are very much mistaken, *S. pensile* will prove to be the best of the three.

Greenhouse Palms.—Some interesting experiments are being made with Palms at Kew, a considerable number of species which hitherto have been considered peculiarly tropical in their requirements having been placed in the large winter garden, where it is anticipated they will be happier than when in the stove. In addition to *Jubæa spectabilis*, *Livistona sinensis*, *Corypha australis*, *Areca sapida*, *Phoenix dactylifera* and several species of *Chamærops*, all of which are known to be useful greenhouse Palms, we noticed the following in the winter garden at Kew, viz., *Glaziova insignis*, *Caryota sobolifera*, *C. furfuracea*, *Washingtonia filifera*, *W. robusta*, *Corypha inermis* (*C. decora*), *Brabea Roezli*, *Cocos flexuosa*, *Sabal umbraculifera*, *S. Palmetto*, *Phoenix reclinata*, and *P. spinosa*. These are all represented by strong plants in the best of health, and most of them have already been in the house long enough to prove that the winter temperature of this house (a minimum of 35°) is not too cold for them.

Hardy Cyclamens.—The Ivy-leaved *C. hederæfolium* is one of the prettiest of autumn flowers, and it should be in all good gardens. The finest display of it we have seen this season was recently in the Broxbourne Nursery, where there are large clumps many years old, and densely covered with flowers. Self-sown seedlings are springing up everywhere, showing how easily grown and hardy this *Cyclamen* is. The great secret in *Cyclamen* culture is to sow the seed as soon as ripe, but usually it is kept through the winter and sown in spring, the result being that very few germinate. From a mass of plants as here, and by reason of a number of forms having been raised on the place, there is a great diversity in both leaves and flowers. Some of the leaves are distinctly arrow-shaped, others marked and mottled with rich silvery grey tints. The flowers offer the same variety; some are white, others tinted with rose, and a few almost as large as those of *C. persicum*. When *C. hederæfolium* is over, then comes the hardy coum, another beautiful Sowbread. *C. africanum* is tender in the open; not so *hederæfolium* and coum.

Pereskia aculeata.—The flowers of this plant are beautiful. Probably most readers of THE GARDEN know the plant well enough, but never heard of, much less saw it in flower. Scarcely anyone thinks of growing it, except as a stock upon which to graft *Epiphyllums*. But at Kew this and several other species of *Pereskia* are represented by large old specimens trained against the roof of the succulent house. *P. Bleo*, the most robust in stem and foliage, flowers at Kew every year, but *P. aculeata* is much shyer. A day or two ago we saw a raceme of flowers upon it (there are

more to follow), and we were charmed with their distinctness and beauty. They were clustered like a bunch of Dog Roses, and each one measured 2 inches across; the petals were broad, in several rows, some spreading out flat, others slightly incurved, the colour being a transparent white, like glistening ice, tinted with rose; the stamens formed a large tuft, and were deep orange with yellow anthers; the stigma was long-stalked and white.

Pleione lagenaria.—From now up to December *Pleiones* are perhaps the brightest objects in the cool Orchid house; indeed, there are few Orchids which produce a more charming effect than these do when in flower. Of the three or four species commonly grown, the above is the first to open its flowers, and a well-grown batch of it may now be seen at Kew. The somewhat bare appearance resulting from its deciduous habit is counteracted by introducing a few pots of Maiden-hair Fern into the group. The short, flat pseudo-bulbs produce two and three scapes, many of which are twin-flowered. The prevailing colour is a bright lilac-rose, the lip, however, being yellow in the throat and freely blotched with reddish purple on the expanded front lobe. Most of the *Pleiones* are found at considerable elevation on the mountains of Northern India, and have been appropriately named Indian *Crocuses*.

Roscoea purpurea.—Most people who know this plant appear to be surprised on learning that at Kew it has been cultivated out of doors for several years and is quite hardy. It is a native of the Himalayas and grows along with the *Rhododendrons*, *Deodars*, and *Primulas*, but it also finds its way down almost to the Tropics. In like manner it accommodates itself to various conditions when under cultivation, for it may be treated as a stove plant or a greenhouse plant, as well as out of doors, and it is happy enough in all three conditions. It has long fleshy roots, a root-stock not unlike that of Ginger, to which it is related, and stems a foot high with terminal heads of handsome deep purple flowers, each 1½ inches across, and formed like those of *Hedychium* or *Alpinia*. The plant likes plenty of water all the year round, full sunlight and a strong soil. It seeds freely under cultivation. At Kew it is grown in a border where the *Belladonna* grows well and flowers freely.

The Melon Pear (*Solanum guatemalense*) was introduced a year or so ago with a flourish of trumpets as a new dessert fruit, much superior to Tomatoes, almost as good as an Apricot. The name Melon Pear is suggestive of good things, and people were thus induced to buy and try. Several have grown and exhibited its fruit. Some good examples were shown at the Vegetable Conference at Chiswick. The fruit is about the size of a turkey's egg, deep yellow in colour, with a few blotches of green. It is scarcely fit to eat, being very disagreeable in flavour. Pickled or preserved in sugar it might be made palatable, but then the same may be said of Turnips, Pumpkins, and many other such things. There may be the making of a good edible fruit in the Melon Pear, but it will require a good deal of developing and improving ere it is fit to rank with a good Tomato.

Carex japonica.—This is one of the prettiest of small pot plants, and is popular in Covent Garden Market, where it is known as Silvery *Carex*, or Yellow Grass. It is scarcely a foot high, and is closely tufted with very narrow, arching foliage, which is shining green with bright creamy yellow marginal variegation. There is a green form of it, which is also grown for Covent Garden Market, where it finds a ready sale. Covent Garden men do not allow the question of names to bother them much. One of the principal growers of this plant knew it only as a "Grass or *Carex* of some kind which sells well." The ways of the market man are uninfluenced by the name-monger. He goes into all sorts of out-of-the-way gardens, and when he finds something new he takes it home, quietly works up a stock of it, puts it on the market, and probably all the while he is entirely ignorant of its botanical name.

THE GRANGE, HARTLEY WINTNEY.
 ABOUT one mile from Winchfield Station is situated The Grange, the picturesque residence of Mr. Walkinshaw. The house, although not an old one, is pretty, for its dignity is not dwarfed by complex surroundings. It is well shown in the annexed engraving from one of Mr. Mason Good's photographs. In the front of the house is a fair expanse of smooth green turf, occasionally diversified by some noble isolated trees such as the one partly shown in the picture. It is a very fine specimen of the Lebanon Cedar, straight and tall, with branches sweeping the ground and spreading upwards and outwards far and wide. As is often the case, however, with fine Cedars, it has lost many huge branches by the weight of snow that often

and Jasmine upon other parts of the house, all beautiful in their season. The lawn forming the foreground of the picture extends round the Cedar along the end of the house, and forms on the other side the garden front. Flower gardening is not extensive, but what is done is done well, and it is satisfactory to notice that increased attention is being paid to hardy flowers. Near the house was a bed filled with the white Japan Anemone, and in a border close by a mass of the pink kind was beautiful. These two things exemplified the importance of the finer hardy plants, showing to what a good use they might be put. If the summer is on the wane before these fine Anemones begin to open, that should be no drawback to their use in good flower gardening, because it is

thæa cælestis) and the brilliant Cardinal Flower (*Lobelia cardinalis*) were also extensively used, and both were still bright, although an early frost had cut down some of the tenderer things associated with them. Two large beds of Lavender were in the flower garden, but how rarely is this old, sweet-smelling plant put to a good use in gardens. True, after a few years the bushes become leggy, but by a simple system of putting in a few cuttings yearly, a young healthy stock may always be kept on hand to transplant where required.

Upon the lawn are some fine trees, notably a grand Lombardy Poplar, over 100 feet high and quite healthy, and a noble Oak, with a clean, straight trunk of 20 feet before any branches are formed, and girthing about 16 feet. Nice speci-



The Grange, Hartley Wintney, Winchfield. Engraved for THE GARDEN from a photograph by Mason Good.

gathers upon its broad flat surface. This tree is particularly well placed at the end of the house. As the picture shows, great portions of the cold bare walls are hidden by a mantle of beautiful foliage and flowers.

The rampant climber which adds so much to the beauty of the house is a magnificent Virginian Creeper. It covers a great space, and at the present time in its gorgeous autumn dress it is beautiful beyond description. The Virginian Creeper, however, does not monopolise all the space, for to the left of the porch, in the recess formed by that projecting structure, is a large plant of the white Passion Flower *Constance Elliott*, still blooming freely, whilst *Escallonia macrantha*, with glossy leaves and rosy flowers, had been beautiful for months. Then there are Clematises, Roses, Honeysuckle,

not absolutely necessary to have the garden a blaze of colour at one time, and those who love their flowers are always interested in them, and watch their development from the time they spring above ground till they flower and die.

Two beds of Tree Pæonies have recently been planted, and they will soon be interesting features. The summer flower gardening was of a higher order than commonly seen, the Australian Blue Gum (*Eucalyptus globulus*) being boldly used to break the flatness of the arrangements, while its glaucous foliage is a pleasant foil to the brilliant colours. For this purpose it is treated as a biennial, the plants being raised from seed one year and planted out the next, after which, becoming too large for the purpose, they are destroyed. The Blue Marguerite (Aga-

mens of the finer Conifers are now growing on the lawn and about the grounds. *Lilium auratum* among *Rhododendrons* had been very fine; one stem, nearly 8 feet high, had borne twenty-eight flowers. It was not one of those fasciated monstrosities, but a properly-developed stem. The flower was that of the typical form. Mr. Walkinshaw has a son in Japan who sends him the bulbs. Can it be that he has unconsciously obtained a giant form? because even a very strong bulb would not have sent up such a stem as this was.

The conservatory adjoining the house was filled with a fine lot of *Chrysanthemums*; whilst its roof was festooned with white *Lapageria* and the old *Tacsonia Van Volxemi*. *Cassia corymbosa* was also flowering well. A selection of the best kinds of *Michaelmas Daisies* made the back

of a mixed border gay; but gardeners generally do not fully realise the value of these fine autumn flowers, or they would have long since given up the orthodox method of restricting them to single tufts or tufts scattered at regular intervals along the border, with the shoots tied up like a faggot. There are better ways of growing them, and they are worthy of the best. There is a good and well-managed kitchen garden, the heavy crops of open-air Tomatoes being the most noticeable feature in it at the time of my visit. Though not a large place, The Grange has its points of interest, which will increase as the cultivation of fine hardy plants is extended, and it has to rely solely upon these created charms, for the situation being almost as flat as a table, the beauty of landscape, a feature of so many southern gardens, is somewhat lacking here. T. W.

FLOWER GARDEN.

THE GLADIOLUS.

THE old-fashioned Corn Flag used to be a favourite garden plant, and being naturally hardy it did not require much care to preserve it year after year in ordinary garden soil. In Miller's "Gardeners' Dictionary," published in 1733, six species and varieties of Corn Flag are described. A few others, he says, were cultivated in some botanic gardens, but the six he enumerates are those he had observed in English gardens. *G. major byzantinus* was one of the varieties described by Miller. In 1791 *G. cardinalis* flowered in the neighbourhood of London. It had been introduced from Holland, and was supposed to be a native of the Cape. *G. tristis*, the square-leaved Corn Flag, is a distinct and pretty species. This *Gladiolus* is said to bloom as early as April and May, and the flowers give forth an agreeable fragrance. Miller does not mention it in 1733, but it was cultivated in the Chelsea Garden by him in 1745. Numerous species of *Gladioli* were introduced from the Cape and elsewhere early in the century, but no one seems to have hybridised them, except Herbert, who gave an interesting account of his work in the "Amaryllidaceae," but he did not keep such a correct account of the individual crosses as he did in the case of the *Amaryllis*. He stated that a large portion of his crosses were sufficiently hardy, and contributed quite as much to the embellishment of the garden by their fine colours and profusion of blossoms as the Roses. They succeeded quite well in his garden at Spofforth in the natural yellow light loam, and also in the prepared borders of peat and sand. In the peat borders, however, they required rather more water. With the exception of sowing the seeds of his hybrids in pots, Dean Herbert treated his *Gladioli* as quite hardy plants, and his system of culture might be followed by anyone. He merely turned out the pots of seedlings into the borders as they were with the ball unbroken, where they produced a crowded nosegay of flowers of many shades of colour. His hardy crosses were between *G. cardinalis*, *blandus*, *carneus*, *inflatus*, *angustus*, and *tristis*, and varied with every shade of colour from white to scarlet, rose, coppery, and blackish purple, while some were exquisitely speckled in consequence of the cross with *G. tristis*. The clusters of bulbs were left alone for over twenty years without being disturbed, the only precaution taken being to cover them over with leaves from November to March. When it was necessary to take up the bulbs to replant them it was always best to do it in April, as many of them would rot during the winter if they were dug up and replanted in the autumn. The system of culture adopted with the hybrids of *G. gandavensis* is very different; they are later in flower, and though not supposed to be quite hardy, I have found them pass through the winter when left in the ground accidentally, and to flower quite as well as those taken up in October, dried and replanted again in February or March. The hybrids of *G. gandavensis* like a rich light yellow

loam, deeply dug, and well drained. Stagnant water is most injurious to the roots, and when these are destroyed by it the bulbs themselves suffer. Even when all precautions are taken, however, the destruction of choice and expensive bulbs is very annoying to the cultivator. I well remember when I first began to cultivate these plants. When intending to exhibit them, I was daily watching the development of the spikes, when first one and then another of the best of them would cease growing, flag in the sun, and ultimately die outright. I watered a good deal and mulched the roots with decayed manure, and I fancy water and rich manure together caused decay of the fibrous roots, as the corms had no disease. I fancy we were too near London, as they also degenerated in a few years, probably from the impure atmosphere. The foliage of seedlings and imported bulbs was of a rich deep green, but this in time, say three years, changed to a decidedly yellow-green, the spikes became short and the flowers of inferior quality. I always worked the ground well and applied good dressings of manure. Seedlings are easily raised. The seeds should be saved from parents that possess a vigorous constitution. As to the flowers themselves, some would put colour before form; others would reverse this. The most effective spikes are those having the flowers facing one way, and if bright, decided, and effective colours can be obtained in the same varieties, the cultivator is well repaid for his pleasant, though sometimes arduous labours. A great work has been accomplished both by English and French cultivators in improving what are termed hybrids of *G. gandavensis*. The earlier flowering sections if taken up by some enthusiastic cultivator, who might have patience to hybridise the flowers and cultivate them well, would give us quite a new feature in the early summer months. There is material to work upon in such beautiful species and garden varieties as *G. cardinalis*, *Colvilli* and *Colvilli The Bride*, a most beautiful pure white form, extensively grown to produce flowers in April and May by forcing it in pots. *G. delicatissimus* is also early and has very beautiful white flowers with crimson flakes or feathering. *G. insignis* is a distinct, free-flowering, deep red variety. La Ville de Versailles has white flowers marked with rosy red. There is plenty of room for crossing and intercrossing amongst the above, and valuable results may be predicted if the soil and climate are suitable.

Gladioli have been exhibited in capital condition at the Crystal Palace and also at Newcastle-upon-Tyne this year. The spikes exhibited at Newcastle-upon-Tyne were the finest I have seen this year. I counted fourteen open flowers on one spike. Evidently the *Gladiolus* can be as well grown in the wet, cold districts of Scotland and England as it can in the drier, warmer counties of Kent, Cambridge, and Somerset.

J. DOUGLAS.

Planting Clematises.—I often hear complaints made of Clematises dying, and in many cases I believe that the failure is due to planting at the wrong season. If plants are put out at the present time the chances are that many of the fleshy roots rot during the winter. Most hardy plants make new roots before winter arrives if planted in October, but Clematises appear to be an exception. The best time I find is at the end of March, just as the young shoots are beginning to show. I have rarely had a failure at that time, but when planted in the autumn I have observed that many of the plants died.—J. C. B.

Geranium nepalense.—I see a note by Mr. J. Wood on *Geranium Wallichianum* in THE GARDEN, September 21 (p. 267). About nine years ago the late Mr. J. Sidebotham, of Bowdon, gave me a very small piece labelled *Geranium nepalense*. He described it as the most lovely perennial he had ever seen. I planted the above in ordinary soil among other perennials, and though very unhealthy, an immense number of flowers was produced almost up to Christmas. The following spring some young growth appeared, but the plant soon disappeared altogether. Mr. Sidebotham then gave me a seedling, which did no good at all, and

meantime his own plants also died. Soon afterwards a seedling appeared at the edge of the path, quite 10 yards from where the original plant stood. This grew vigorously, and I saved a quantity of seed. In 1887 and 1888 this seedling, planted on a rocky about 4 feet above the level, measured fully 5 feet in diameter, and was covered with lovely blue flowers from the end of June to October. The best aspect seems to be west or north-west with plenty of broken stone mixed with the soil and a liberal supply of water during June and July.—E. C. BUXTON, *Ivy Cottage, Knutsford*.

NOTES ON HARDY PLANTS.

Tropæolum speciosum.—This fine climber naturally grows in favour as it becomes known, and, what is more important, its culture is being better understood on this side of the Tweed. I have lately seen it in many places where formerly it was believed to be impossible to grow it. On the dry subsoil of Reading I lately saw it doing well. When well established it is difficult to kill, for its semi-tuberous roots go down to a depth of 2 ft. or more where there is soil. Much, however, as its sheets of fiery scarlet flowers may be admired, very strong plants in rich vegetable soil are capable of yielding other and more lasting charms. The way in which the fruits, about as big as a medium-sized Pea, are borne in threes in the throat of the persistent flower, present the plant in quite another character. These fruits are green, then white, slate, sky-blue and shrivel when purple. All these hues come over the same fruits in the order named, and on a large specimen they are innumerable and represent all the colours at the same time as well as the rich scarlet of the late flowers and dull red of older ones. Attractive as the early flowers may be, there can be no doubt that the later, or fruiting period is more so, and certainly the plant is more interesting. I believe that seedlings will be more likely to make a vigorous start than the broken roots, and I am sure if we were to prepare the soil to a good depth we should have fewer failures.

Gaultherias.—There is an all-the-year-round usefulness about all the species that are in general cultivation, and also a characteristic neatness, so that one might fairly expect to see them more grown. I believe an impression prevails that they are somewhat like Heaths and not readily accommodated; hence many never attempt their culture. As a matter of fact, they are grown here without a morsel of peat, and I am very near a large forge. Leaf-mould and turfy loam will do well, and a few big stones half buried here and there will be helpful. The common *G. Shallon* is now loaded with its racemes of Black Currant-like berries. I have been told they are edible and make a rich jam. Has anyone tried them in this way? *G. procumbens* is always highly decorative, the leaves, flowers, and berries being all pretty. Often the plants have all these features at the same time. *G. nummulariaefolia* is not quite so hardy, but with a little protection it will hold its own in winter and make rapid summer growth. I have grown out of doors for two years a minute Indian species; its berries are of great beauty, of a clear sky-blue, or somewhat resembling the colour of the flowers of *Delphinium Belladonna*. Another (*carnea*) produces freely its flesh-coloured blossoms.

Leucojum hyemale.—From newly imported bulbs during summer there is now a lovely crop of blossom. No doubt these flowers would have been later, in accordance with the specific name of the species, had the bulbs been acclimatised. This is one of the sweetest gems imaginable, and should be largely cultivated. My experience of it does not depend on the present batch. The plant is hardy enough, but in order to enjoy the flowers and keep them clean, the pots should be stood in a cold frame, and as this would take place in winter, the pots ought to remain in the frame until spring, so that practically it is not a subject for the open garden. It is worth all the care a winter flower can be worth; if anything can excel a pot of Snowdrops in winter, surely this does.

Aster acris.—I am glad somebody has been

giving this a good word. I consider it one of the most distinct and useful of its large genus. The same plant will begin to flower in August, and go on till the end of October. If the roots are kept well divided and given fresh soil every spring, the stems carry an enormous mass of satiny mauve heads. The plant, too, is a convenient height—2 feet to 3 feet. It is a grand bedder or line plant. I believe, also, it is one of the Asters about whose identity authorities are fairly agreed, and one which when once seen will easily be recognised again.

Clematis.—Among the late-flowering kinds for out of doors Jackmani is doubtless unmatched, but I may mention as a beautiful companion rubella, and Victoria should not be passed by. They are both of a lively hue of reddish purple, and when their flowers are seen in masses cannot fail to win admiration. We still want a free-flowering pure white kind. According to my experience, the so-called white Jackmani comes far short of these qualities, and indeed, I may say, on good authority, that no such thing as a white Jackmani exists as yet in the trade, or rather if it does, it has never yet been offered. The one at present wrongly bearing the name belongs to another section. I have no intention to argue on the subject. I merely throw out these hints for the purpose of possibly inducing those who possess plants to closely examine their sectional features, and then judge for themselves as to identity.

Helianthus orgyalis is one of the most stately herbaceous plants I know. Imagine a *Lilium auratum* stem from 6 feet to 7 feet high, with leaves in double quantity and length, and you have the picture of this *Helianthus* before it flowers. True, the flowers are small and scarcely enhance the beauty of the plant, but it does not need them to be an eligible garden ornament, and certainly we can spare the heads of one yellow composite in the autumn.

Pampas Grass grows best in this climate and flowers earlier in well-drained and light, but rich soil, though a swamp plant. At any rate, this is my experience of it, and I have grown it for many years, and at present have large specimens in flower. I know many have failed to establish it in damp places, and still more fail to flower it before the frosts come, even in the earlier climate of the south. I attribute the want of success in both these respects to planting in damp positions. This is not the only hardy exotic plant coming from a swampy habitat that shows a preference for dry ground when under cultivation in our damp climate.

Antirrhinum Asarina.—This is very ornamental all through the summer and till cut down by frosts. It requires plenty of space to send forth its long shoots, which, from the way the grey and downy leaves are disposed, suggest a thick grey snake. I have had stems 9 feet in one direction, and others as long going in the opposite direction; these give the plant, though but a creeper, an imposing appearance. The flowers are yellowish white, and in form and size they resemble those of the ordinary Snapdragon. I believe the plant is rather scarce. Several years ago I discontinued its culture as being too large for my space; this year I cleared and dressed the ground where it used to grow and seedlings have appeared. The seeds must have been dormant for at least five years.

Two fine blue October flowers.—How little one hears now of *Veronica longifolia subsessilis*, and who can tell us of a better blue flower for this month than *Aconitum japonicum*? These two stand out conspicuously as first-rate blue-coloured flowers, all too scarce at this season.

Woodville, Kirkstall.

J. WOOD.

Pyrethrum uliginosum.—My own experience in raising plants of this hardy flower from seed corroborates "W. W." in believing that the blooms vary in size on plants so raised. Some have produced very fine flowers, some of very moderate dimensions, but so far I have reason to believe that if seed be saved from the finest blooms the product will generally be fine also. But even on old plants

there is a disposition on the part of the flowers to come rather small when too long established in one place, as the soil becomes poor and the growths far too thick and leggy. Cuttings in the form of the tops of the leading shoots taken off in June will give plants 2 feet in height, carrying very fine blooms in the autumn. This *Pyrethrum* requires occasional transplanting and dividing, also frequent propagation by cuttings to keep the flowers in their finest form and the plants of moderate height.—A. D.

THE DAHLIA.

THE introduction of the Dahlia into England, the hundredth anniversary of which is being celebrated after the customary fashion by various exhibitions of its choicer varieties, although not an event of the first importance, is probably quite as well entitled to centennial honours as many others about which more noise is likely to be made. There is some doubt as to the exact date when the plant which Linnæus named after his pupil, Dr. Andreas Dahl, first reached Europe 100 years ago, for it must have been fairly established in Spain before the Marchioness of Bute brought the first specimen to England from that country in the year 1789. This form is believed to have been Cervantei, which keeps alive the name of Vicenzo Cervantes, who is usually credited with its discovery in the uplands of Mexico, and its introduction thence into Europe. Now and then, simple-minded tourists buy bulbs which the "Howadjii" is assured, on the beard of the Prophet, were taken out of a mummy-case. But as these valuable antiquities are invariably double-flowered varieties of the Dahlia, which could not well have reached Egypt prior to the era of Columbus, the inference is that, like the apocryphal wheat, the roots have been stolen from the nearest garden in preparation for the tourist season. For the one fact about which there can be no doubt is, that the flower is Mexican. To this day it grows plentifully in sandy meadows 5000 feet above the sea, and, therefore, in a comparatively cool region. The traveller who sees it for the first time might have some difficulty in detecting the familiar garden flower in the simplicity of its native wilds. For, like the form which has of late years become so fashionable in our collections, the uncultivated species are all "single," or at least as single as any plant belonging to the Composite Order can be in a botanical sense. This, we may, therefore, take it, was the variety which Lady Bute brought from Spain. Yet even this piece of history is only a presumption, for the plants introduced by her were lost. They died out before their progeny had grown numerous enough to keep the stock alive in the land to which the parents had been transplanted. Those from which most of the early English specimens are generally said to trace their descent were brought, fifteen years later, by Lady Holland. But this is a mistake, for the 1804 introductions also perished, and it was not until the Continent was thrown open at the close of the long Napoleonic wars that an opportunity was afforded our horticulturists of again attempting the naturalisation of the plant. The centenary of the Dahlia, as distinguished from the anniversary of the first efforts to acclimatise it in England, is, therefore, not due for a number of years, while France, and not Spain, must be credited with bestowing on us a plant which has now branched into such endless triumphs of the gardener's art, that it is hard to trace the original in these bewildering varieties of florists' flowers. The Dahlia first became really at home in our island in the year 1815. But France had it as early as 1800, and in Germany and Holland the date of its naturalisation must be fixed somewhere in the first decade of the century. At the outset our neighbours regarded the flower in almost any other light than that of a garden ornament. The tubers appear to have crossed the Pyrenees with the reputation of being an esculent preferable to the Potato, which, at that date, had not quite worked its way into favour with the country people. Their acrid flavour did not, however, recommend them to either man or beast, so that by the time the peace came the Dahlia had

already branched into many varieties of such great beauty that *virtuosi* making the grand tour were amazed at the splendour of a species the very name of which had almost died out of the recollection of their gardeners. Almost as soon as the Dahlia arrived in France the progress of the flower, from a shape somewhat like that of the wild one to the large, symmetrical blossom now so common, began. At all events, we find that as early as 1808 Count Lelieur was hybridising the few varieties then obtainable, until he produced dark reds, purples, cherry reds, buffs, and pale yellows in his grounds at St. Cloud, besides some striped and shaded seedlings, from which are believed to have sprung all the modern "fancy" Dahlias. The success of the English cultivators soon produced varieties far finer than any at that time known on the Continent.—*Standard*.

Cactus Dahlias.—I find Mrs. Hawkins one of the best of all this section of Dahlias to seed freely, but other kinds seem to be far more shy. If others will seed as freely, it will not be a matter for wonder if Cactus varieties become very plentiful presently. It would be a great gain to secure some which are much dwarfer, as the Cactus forms seem to be amongst the tallest of all Dahlias. Very likely the close contiguity of singles of various colours will help to the fertilisation of the double Cactus blooms. Still some of these will come of a semi-double character, the anthers and stamens being fully exposed to the insects. There does not seem to be any general tendency on the part of the single-flowered forms so far to develop into double forms, but the doubling would appear to be confined to those sections which have become recognised as double. Perhaps it is well such is the case, as then we are enabled to retain our single forms pure.—A. D.

Michaelmas Daisy culture.—There can be no question as to the suitability of these flowers for culture along with Rhododendrons, at any rate as regards their good effect when in bloom. But I question if they will, on the one hand, do well there for long, or, on the other hand, be tolerated in such places for more than a year or two. I find that by far the best plan is to divide the roots every year and set the pieces in well tilled plots every spring. Those who have followed this practice for a season or two are not likely to go back to the method of leaving old plants alone. There is no comparison in the size, colour, and quality of the flowers, and not the least gain is that the young stock flowers earlier and in a more dwarf state. Of course, one hardly need point out that this annual planting could not well be done among the brittle branches of Rhododendrons, or without much injury to their matted roots. The best way for those who wish to cut the heads by the armful is to grow them like Cabbages in an open situation, and with plenty of space between each moderate-sized root of four or five crowns. How lovely these flowers are this autumn! When this large genus has been picked over, there may be about twelve sorts well worth culture as being beautiful and distinct. There is one seldom seen, which, though the flowers are poor, their creamy whiteness, shape, and corymbose arrangement render a cut stem the pink of perfection for placing in a bowl or jar; it is *amygdalinus*. Moreover, it is one of the earlier bloomers, and its stems are as beautiful as Bamboos. Should anyone be induced to try it, let me caution him that this plant should be left two years without division, as it is a slow grower.—J. W.

—I am pleased with your notice of these (p. 286). I regard them as the finest of all hardy flowers in blossom at the present time. A little over a year ago I bought a collection of them. They were small pieces then, but they have now assumed large proportions, and prove how quickly they grow and become useful. They are not growing under the most favourable conditions, as I planted them under the partial shade of a north wall to keep them late, and the mass of flowers they are producing is all that could be desired.—J. MUIR, Marjani, S. Wales.

The Flame Flower (*Tritoma* *varia*).—In the terrace flower garden at Biel, East Lothian, this *Tritoma* is at present making a telling display. It is

massed in a wide strip 100 yards or so in length, and the thousands of strong upright scarlet and yellow flowers it has produced are very telling. Another huge patch replanted last year is not so vigorous. So long as Tritomas grow and flower freely, the best way appears to be to leave them alone.—J. MUIR.

AURICULAS.

PLANTS in pots should now be housed ready for the winter. The best winter position is a south aspect. Some who grow a limited collection in a movable garden frame will turn it round to the north in early summer, so that the plants may be kept cool and shaded during the hot weather, and during the winter towards the south, so that the plants get the benefit of any sunshine during that period. They are most blest who have a house in which they can winter their plants. One is not excluded from this in severe weather, but when the plants are in a cold frame in the open it is difficult to get at them while bad weather lasts.

When placing the plants in their winter quarters each should be carefully gone through and the leaves examined to see that grubs, slugs, and other vermin do not lurk among them. If any plants show signs of sickness, it will perhaps result from the soil about the roots being sour and sodden, or from decay of the tap-root. A plant apparently in the perfection of condition and health when potted in June or July, will by September or October have dwindled away in size rather than increased. Such a plant is holding out signals of distress, and should be at once examined. If turned out of the pot, it will be found a good portion of the tap root has rotted away. The whole of the soil should be shaken from the roots, the decaying parts cut away, and the plant repotted in the smallest pot that will take it, placing a little fine sandy soil about the roots to induce quick root action. If examined and so treated in time, good varieties may be saved and become of a good blooming size two seasons hence. Any plants of mine that have become affected in this way I prefer to put round the sides of pots, placing a fine compost made up chiefly of Cocoa fibre and sand about the roots, and they soon begin to work in it, and with proper care the plants speedily recover.

Watering at this season of the year and through the winter is a matter of the first importance. Really, the Auricula requires but very little water indeed during the winter. The Rev. F. D. Horner states—do not give it until they plainly ask for it, and then the soil should be well saturated and the water allowed to drain away from it before the plant is put back upon the stage. Plants will sometimes rot off just at the surface of the soil, and this is a danger that happens when they are potted too deeply, or when root action is imperfect and the soil soddened. As soon as rot near the surface is discovered, the plant should be turned out of the pot, the decaying portion of the root cut away, and the stem repotted, but placed above the soil, provided the roots are not laid bare. It is very likely indeed that the stem will put forth young growths, from which stock can be obtained.

The plants will soon begin to fall away to their winter's rest. They will show they are doing so by the decay of the outside leaves, and as these quite fade, they should be removed. Nothing that can harbour damp should be allowed to remain about the plants. Some of them may become entirely denuded of outside leaves, leaving only a kind of Filbert-like heart. There is no cause for dismay in this so long as the heart is sound, for when the awakening of the spring comes, it is astonishing how these bare hearts become aroused to action, and what strong and vigorous plants they make by the end of March. Other winter duties are to keep the pots clean, the surface free from anything like a green surface growth, the soil stirred occasionally and kept open, and a free circulation of air allowed on all favourable occasions. R. D.

Carnation W. M. Welsh.—At present Carnations seem more popular than ever. Their culture is being increased, and attempts are constantly

being made to raise new and improved varieties. Plants are easily raised from seed, but it is difficult to secure distinct and improved forms. The above variety, however, is both good and distinct, as I had recently an opportunity of seeing hosts of all kinds in Scotland, and W. M. Welsh was conspicuous among them all. They were not selected and put on show stands, but in the borders of the Pilrig Park Nurseries, and in the third week of September W. M. Welsh was flowering as profusely as if it were July. It comes early and remains late. It is a free-growing variety with abundance of robust dark green grass. The flowers are produced in successional clusters. They are up to the ordinary standard in size and form, and their colour is an intensely clear crimson-scarlet. As an easily-grown border variety this Carnation is in the first rank.—J. MUIR, *Margam, S. Wales.*

FLOWER GARDEN NOTES.

AGERATUMS AND HELIOTROPES IN MIXTURE.—Up to this date (Oct. 4) the frost that in many places has proved so disastrous to summer bedding plants has done no harm here, and the two plants in question are so magnificent as to justify a special note being made of them. The Ageratum is the variety known as Cannell's Dwarf, which grows about 6 inches high, and, owing to its flowering so persistently, grows so slowly that unless the plants are put in very close together, the ground is a long time in being covered. It was this circumstance that led me to plant Heliotrope with the Ageratum so as to more rapidly cover the ground. The harmonious blending of the three shades of colour, namely, the light blue or purple and the dark of the Heliotrope with the light lavender-blue of the Ageratum has proved to be one of the most pleasing mixtures of colour that I have seen. A not less effective feature of the mixture is the light or graceful character imparted to the beds by the Heliotrope, without which the Ageratum would have been flat, formal and monotonous. Some persons may perhaps think that a mixture of these colours would be heavy and lack brightness, and I confess that unless I had tested the matter such would have been my opinion, but now I think so highly of it that it would hardly be possible for me to arrange a garden without having mixtures of this character. Of course, brightness of colouring in the beds closely adjacent is desirable, otherwise, pleasing as such beds are in themselves, their frequent repetition would make the garden look dull and heavy. The same colours mixed with yellow or white Marguerites, or with white or yellow Violas, have a most charming effect, but of the two ways I think that I prefer having the plants named in separate beds, but with the beds of each close together.

SUCCULENTS.—These have lost favour with me for flower garden purposes, and yet for arrangements after the carpet bedding style we can hardly do without them. A few of the best and rarest kinds are all that we now use. Echeveria farinosa is one of the most beautiful and least formal, light silvery-grey in colour, of all the Echeverias, and as a companion plant to the Alternanthera has no equal. The best use to put the plant to is that of filling out the small angles formed in marking out small beds, such as circles, oblongs, and those of a diamond shape in carpet-bedding design. We have so used it here, Alternanthera paronychoides being the adjoining and surrounding plant, and inside of this the variegated Mesembryanthemum, the central mass in this being another favourite succulent, the blue-coloured Kleinia repens. Other favourite kinds are Echeveria gibba, Echeveria glauca metallica, and the variegated tree Sempervivum arboreum variegatum. All the excessively formal types of Echeveria and Sempervivum I have discarded. It was their novelty for use as bedding plants that tended to make them so popular, and now that the novelty has worn off, flowering plants are again to the front, and may they long retain the position.

PERENNIAL SUNFLOWERS (Helianthus).—These are not nearly so largely grown as they deserve to be. The plants look somewhat dull for some

weeks prior to their flowering season, at which time, however, they make ample amends for all lack of interest previously. All the varieties that I am fortunate enough to possess are now in their prime, and some two or three have been in good form for several weeks, the best of these latter being the double form of Helianthus multiflorus; this has been in flower ever since the beginning of August, and is still full of flower-buds. We have a clump of it immediately in front of the deep purple Aster Amellus, this being again backed by the giant Ox-eye Daisy (Pyrethrum uliginosum), and nothing at this dull autumn season in the hardy flower way could look finer. The single variety of Helianthus multiflorus does not flower so early as the double kind, but grows much taller. We have it quite 7 feet high, and it makes an excellent back line plant to a wide herbaceous border. The flowers range from 10 inches in diameter to about 4 inches on the side branchlets, and are of a deep lemon-yellow colour and last a week or more in good condition. By many the single variety is more prized than the double; it is certainly more showy, but as it does not flower nearly so early, I for this reason alone give preference to the double. Both varieties are well suited for planting in the wild garden, as both are able to hold their own against all comers. At the same time I commend them as sufficiently refined and beautiful to take a place amongst the choicest perennials.

HELIANTHUS RIGIDUS.—This is best known as Harpalium rigidum, but why it should not be classed as Helianthus I have never yet been able to make out, and till then I shall refuse to call it Harpalium; it is perhaps the most rapid growing, as it certainly is the most gorgeous flowering of all the varieties. The colour of the flower is a deep orange-yellow, the central disc, an inch in diameter, being nearly black, the same as in the flower of Rudbeckia Newmanii. We have the plant quite 7 feet in height, and blooming very freely. It has been in flower for at least six weeks, and if the frost would but keep off I doubt not but that the period of flowering would be extended. It is a fine companion plant to the tall Asters or Michaelmas Daisies. Helianthus occidentalis is a much dwarfier variety than any of the preceding, as it grows only about a yard high and is slender-stemmed. It has large flowers of the deepest orange-yellow with a black-brown disc. We have two or three other varieties quite as good as the preceding, but as they are unnamed any attempt I might make at describing them would perhaps be misleading. My opinion is that the varieties of Helianthus generally deserve to rank amongst the foremost of all hardy perennials.

W. W.

Lilium speciosum Krætzerei.—"H. P." in THE GARDEN (p. 298), is in error in regarding the above as "one of the dwarfest of the speciosum section," and must be speaking from a very limited experience of it, for instead of being one of the dwarfest, it is one of the tallest of the group. I have seen this variety in Mr. Wilson's garden at Weybridge nearly or quite 7 feet high, and many have reached a height of 6 feet 6 inches with me this season. The stems of newly planted bulbs, as a rule, average 3 feet in height. In the following season, if left undisturbed and the young growths are not ruined by spring frosts, many of the stems will reach a height of fully 5 feet, and in the third year, if all be well, they will grow 7 feet high, which, so far as my experience goes, appears to be the maximum height. The yellow-anthered form, L. s. album novum, will also grow to a similar height. The dwarfest varieties I know are catalogued under the names of præcox and Vestale, and instead of præcox being an early one, it flowered even later than Krætzerei. Both grew not more than 2 feet high, and are quite worthless compared with the pure and lovely form of Krætzerei.—E. J.

Glazed flower-pots.—These have been in general use at Drumlanrig for upwards of twenty years. Mr. Thomson speaks in the highest terms of their durability, cleanliness and general supe-

riority over the ordinary pots, and his good opinion is amply borne out by the excellence of the plants growing in them. I have not at any time seen finer tuberous Begonias than are growing in them, while the choicest stove and greenhouse plants are in excellent condition in the same kind of pots. Mr. Thomson has ceased to use the ordinary pots, and, considering the clean, neat appearance of the glazed ones, it is surprising they are not more generally used. I know of two or three that having seen them at Drumlanrig have adopted them, and the results of their use only require to be seen to ensure a general demand for them.—CAMBRIAN.

STOVE AND GREENHOUSE.

CROTONS.

WHEN well coloured these plants form the richest ornaments to a stove, and moreover they may be obtained so coloured in quite small samples, as well as in the size of the specimen shown in the accompanying illustration, but in

be added a little peat and some sharp sand. Drain the pots well, and during the growing season give an abundant supply of water to the roots. The plants should stand near the glass and should not be shaded except on unusually hot days, and then the shading material should be of the thinnest. It should be borne in mind, however, that unless the atmosphere is kept well charged with moisture the leaves will be apt to suffer under this very strong heat, and, therefore, the floor and stages must be frequently sprinkled with water, but do not syringe the plants during sunshine—morning and evening is the best time for this. If thus kept well supplied with moisture, Crotons will never suffer from the heat, and as the growing season is in our summer months, amateurs should utilise the heat of the sun to colour their plants, and during winter they should stand them in the warmest and brightest place.

The same treatment is required to produce large well-coloured plants as small ones, and

way, and which to this day stands in the first rank of the broad-leaved kinds. To those who have a stove I would say grow Crotons; the sun will help you, and you will produce such a vividly-coloured picture that flowers are not necessary. Dracenas are gay and beautiful, but they colour best in partial shade; but even beautiful as these plants are they must take second place in the matter of brilliant colours. The following are a dozen of the best kinds:—

C. DISRAELI.—This belongs to the Fish-tailed Crotons, which was the name given them by my friend, Mr. Charles Moore, the director of the Public Gardens in Sydney, Australia, who first found and brought this section to England. The leaves are three-lobed; when young the centre is light green, blotched with yellow, and margined with the same colour; with age the yellow blotches in the centre become rich orange-yellow, and the margins change to reddish-scarlet.

C. EARL DERBY.—Leaves similar in shape to those of the last named, centre rich yellow, bordered with bright green. A superb plant.

C. ELEGANTISSIMUM.—A highly attractive form, and one which colours freely, even on very small examples. The leaves are long, narrow, and pendent; the centre of the leaf is rich golden-yellow, narrowly bordered with bright green, the mid-rib bright red.

C. GOLDEN QUEEN.—Leaves nearly a foot long and about 3 inches broad, bright golden-yellow in the centre, border rich green, spotted, and blotched with gold. A very handsome form.

C. MAJESTICUM.—Leaves 18 inches long and narrow; when young bright green, blotched with golden-yellow; with age the colours become deep green and crimson. It is a most graceful kind.

C. MORTI.—A large bold-growing kind, with broad leaves, which are vivid green, broadly veined, and blotched with rich golden-yellow. This form, I believe, is still the best in its class.

C. MRS. DORMAN.—A very handsome, large-leaved kind. The centre of the leaf is orange-scarlet and the border is bright green, more or less blotched with orange-scarlet and yellow.

C. PRINCE OF WALES is a lovely form, with long, pendent, spiral leaves of crimson, gold, and green; a perfect living fountain. It is a plant which everyone should grow.

C. PRINCESS OF WALDECK.—This form has somewhat large leaves, which are rich deep yellow, with radiating lines and spots of rich deep green. It forms a complete bush of gold when well coloured.

C. QUEEN VICTORIA.—One of the handsomest of the large-leaved kinds, the leaves being variously mottled with bright green, crimson, and creamy yellow.

C. WEISMANNI.—A variety with medium narrow leaves, ground colour rich deep yellow, variously blotched with bright green. It forms a very handsome specimen.

C. WARRENT, the subject of our illustration, is a superb kind. Its narrow, pendent, spiral leaves are 2 feet or more long; the ground is green. When young the leaves are mottled and suffused with orange-yellow and tinged with carmine, but with age they become a beautiful crimson. W. H. G.



A fine plant of Croton Warrenti.

this larger state they are magnificent. In striking Crotons strong heat and moisture are necessary, and the cuttings should be prepared before they are taken off the plant. I have practised this system for some years and have found nothing to equal the plan. A plant may be chosen as the stock plant; the shoots upon this should be pinched out at the point, which will induce them to break back, and if three young growths do not grow away together, pinch each one again after it has grown a little. When the first growth is finished the shoots will be ready to cut off at whatever length may be decided upon, and when struck a bushy, well-furnished plant is at once produced, and in no other manner can it be so well obtained. I have tried striking the single shoots and then pinching them; but adopt my system—prepare them first if you would have good bushy young plants. Crotons are easily grown; the soil they like best is good friable loam, to which should

therefore the only additions required are larger pots and ample head-room. Some growers use artificial manures in the growth of Crotons, and I have tried these materials in the same house with plants which had only clear water, and the latter were decidedly the best. In the old days of Crotons we had three or four kinds, of which we were very proud, but it is to Mr. J. G. Veitch, the brother of the present head of the Chelsea firm, that we are indebted for such an awakening to the delights of form and colour as are produced in a state of nature by the Croton family. Mr. Bull, of Chelsea, has also introduced some beautiful forms of this genus; and Mr. Williams, of Holloway, has also imported some wonderful kinds. Amongst these is the variety here illustrated. The hybridiser has also been busy at home with these plants, the first English hybrid sent into commerce being the kind known as Queen Victoria, raised in Mr. Williams' nursery at Hollo-

Imported Lilium auratum.—At one time it was nearly Christmas before the first importations of *L. auratum* reached this country from Japan, but now one consignment has already been disposed of at the London auction rooms. The 1st of October is undoubtedly a very early date for Lily bulbs that have had such a long journey to reach here, but they appeared to be in good condition. Certainly there were some amongst them none too well ripened, but the bulk of them appeared to be plump and sound. From the fact of their arrival here already, the Lily season in Japan would appear to be much earlier than it is in this country, as in many places the Golden-rayed Lily is still bearing many unopened flower-buds. From the numbers that reach this country, the cultivation of Lilies must be an important industry in Japan, and as far as *L. auratum* is concerned, the Japanese are not likely to have any rivals, for though it succeeds in many parts of England it fails in many others, and can never be depended upon to furnish a reliable crop. The Dutch growers, too, do not appear to meet with much success in the culti-

vation of this Lily, for we never find it offered in quantity by them. On the other hand, *L. longiflorum* (which is also sent here in great numbers from Japan) thrives well in Holland; but the Japanese form, which more nearly resembles *L. Harrisii*, is much superior to the typical *L. longiflorum*, which is the one cultivated by the Dutch.—H. P.

PERPETUAL FLOWERING CARNATIONS.

WHY are the perpetual or winter-flowering Carnations so seldom grown in private gardens? Is it because those in charge of them do not thoroughly understand their requirements as pot plants, or is it because gardeners do not place sufficient importance in Carnations to deem them worthy of their special attention?

Under certain conditions and given proper treatment it is a comparatively easy matter to have Carnations in flower at all periods of the year—in midwinter as at midsummer, yet how few attain that end, in private gardens at any rate. Occasionally a good collection of plants with a fair amount of bloom may be seen in gardens at midwinter or in early spring, but these are exceptions to the rule. One well-known gardener once told me that as a pot plant the Carnation was not worth growing, as it was not only unsightly in appearance, but failed to produce sufficient return in the shape of bloom to repay for the labour incurred. I admit that such is the case when carelessly managed, for no plant perhaps has a tendency to grow so straggling or to produce such few blooms when neglected as the pot Carnation. Given proper treatment as regards watering, tying, and ventilation from beginning to end and matters will be reversed.

In private gardens Tree or winter-flowering Carnations are mismanaged. Too frequently gardeners have them mixed with a miscellaneous collection of plants, where they do not receive proper attention. To grow and bloom Carnations successfully in winter they must have a genial, dry atmosphere, with abundance of ventilation on all favourable occasions. Frost, of course, must be excluded, and also damp, both being detrimental to the development of the blooms. One successful grower of my acquaintance keeps his plants in a small house by themselves until they are in bloom, and then removes them to the conservatory for the time being. The temperature of the structure in which the plants are grown is never allowed to fall below 45° at night or rise above 60° during the day, unless it be on a very bright day, from November until the end of March. By adhering strictly to this rule he is never without plenty of bloom during the period mentioned; indeed, the plants continue to flower until the border varieties come in. It is useless to attempt their culture in a hot, stifling atmosphere, this being fatal to the plants. It is equally useless to grow them in a house where other plants are being continually watered, as the moisture is sure to render the blooms valueless as soon as, if not before, they expand. The secret of obtaining abundance of Carnation blooms in winter practically lies in the following: Sturdy, well-grown plants to begin with, careful watering, and a dry, genial atmosphere, avoiding anything approaching to forcing. Given this treatment, Carnations in pots will scarcely fail to satisfy the most fastidious.

To nurserymen and market growers, however, must be awarded the palm for the culture of winter blooming Carnations. They make it their business to produce blooms in quantity for cut purposes at a time when they realise remunerative prices, and failures with them are rare. Of course, they have special facilities in the shape of separate houses for the culture of the plants, but it cannot be said that the treatment they give them is of the tenderest nature; indeed it might be termed rough, so much so, as to almost frighten the average private gardener. Still they manage to grow their plants well and to produce plenty of bloom, this being the desideratum. It also bears testimony that Carnations as winter-blooming plants are not so difficult to manage as is generally supposed.

But successful as our own nurserymen and market growers are with these popular flowers, they do not grow them so extensively nor so well as the American florists. Around New York especially Carnations are grown in immense quantities. There the system of culture differs considerably from ours. We grow the plants in pots during winter, but the American growers, in the majority of instances, deem it advisable to plant them out in "benches" or raised borders. Whether this method of culture would succeed here or not I do not know. At any rate it is worth a trial, seeing that in America it answers so admirably. There, too, the long spells of frost compel the growers to use more fire heat than is necessary in this country, but owing to the dry atmosphere which generally prevails in America in winter the blooms develop more quickly and better than with us. A brother of mine in America informs me that it is no uncommon occurrence to see Carnations in bloom in winter in cottage windows; indeed, they are as common as Geraniums or Fuchsias in this country.

Layering and striking cuttings are the two usual methods of obtaining a stock of Carnations, though the raising of plants from seed appears to be attracting more than ordinary attention just now. The other day I saw a fine collection of plants in pots raised from seed sown in August, 1888, and the majority of them were just coming into bloom. At the Royal Nurseries, Slough, I believe, large quantities of plants are raised from seed, and the seedlings being of a vigorous and branching habit are more free-flowering than plants from cuttings or layers. Mr. Turner generally sows in spring, and as soon as the seedlings are large enough and weather permits they are planted out on raised beds of well-prepared soil. There under good management they make rapid growth, and invariably show signs of flowering by September, when they are lifted, potted, and placed in a light airy structure. Treated thus the plants continue to bloom through the whole winter. So far as my experience goes, however, I have found August the best month for sowing, and that a year, or nearly that time, must elapse ere the plants come into bloom. Plants raised from layers or cuttings in spring will, of course, bloom the following winter.

The question of soil is an important one. I have found pot Carnations do best in pure loam of good substance if given plenty of drainage and judiciously watered. Some growers, on the other hand, consider sand and leaf mould indispensable. But in either case the plants should be potted firmly.

As regards varieties, these are now numerous. Of scarlet, red, and similar shades of colour we have plenty, but white and yellow-flowered varieties are as yet scarce. C. L.

Some new Continental Begonias.—Mr. R. Owen is now flowering at his nursery, Castle Hill, Maidenhead, some new Begonias raised by M. Crousse; amongst them are some very promising double yellow-flowered sorts, such as *Mr. French*, white, with pale yellow centre; *Mme. Soupert*, white, with citron centre, a variety remarkable for its very fine and stout shell-like petals; *Sceptre d'Or*, white, with deep yellow centre; and *Mme. J. Sarjas*, rosy blush, with citron centre; these appear noticeable more for their Camellia-like rather than for their Hollyhock-like flowers. There are some new single varieties from the Continent, but it can scarcely be said they are of a promising character. It seems to me that the English raisers of single Begonias have obtained a very satisfactory lead in the production of new varieties. I could not help being struck with the large size, stoutness, symmetry, and rich colouring of many of the seedlings raised by Mr. Owen and now in bloom at his nursery. The side petals are as large as the upper and lower ones, and this imparts to the blooms a round and symmetrical character. The Begonia produces its blossoms generally in threes, a male one in the centre, with a female blossom on either side. Formerly the female flower was much smaller than the male; now it almost equals it in

size and perfection of form. Beds of seedlings in the open ground were very bright and effective. —R. D.

SILVER TREE.

(*LEUCODENDRON ARGENTEUM*.)

THIS, the Silver Tree of the Cape, concerning which inquiries are made in *GARDEN*, Sept. 28 (p. 303), is not a very difficult subject to cultivate, but I would advise your correspondent not to sow his seeds until the spring, as the seedlings are liable to damp off during their earlier stages. Keep the seeds until the end of February or the first half of March, when they may be sown, using for the purpose either pots or pans, which must be thoroughly drained. The soil should be of a good open nature, say two parts of peat to one each of loam and silver sand, and with this compost the pots or pans may be filled to within half an inch or rather more of the top. The surface having been made level, the seeds may be sown thereon, and covered to a depth of a quarter of an inch with the same compost sifted fine. Having been lightly watered through a fine rose, the seed pots may be placed either in the warmest part of the greenhouse or in a structure kept at an intermediate temperature, should one be available for the purpose. Sufficient water should be given to keep the soil moist, and so treated the young plants may be reasonably expected to appear above ground in a month or six weeks from the time of sowing. A good time to pot off the young plants is when the first rough leaf makes its appearance between the cotyledons, and the compost should consist of the same kind of soil as that in which the seeds were sown. For this purpose small pots about 1½ inches or 2 inches in diameter must be used, and they should have a good layer of broken crocks in the bottom. In potting, the young plants should be buried nearly to the seed leaves, otherwise they are liable to topple over and decay (which will happen if they stand too long in their seed pots). They must be kept somewhat close for a little time after potting, and when recovered from the check keep them under much the same conditions as the greenhouse Heaths, that is to say, plenty of air whenever possible, and careful attention as regards watering. This *Leucodendron* will run up rather tall; indeed, it does not branch out at all freely unless the top is pinched out, and the flowers may be left out of consideration altogether. If too heavily shaded during the summer the foliage will not be so silvery as on plants more exposed; still the sun shining on the side of the pot is very injurious to this *Leucodendron* as well as to Heaths. H. P.

Schubertia grandiflora.—In *THE GARDEN*, Sept. 28 (p. 286), the writer of an article on this stove climber objects to it because the colour of the flowers is a "dirty white," and to this he might well have added another point that tells against its general cultivation, viz., the very unpleasant smell of the foliage if touched or bruised in any way. In other respects it is all that can be desired, as it grows rapidly, flowers freely, and is not subject to mealy bug to the same extent as the *Stephanotis*, but it will certainly never rival this last. The *Schubertia* can be readily struck from cuttings of the young growing shoots put in at any time during the spring and summer months.—H. P.

Impatiens Hawkeri.—Some specimens of this which flowered profusely throughout the summer, at the end of the season lost many of their leaves and appeared likely to go to rest, but directly afterwards they again started into growth, and are now quite studded with their brightly coloured blossoms. This *Impatiens* is very showy when in flower, but in many cases it is attacked by a disease which causes the young leaves to become deformed, and then drop. This is to some extent owing to the plants being kept in too close an atmosphere, for where more exposed to the air they are much less liable to be attacked in this way. While *Impatiens Sultanii*, and, in fact, most of the Balsams, seed very freely, singularly enough, I have never known this

species to produce any seed whatever, though as far as increasing the plant is concerned, this matters but little, as cuttings of the young growing shoots strike root very readily. During the winter the plants should be kept fairly dry, otherwise the strong succulent shoots are liable to decay.—H. P.

WORK IN PLANT HOUSES.

GREENHOUSE.—MIGNONETTE.—Another sowing of Mignonette should now be made, the plants from which will bloom in succession after the earliest get shabby. Sow in 3-inch pots, putting half a dozen seeds in each; the plants can afterwards be judiciously thinned out. For this later flowering batch three or four may be grown in each pot. A cold frame or pit is the best place to stand the pots, keeping the lights closed until the seedlings appear, after which they must have plenty of air in the daytime, as unless the plants are sturdy and short-jointed they will not bloom well. The plants which have been raised from the first sowing will now be large enough for thinning; where high cultivation is aimed at, one plant is enough to retain in each pot. When they are 3 inches high the points must be pinched out to induce the formation of sufficient side shoots to furnish the base of the future specimens. When the weather is fine the lights should be drawn off in the day; at other times tilt them so as to admit an abundance of air, this, combined with the plants being stood near the glass, being the only means by which the right kind of growth can be secured. Keep the soil moderately moist, but not too wet. Mignonette is a spare rooter, and is impatient of too much moisture, especially at this season, when the growth is necessarily slow.

HERBACEOUS CALCEOLARIAS.—Plants raised from sowings made at the time advised will now be large enough to prick off. Shallow boxes are the best to use. A compost consisting of three parts fresh loam to one of leaf-mould or rotten manure in equal proportions, all passed through a fine sieve, with enough sand added to make the whole light, will be found best. In material of this description the plants will make double the quantity of roots than when heavy soil less finely broken is used. They should be put in about 3 inches apart, so as to allow them enough room to grow without crowding. A cold pit or frame in a light, sunny position is the best place to keep them in up to the end of next month. Raise the boxes so that the plants will be close to the glass. Give plenty of air in the daytime, but close the lights at night, and when there is any likelihood of frost a mat should be laid over the lights. Treated in this way, the plants, if they are of a good vigorous strain, will form broad, stout leaves that lie almost flat on the soil. It is only by having them in this condition at the end of the year that well-flowered specimens can be obtained.

SHRUBBY CALCEOLARIAS.—Plants raised from seed require to be now treated similarly to the herbaceous sorts. Rich light soil, abundance of light, a cool moist atmosphere, with freedom from aphides are the conditions indispensable to healthy stock. The plants should be frequently looked over to see that they are free from aphides. When they are quite clear of these pests in the autumn there is not much fear of trouble arising before spring, provided they are not placed with anything that is affected with the insects.

CINERARIAS.—Plants raised from a second sowing made with the object of having successional blooms in spring will now be large enough for moving into the pots they are to flower in. Such as are from 5 inches to 6 inches in diameter will be sufficiently large. Cinerarias are gross feeders, and, in addition to being liberally fed with manure water, like rich soil. A compost such as recommended for Calceolarias will answer, but it will only be necessary to sift the leaf-mould and the manure; the loam will do if passed through the hand so as to break it up moderately fine. After potting stand the plants in a cold pit or frame on a bed of ashes raised sufficiently high to bring them near the glass. Cinerarias delight in a cool, humid atmosphere, and consequently are better in cool quarters

up to the end of the ensuing month, provided that a covering is used when there is danger of frost. Cinerarias also like more water both in the atmosphere and at the roots than most things, but now when the air day by day becomes cooler and more laden with vapour less water must be given. The roots of the earliest plants will have got well hold of the soil and will be benefited by manure water every time the soil requires moistening. If the stock has up to this time been treated as advised, the plants are not likely to be much troubled with aphides; nevertheless the under side of the leaves should be examined from time to time, otherwise the insects may get numerous before they are seen and give trouble afterwards. It is not advisable to fumigate Cinerarias if it can be avoided, as the amount of smoke necessary to kill the insects often injures the foliage, especially when the plants are well grown, and therefore have large soft leaves. Dipping in tobacco water is the safest and best means by which to get rid of the pest.

CHRYSANTHEMUMS.—Continue to thin the buds of the late-blooming plants so far as necessary to ensure the production of flowers that will have their centres fairly full. Without this the large-flowered varieties that now almost alone find favour with many growers have a ragged, poor appearance. The extent that the thinning requires to be carried to can only be learnt by experience with the different varieties, as some are able to produce a larger number of fairly-developed blooms than others. The pots should by this time be quite full of roots, which will be almost wholly dependent on the assistance that is given them by manure water. This ought to be used of moderate strength every time the soil requires moistening. The plants should be frequently turned round, so as to stop their roots from taking hold of the material on which they are stood, as if allowed to do this, the flowers will show the ill effects of the consequent breaking of the fibres when the time comes for housing. The general stock that bloom at what may be termed the legitimate season are better out of doors yet, and still more those that are intended to bloom the latest; but provision should be made for protecting the plants from sharp frosts that after this time there is always danger of, and which last year destroyed the hopes of many cultivators. A very thin covering overhead is generally sufficient to keep them safe until October is well advanced. Whatever is used in the way of blinds must be movable and supported on a light framework.

BRUGMANSIAS.—The time of these plants flowering, especially when grown in pots or tubs, depends a good deal on the time they are started in spring. In most cases the bloom will now be getting over; the plants should then be prepared for their winter's rest by gradually withholding water, so as to reduce the soil to a half-dry condition, after which the shoots may be shortened back to within one or two eyes of where they were cut into last autumn. They may afterwards be stored away anywhere where they will be out of reach of frost. The most useful form in which these Brugmansias can be grown is standard shape in large pots or moderately-sized tubs. In this way they can be moved at will in conservatories, verandahs, or halls, in all of which their large noble-looking flowers are most effective. Young plants raised from seed or cuttings a year ago or during the past spring are better kept a little moister at the roots; all the cutting in they will require is to remove any side shoots that may have been formed, leaving the leading stem to develop until it has acquired the desired height. With liberal pot-room this will be reached next summer, after which the extremity must be removed so as to encourage the formation of a bushy, well-shaped head.

KALOSANTHES.—If these plants are still out of doors, they should be housed immediately, as their succulent nature is such as will not enable them to bear much frost. If, as advised awhile ago, they have been outside fully exposed to the sun, there is little doubt of their flowering well next summer whether the specimens are large or small. They should be stood close to the glass in a light pit or house where an

ordinary greenhouse temperature is kept up through the winter. The roots are impatient of much moisture; consequently the soil must be kept somewhat drier than it requires to be in the growing season, yet it must not be allowed to get so dry as to cause the leaves to shrivel in the least. Should this occur, it will cause those on the lower portion of the stems to die. When this happens, though it does not seem to affect the flowering, it gives the plants an unsightly appearance. See that they are quite free from aphides, which are not so easily detected on Kalosanthos as they are on some things; the juices of the plants are so acrid, that the insects do not attain half their usual size and are almost the same colour as the leaves. They congregate down in the centres of the shoots, where they disfigure the young leaves before they have attained full size; partially concealed here they are difficult to kill, as in fumigating, the smoke, unless very dense, does not reach them. Repeated applications are often necessary to destroy the pest. Dipping in or syringing with tobacco water will destroy them.

T. B.

Costus igneus.—This beautiful stove-flowering plant has never become common, though it was introduced by M. Linden as far back as 1882. Like the rest of the genus, its cultural requirements are but simple, for potted in ordinary compost and given the same treatment as the general run of stove plants, it will both grow and flower freely. Its usual habit is to push up several stout fleshy stems to a height of 1 foot to 2 feet, which are terminated by the heads of blossoms. The flowers spring from a flattened cone-like arrangement, and are often open two or three together. The individual blooms are about 1½ inches in diameter and of a very bright orange-red colour, a hue that is very little represented among stove-flowering plants. It is easily increased by division. It flowers at intervals throughout the autumn and well on into the winter months.—H. P.

Lilium Harrisii.—To see this beautiful Lily at its best, and more particularly if it is required for early flowering, no time should be lost in potting the bulbs after their arrival in this country, for they reach here in a thoroughly ripened state, with the roots at the base of the bulb just ready to start away into any suitable compost. The longer the bulbs are kept out of the ground after this the more they become weakened. When potted they should be placed in a cold frame or similar position, and will need but little water till the roots are in active growth. The time of the year at which these early potted bulbs will flower depends upon the treatment given them, for by forcing they may be had in bloom during the first months of the year, while if just protected from frosts during the winter and treated afterwards as cool greenhouse plants, they will not flower till June or July. By this it will be seen that a succession can be kept up for a long period, especially as the early-flowering ones will some time after blooming push up secondary stems, weaker than at first, but still valuable from the time of the year at which the flowers are borne. With the exception of the Neilgherry Lily (*L. neilgherrense*), the Lily season may be said to finish by the end of September, and occasional flowers of *L. Harrisii* are borne on these secondary stems a month later than this. There has been a considerable amount of controversy raised with regard to this Lily, the point at issue being whether it really differs from some of the varieties previously in cultivation, or whether its adaptability for forcing, and the fact of its flowering twice in a year, are not induced by the different climatic conditions under which the bulbs have been grown. My opinion is that such is the case, for after growing in this country a season I fail to distinguish the least difference between the United States *L. Harrisii* and some Lilies of the longiflorum class imported from Japan, while at no time was there any tendency in these last to flower twice in a year. Another fact which tends to strengthen this opinion is that some years ago when the Bermuda Lily, as it was then called, had just begun to attract attention, I purchased a few bulbs direct from that island, and among them

were a couple of *L. longiflorum*, which flowered twice the first season, but after that they behaved exactly as those that were grown in Holland. With regard to the beauty of their blossoms, *L. Harrii* is far superior to the typical *L. longiflorum*, the tube being much longer, the flower of a purer white, while the segments reflex in a more graceful manner than those of the common *L. longiflorum*, whose name appears somewhat of a misnomer now we have such long-flowered kinds as the variety above mentioned, *L. neilgherrense*, and *L. Wallichianum*.—H. P.

Bougainvillea glabra is a fine sight on the inside of the roof of one of the plant houses at Gunnersbury House. By reason of the estate changing hands, a sale took place recently, and the *Crotons* and other plants were sold, quite emptying the plant stages. The result appears to have been that the *Bougainvillea* has made a remarkably free growth, and is now flowering very freely. It is planted out, and appears to revel in its liberty of root action. It is almost unrivalled for the rich hue of lustrous mauve of the bracts which surround its inconspicuous flowers.—R. D.

Ceanothuses in pots.—These fine flowering shrubs are not grown in pots so often as they might be. I know of only one instance where they are grown thus, and in that case they are used extensively for the embellishment of the conservatory during the spring months. Gloire de Versailles, the best of the *Ceanothuses*, is very effective when judiciously arranged with other plants. When grown as pot plants, *Ceanothuses* require similar treatment to that given to other hardy shrubs, and may either be kept in their pots, or planted out during the summer. The former course I have invariably found the best, merely plunging the pots in a bed of ashes in a sunny position in May.—L.

WATER BOUQUETS.

"A. H.'s" note in *THE GARDEN*, Sept. 21 (pp. 259-60), is likely to recall attention to these refreshing additions to decorative gardening. Some years since water bouquets promised to become popular, and liberal prizes were offered for them at various shows, but somehow neither the making nor showing of them became popular. This partly arose from some practical difficulties in immersing, placing, readjusting, or renovating the bouquets. Of course, the bouquets could only be glassed over or uncovered under water. The process of covering carefully and of adjusting flowers, sprays, or foliage in the most artistic manner is more difficult and delicate than might seem to the uninitiated. The practical difficulties are increased by the fact that the covering bell-glasses for water bouquets must not be furnished with knobs, as these mar the effect. The base dish on which to stand the glass must also be perfectly level. Thus there are three or rather four distinct objects to be managed at once under the water: the bouquet, its vase or holder, the base, and the covering globe or dome of clear transparent glass. One of these indeed may be dispensed with—the vase or holder; but then there may be considerable difficulty in keeping the bouquet in the centre of the base or bell-glass. A lead or other weight has often been used for this purpose, which renders the bouquet heavier than the water and helps to keep it in one spot during the crucial process of immersion. But such precautions are not always proof against awkward displacements, and the water bouquetist often longs for the impossible power of making certain final changes and elegant combinations.

Care must be exercised in lifting the bouquet out of the water. It must be kept perfectly level, or all the water will fly out and the glass be smashed with the pressure of the atmosphere as it leaves the water. It takes also some strength to lift a water bouquet out of the water, as I once discovered to my cost. A rather large-sized water bouquet was prepared for exhibition at a provincial show. Unfortunately, no tub nor tank could be found deep enough to flood the bouquet. A lake was the only alternative, and after a good deal of trouble the bouquet and all its needful accessories were safely placed under water and tastefully adjusted. A sudden effort was then made to lift the

bouquet out, with the result that it dragged me in, smashed the bell-glass, and ruined the bouquet. Such a rare experience is not recorded to deter anyone from making water bouquets, but as a caution against making them too large, or endeavouring to safely float large ones by oneself at the side of a lake or river.

Of course, too, no one familiar with the enormous pressure or what is commonly called the suction exerted on or by water bouquets will attempt to uncover them unless first wholly immersed in water, as otherwise the strongest bell-glasses may be smashed by any attempt to remove them in the air. Everyone who has once seen a water bouquet must also know that no attempt must be made to disturb or examine it unless under water, for unless the glass fits closely on to its base and remains level, and in fact hermetically sealed to it, the whole of the water will rush out on the table or room, the water bouquet become a waterless one on the instant, and the bell-glass be smashed by the sudden pressure of the air on its exterior before the air had time to fill the vacuum inside. Hence the less water bouquets are moved the better, and in moving them from one table or place to another use both hands directly opposite, so as to preserve all as level as possible.

These practical details may prove useful and prevent accidents to beginners in making water bouquets. Sprays of foliage and flowers very often prove more charming in water than more ponderous combinations. The innumerable glistening crystal globules "A. H." refers to constitute one of the most attractive charms of water bouquets. They are more or less numerous in all water bouquets, and are said to be caused by air globules escaping from the tissues of immersed foliage and bloom. Some flowers and leaves, however, seem to produce these more plentifully than others, and they are also more transparent and more numerous in hard water than soft. In fact, the perfect cleanliness of leaf and bloom and absolute translucency of glass and water are most essential elements in the manufacture and display of perfect water bouquets. Hence in using Forget-me-nots, plumed or feathered Grasses, or any other common flowers or foliage, they should be well washed clear of soil and dust before being used, and in the case of Grasses or other plants with a profusion of pollen or small seeds, such must be used in a young state before they can be readily separated or distributed in the water. Ferns of a medium age stand longest and look best in water bouquets, and none are more effective either for elegance and a full crop, shall I call it, of crystal globules than the different species and varieties of Maiden-hair Ferns, not omitting the *Adiantum farleyense*. As to flowers peculiarly adapted for water bouquets, most of those generally used for common bouquets look well. Among these Orchids, Roses, *Bouvardias*, *Stephanotis*, *Eucharis*, *Pancratium*, Valley Lilies, Lilies, *Narcissi*, *Hyacinths*, *Jasmines*, Stocks, double Chinese Primroses, *Cyclamens*, Azaleas, while, if carefully handled, *Gardenias* and *Camellias* may certainly be included. All the *Hoyas* are also admirable, but especially *Hoya bella* in preference to *H. carnosa*. Also the two *Lapagerias*, rosea and the pure white variety. *Chrysanthemums* of most species and varieties, especially the more light and curiously-formed Japanese sorts, exhibit all their rich combinations in perfection under glass, and last longer than many other flowers.

But the durability of water bouquets varies much according to the season of the year, the temperature of the rooms, and their position in regard to sunshine, &c. But, being air-tight, most of them will last fresh from a week to a fortnight or three weeks, which is long enough for any bouquet. Should any portion give way or decompose before another, it is easy to plunge the bouquet with its environments under water, remove the bouquet and pick it over and patch it up again, or replace it with a new one, as desired or thought best.

The great merits of water bouquets are the presentation of every spray, leaflet, and flower to the eye. The chief drawbacks are the barrier of glass between us and the flowers, that shuts in all the exquisite fragrance of bloom or foliage, and

the considerable risk of the breaking of glass and the spilling of water. However, in the careful management of water bouquets the risk of accident is but slight, and sensitive invalids in hospitals and private houses may only be too thankful to be delivered, through the intervention of water bouquets, from the opposing odours of semi-putrid water and fulsomely sweet flowers, that doubtless have often proved injurious rather than healthful.—D. T. F.

—Having seen "A. D.'s" note in *THE GARDEN* (Sept. 14, p. 235), also "A. H.'s" (Sept. 21, p. 259), and being the inventor and first exhibitor of the water bouquet, and having made some hundreds of them, I am in a position to answer "A. H." Among some of the most suitable flowers are *Eucharis amazonica*, *Cœlogyne cristata* (in fact many of the Orchids are beautiful in water), *Caladium leaves* (in miniature)—*Caladium Wightii* is best of all—*Echeveria metallica* flowers, *Spiræa japonica*, *Abutilon Boule de Neige*, *Deutzia gracilis*, *Bouvardias*, *Ericas*, *Edelweiss*, *Eschscholtzia alba*, *Ipomœa alba*, *Lapageria alba* and rosea, white *Asters*, light-coloured *Gladioli*, *Sedum Sieboldi variegatum*, and any of the white *Jasmines*. Any of the smaller Maiden-hair Ferns, such as *Adiantum cuneatum*, *pentaphyllum*, *gracillimum*, &c., are very beautiful. I might mention hundreds of others, but those named will give a good idea of the most suitable. The flowers of *Hoya carnosa* are of no use in water. *Maréchal Niel* and *Niphetos* Roses when in bud are also very suitable.—JAS. WARD, *Ballymalter Park Gardens, Co. Down*.

GARDEN FLORA.

PLATE 722.

GERBERA JAMESONI.*

THIS is another addition to the enormous number of beautiful garden plants which belong to the great Composite Order. The genus *Gerbera* comprises some score or so of species, most of them natives of the Cape, three or four only being found in other countries as well. It now includes *Berniera*, *Oreoseris*, and several other old genera, and it is related to *Mutisia*, *Stiffia*, and *Barnadesia*. In habit and leaf-structure it greatly resembles such Composites as *Hieracium* and *Lactuca*; certainly no one would suspect its near relationship with the *Mutisia* section unless he saw the flowers.

Although several other species of *Gerbera* have been in cultivation at some time or other, apparently none of them was possessed of sufficient beauty to find any favour with horticulturists. But *G. Jamesoni* is the exception. There are, in addition to this, a few others with large, brightly-coloured flowers, and these also are worth looking after by Cape collectors. I am told that at least one garden in England possesses one or two other kinds of *Gerbera* with attractions even greater than those of the species here figured. We may therefore look forward to their flowering soon, as the genus does not appear to be at all difficult of culture or shy flowering.

G. Jamesoni was discovered a few years ago by a Mr. R. Jameson in the Transvaal, at a place near Barberton, now famous for its gold mines. It was first introduced and flowered by Mr. Tillet, of Norwich, in 1887. The plant from which our plate was made came, however, from the Botanic Gardens of Durban, Natal. It flowered at Kew for the first time in June of this year, since which time one or the other of the two plants grown in pots at Kew has been in bloom. A third plant has been in a sunny border all summer, where it has grown well and

* Drawn for *THE GARDEN* in the Royal Gardens, Kew, by H. G. Moon, May 24, 1889. Lithographed and printed by Guillaume Severeys.



GERBERA JAMESONI

is now in bloom. Possibly it may prove hardy enough to be left outside all winter. In the same border *Anemone Fannini*, which comes from the same region, lived through two winters, but it did not grow as strongly in summer when thus treated as when kept in a sunny greenhouse; at any rate, the *Gerbera* may be planted outside for the summer. As a pot plant it is perfectly charming. Its lyrate, leathery leaves are arranged in a rosette, and they spring from an almost woody rootstock. They are each about a foot long, dark green, smooth above, hairy on the under side. The flowers are axillary, the peduncle being erect, a foot or more long, the heads nodding. Each head is fully 4 inches across, and it has the general appearance of the flower of *Mutisia decurrens*. The ray florets are 2 inches long, notched at the apices, spreading out almost flat under the influence of bright sunlight, almost closing in the evening. The colour is the most lovely glowing scarlet. I am afraid the printer has not quite caught the shade of the flowers as drawn by Mr. Moon, those in the picture lacking the flame-like glow of the flowers themselves. Each flower lasts about a fortnight.

At Kew the specimens grown in pots are planted in a mixture of loam, peat, and sand, and they are watered as one would water a *Cineraria*. They are kept in a sunny, airy greenhouse all the year round. W. W.

TREES AND SHRUBS.

NOTES ON HYPERICUMS.

THE *Hypericums*, or St. John's-worts, embrace more than 160 described species of herbaceous and woody plants, and there are probably a good many more still unknown. Of the known species only a comparatively small number are of much value to the florist or gardener. Except in very rare cases, in which the blossoms are white, the flowers of all the species are yellow, and they vary in size from very minute ones on slender annuals, 1 inch or 2 inches high, to the large golden yellow blossoms each several inches in diameter of some of the cultivated species.

Hypericums are chiefly found in North America, Europe and Asia, but a few are tropical, and some inhabit the southern hemisphere. In Europe a few of the tender species are thought worthy of greenhouse culture. The name of St. John's-wort is said to have been derived from the fact that the common people of some European nations, especially the English and Germans, used to gather large quantities of the flowers and ornament their dwellings with them on St. John's Day as a supposed protection from evil spirits. The species chiefly used for this purpose and to which the name was first given was the common St. John's-wort (*Hypericum perforatum*), which is found all over Europe and a large part of Asia, and which, having become naturalised in America and spread over a large area, is now looked upon here as a troublesome weed. It is a perennial herb, and when in full bloom is certainly as handsome as some of the occasionally cultivated herbaceous or half-shrubby species. The deep yellow flowers in large corymbs are over 1 inch in diameter and crowned with many stamens, while the leaves have very distinct pellucid dots, which are plainly seen when held up to the light. These dots on the leaves are characteristic of this genus, but they vary in number and size on different species, and are often black instead of pellucid. They secrete aromatic resinous juices and a volatile oil.

The *Hypericums* are generally not difficult to cultivate and propagate, yet very few classes of hardy ornamental plants are so little known and so poorly represented in American gardens generally. Some of the group are particularly valuable, because they flower after most shrubs and early sum-

mer-blooming perennials have passed their best condition, and before other autumn-flowering kinds have developed much of their bloom.

A number of shrubby and half-shrubby species of *Hypericums* grown in England and the warmer parts of Europe cannot be relied upon to withstand the winters of our New England or Northern States. Among those tested at the Arnold Arboretum are some which are thoroughly satisfactory, and others that have promised well in the short time they have been in the collection. They have been grown in an exposed situation where there was little protection in winter and no shade in summer, and where it was, perhaps, too wet in winter and spring to give the best results.

Of the low-growing, half-woody species, *Hypericum calycinum* is decidedly the most interesting and satisfactory. The stems are less than a foot high, and although killed back to the ground every winter, new flowering shoots arise from the creeping, woody rootstocks. Rarely more than one flower is developed at the top of each stem. The handsome flowers are bright yellow, each from 2 inches to 3 inches in diameter, and crowned with many long stamens. This species is easily propagated by root-cuttings, or cuttings of ripe wood in late summer. The roots spread and ultimately make large clumps, and the plants will thrive very well either in the open sunlight or under trees if the soil is not too poor. In the arboretum this *Hypericum* begins to flower early in July, is in its best condition during that month, and bears a few flowers in August, or even later. It is a native of South-eastern Europe. This and all the other *Hypericums* bloom later and for a longer time if grown in a cool, partly shaded place.

HYPERICUM HIRCINUM, though not so handsome as the preceding species, is a very free bloomer and is easily cultivated. The stems are killed almost to the ground in winter, and come up again each year to nearly 2 feet in height. It begins to flower about the second week in July and continues until near the end of August. The form known as *minus* is simply smaller and more compact in every way, and seems to flower somewhat later.

H. MULTIFLORUM grows taller than the last species, which it much resembles in foliage and flower. It is more shrubby, but its blooming season is shorter, lasting only for about two weeks in July.

H. OBLONGIFOLIUM, a native of high altitudes of the Himalayas, has not proved very hardy, but should be further tested. It has large leaves and very handsome golden-yellow flowers each from 2 inches to 3 inches in diameter. Another Asiatic species is *H. patulum*, with somewhat smaller leaves and flowers. It has usually proved hardy, but, with some others, was killed last winter. *H. androsæmum*, the Tutsan or Sweet Amber of England, requires further proof of hardiness before it can be recommended here. Some of these species, as well as some others, may thrive with a little care in the climate of the middle States or further south, but here they require a good deal of protection in order to give very satisfactory results. But among the thirty known North American species are several which are perfectly hardy and also very bright and effective as ornamental garden shrubs. By far the best of these is the beautiful

H. AUREUM, which in cultivation is a bushy, very much-branched shrub, 3 feet to 4 feet high, and often more in diameter. Several flowers are usually produced on the end of each branch and branchlet, although in a wild state the flowers are often solitary. The flowers are each $1\frac{1}{2}$ inches or sometimes nearly 2 inches in diameter, and pale yellow or orange in colour. Although a native of Tennessee and other Southern States, this species proves perfectly hardy about Boston, where it continues blooming from the first or second week in July until the middle of August, or later if the plants are young or growing in a moist or partly shaded place.

H. PROLIFICUM is a species found from New Jersey southward, and also westward in Minnesota, Illinois, &c. It is the American species which is

perhaps most commonly cultivated in European gardens. Between this species and *H. kalmianum* there appears to be no very great choice as to ornamental value. The latter was originally found in the vicinity of Niagara Falls, and extends over the region about the Great Lakes, and within a few years it has been reported from Middle Tennessee. In its native habitat it varies in size from a few inches in height in exposed places to 2 feet or more in favourable situations. In cultivation it will grow about as large as *H. prolificum*, which attains a height of 3 feet or more. Both species are quite hardy. Perhaps *H. kalmianum* being found so far north would do best in localities where the winters are very severe. The leaves are narrow, 1 inch or 2 inches long, and the thin-petalled golden yellow flowers are about an inch across, and produced in single or compound clusters at the ends of the branches. The leaves of *H. prolificum* are usually larger, and the flowers more numerous, though somewhat smaller, than in *H. kalmianum*.

These two species and *H. aureum* have been grown together in the arboretum, and the seedlings produced from them have shown a tendency to variation, which seems very strongly to indicate hybridisation. This might result from the work of bees, which, in collecting the pollen, fly indiscriminately from one species to another. These plants do not seem to be very long lived, and though they may do well for eight or ten years or more, they should be renewed every six or seven years. Young plants from seed may begin to flower the second year if well grown. With a little trouble they may be propagated by cuttings, and in this way a particularly fine form might be best perpetuated.

H. DENSIFLORUM is closely related to *H. prolificum*, of which it was classed as a variety in Gray's "Manual." It is said to grow 5 feet or 6 feet high, and to have more numerous, though smaller flowers. *H. Buckleyi*, a rarer species, is found in the mountains of North Carolina and Georgia, and is described as a branching shrub about a foot in height with flowers about an inch across. These two species have not yet been grown at the arboretum. They will probably be quite hardy, but horticulturally not an improvement upon or more desirable than the species already cultivated. *H. fasciculatum*, a plant 3 feet to 6 feet in height, has extremely narrow leaves. It has not yet been tested thoroughly at the arboretum.—*Garden and Forest*.

The Californian Azalea at home.—Late in July I visited Austin Creek, a mountain stream that flows south into Russian River, Sonoma County, California, and which is for the most part overshadowed by a superb Redwood forest, that fills the narrow valley and clothes the sides of the adjacent mountains. A tree that was 38 feet in circumference and 310 feet high was felled in this region a few days ago. The bed of Austin Creek is from 50 feet to 100 feet wide, of fine white sand or hard grey gravel, over which the stream, which varies in width from 20 feet to 50 feet, meanders in a truly Californian fashion, first under one bank and then under the other. In winter, of course, it manages to fill the whole distance across. There is no wagon road on the banks to connect the summer logging-camps with each other; everyone drives in the bed of the stream itself, and so for 100 yards at a time the horses splash along on the hard white sand, through water from 6 inches to 3 feet in depth. The most conspicuous plant along six miles of this creek is the Azalea, still in fine bloom and for three months past. It shows but little from the top of the bank, but from the bottom as we passed it was seen in full glory. The bushes root low down, almost to the water's edge, in beds of drift and leaves caught by their own tangled branches. They are each from 6 feet to 12 feet high, in a few cases even taller, and the flowers vary in colour, some being almost white with only a dash of yellow in the throat, others having more of a creamy tint, with far more of a yellow blotch, and much deeper pink to the folded buds. The river Azaleas are at this season the chief flowers brought

into the camps for sale to the tourists and to be sent to the flower markets, but they are not easily found. The banks they grow upon are almost inaccessible from the top. At times they grow on ledges of rock rising in the middle of the stream, and in places that must be under water for weeks in December and January. A good many persons who live in the valleys dig up plants of the fine mountain Azalea and transfer them to the gardens, but with only scant success. One has to travel into the Redwood forests and search the river banks there to find Azaleas, and I do not think this species can be naturalised in ordinary garden soils. Shade and moisture are its requirements. It grows with the Alder and Willow, and with immense Ferns beside it, and Redwood boughs spreading out overhead. — CHARLES HOWARD SHINN, *Niles, California*.

The Cockspur Thorn (*Cratægus crus-galli*).—Among trees with richly coloured foliage at this season must be included this Thorn and its numerous varieties, which are worthy of note by reason of their brightly and variously coloured foliage. The Cockspur Thorn is certainly one of the most handsome of the North American species, and indeed one of the best of the Thorns. The common form generally makes a spreading tree about 10 feet or 12 feet high, clothed with ovate leaves of a rich shining green colour, very bright and cheerful when first expanded and against a background of which the flat corymbs of large white flowers stand out very conspicuous. This Thorn may be raised in quantity from seed, and, as is usually the case where great numbers are grown, there is a considerable amount of variation to be found among them. A couple of the larger bold-growing forms are ovalifolia and prunifolia, whose distinctive characters are indicated by their respective names. By far the most widely removed from the typical form is salicifolia or pyracanthifolia, the leaves of which are narrow, and the branches nearly destitute of the large spines from whence the name of Cockspur is derived. This last-named variety pushes out its long branches almost horizontally, so that if grafted standard high, as is usually done, it forms a wide-spreading head composed of tiers of branches one above the other. It is by no means of rapid growth, and is very useful for planting in confined spaces. There are a few well-developed specimens of this distinct variety in Brompton Cemetery, and though perhaps not the most suitable of trees for graveyard planting, still they are so different from most plants employed for the purpose, as to be sure to attract attention.—T.

Pyrus pinnatifida.—A very fine specimen of this, judging from an article by Mr. Goldring which appeared in THE GARDEN for June 11, 1887 (p. 544), in which he says the largest trees are only from 20 feet to 30 feet in height, is growing in the park here, and presents a truly glorious sight now, for the leaves are all turning to a rich orange-scarlet, and when the sun shines on them I can compare the effect to nothing short of a beautiful ruddy sunset. This tree is an isolated specimen, and the head is quite shapely, and in outline the form is that of a bell-glass. The branches at the base spread 42 feet, and the height by actual measurement is exactly the same. The bole, which is 8 feet in circumference at 3 feet from the ground, rises with a clean stem to about 7 feet in height, and then divides itself into ten main branches. Growing as it does at some distance from the carriage drive and in the vicinity of some Oaks, it might easily be mistaken for one of the latter in summer or winter, for the habit is very similar. Birds rob us of the fruit, but, as you will see by the branch which I enclose with this, we can well afford to lose them when we get such a glory of autumn leaves. You will see also by the wrinkled bark and the short annual growth made that the tree has reached its prime. I would like to urge on readers of THE GARDEN the advisability of planting fine and uncommon trees like this in good positions where the chance occurs, for though their full beauty may not be reached in an ordinary lifetime, posterity will have cause to be grateful to the planter. Young trees grow vigorously for

some years, but they do not take on the distinct and fine autumn tints of older specimens. Where there is a fruitful tree chance seedlings may often be found. Not far from the above-mentioned tree and in a prominent position stands another just as effective. This is a very large Weeping Elm, which must be at least 70 feet high, with a bole 13 feet in circumference at 5 feet from the ground, and a wide-spreading symmetrical head, the branches of which all have the true weeping character. These two are now the most conspicuous trees in the park. The park contains a variety of very beautiful trees, the coloured leaves of which will be effective for many weeks to come, as it is rather too early for the majority of them to be at their best.—J. C. TALLACK, *Livermere Park*.

THE HORSE CHESTNUTS.

THE Horse Chestnut is of little use as a timber tree, but from its highly ornamental qualities it may be employed in various ways by the planter. In the first place, as an isolated specimen, a large well-balanced tree forms a fine feature in lawn or park scenery, especially if just standing away from a background of other trees. Again, where space is ample, it may be planted in a clump or group, and is besides sometimes employed for avenues, of which the historic one at Bushey Park is of world-wide reputation. To be seen at its best, the Horse Chestnut needs a well-drained open loam, as very stiff soils are not so congenial to it, and where dry and gravelly, the foliage, even early in the summer, is liable to become discoloured, unless the roots are within reach of a reserve of moisture. The roots where undisturbed from the first go down to a greater depth than those of many other trees. There are several varieties of the Horse Chestnut, but most of them are curiosities, and, as trees, are not equal to the ordinary form. The best is the double-flowered, which, I believe, is of American origin, and for some time after its introduction to this country was regarded as an overrated subject; but within the last two or three years I have met with it in much better condition than previously, and can now understand the remarks of Mr. Barry, of Mount Hope Nurseries, Rochester, who says, "The double-flowering Horse Chestnut is justly admired for its elegant form and magnificent inflorescence. The absence of fruit, by which much litter is avoided, is an important argument in favour of its employment." My own notes concerning this variety reveal the fact that it is about a fortnight later in opening its blossoms than the ordinary kind, and consequently extends the blooming season, added to which, the double flowers retain their beauty longer than the single ones. The variegated-leaved varieties are usually seen at their best when in the propagator's hands, as under glass, or where otherwise protected, the markings are very beautiful, but where exposed to the full force of the July sun and drying winds, the leaves frequently become of a rusty hue. There is also a cut-leaved form, but little can be said in its favour. Another beautiful member of the Horse Chestnut family is the scarlet Chestnut (*Æsculus rubicunda*), which is later in flowering than the common kind, and is besides easily distinguished by its bright red blossoms. It is of dwarfer stature than the other, and forms a dense roundish tree, thickly clothed with very deep green foliage. *Æsculus rubicunda* succeeds best under much the same conditions as are requisite for the common kind, but its more compact habit enables it to resist heavy winds better, and being later in expanding, the flowers are not so liable to be injured by unfavourable weather. Besides the specific name of *rubicunda* it is also known under that of *carnea*, but the first-mentioned is certainly the most appropriate. There appears to be a considerable amount of doubt as to its native country or its origin. There are several forms in cultivation, varying principally in the colour of the blossoms, some having the flowers much more richly tinted than others. Apart from the other merits possessed by the scarlet Chestnut, it is also a good town tree, as may be often seen in the environs of London, for it is

one of those subjects that is rather extensively planted.—T., in *Field*.

The Lombardy Poplar as a hedge plant.—The Lombardy Poplar is rarely used as a hedge, but it makes both a pretty and useful one, as is well seen in the Pilrig Nurseries of Messrs. Dicksons and Co., Edinburgh, where it is used here and there amongst their large quarters of young fruit trees. It grows rapidly, bears cutting to any extent, and becomes very dense when grown in this way.—J. M.

Ceanothuses.—These are invariably seen growing on walls, where their beauty to a certain extent is somewhat hidden. The reason of this, no doubt, is because they are generally considered rather tender and susceptible to injury during a severe winter. But there is no reason whatever why they should not be grown in clumps in the open. I know of a grand mass of them growing in a garden in Hampshire, where they never fail to bloom profusely. Even if the growths are injured by severe frosts, a little judicious pruning in spring will soon put matters right, for in a good position they make rapid growth.—C. L.

New early blooming hybrid Rhododendrons.—It must not be supposed that the raising of new varieties of Rhododendrons is confined only to the famous Surrey nurseries. Messrs. Isaac Davies and Sons, nurserymen, of Ormskirk, have been very successful in raising many new varieties not only of the hardy type, but also hybrids suitable for greenhouse culture. One of these is *R. Queen of Dwarfs*, raised from *R. multiflorum* crossed with one of the best large-flowered hardy white varieties; it is of bushy habit and very free blooming. This was seen at one of the meetings of the Royal Botanical and Horticultural Society of Manchester in March, 1888, and awarded a first-class certificate of merit. The blossoms are snow white, large, of great substance, and very lasting. Specimens of this put out in the open ground at Ormskirk in the autumn of last year were uninjured during the winter. Another is *Celestial*, which bears pale bluish-coloured flowers, and is very free blooming. Another is *R. omniflorum*, and this bears dense trusses of white flowers in the greatest profusion.—R. D.

Abelia rupestris.—Among the many valuable plants introduced by Robert Fortune must be included this *Abelia*, which is especially noteworthy from the fact that its flowering season continues well into the autumn. Indeed it is now (October 1) still in great beauty on a wall. So treated it succeeds better in the neighbourhood of London than where planted in the open ground, though it by no means refuses to grow in such a position, and along the south and west of England it flourishes well without any shelter or protection, provided it is in a thoroughly drained spot. *A. rupestris* when in the open forms a graceful, but dense twiggy bush, with slender shoots and very pleasing shining green foliage. The sweet-scented tubular blossoms are borne in clusters on the point of every shoot, even the very smallest. The colour of the blossoms is a very delicate shade of pink. One purpose for which this *Abelia* is often employed is as a wall shrub, and so treated it will, of course, reach a much greater height than a specimen planted as an open bush. There are a few other species of *Abelia*, but this is the best of the hardy kinds, for the showiest of all, *A. floribunda*, a Mexican species, must be regarded as a greenhouse plant, though it may be induced to thrive in very favoured localities, and indeed around London will stand many winters treated as a wall shrub. It is never, however, seen to such advantage as when given the shelter of a greenhouse. In general appearance, as in geographical distribution, *A. floribunda* is very far removed from the others, for the beautiful rosy purple-coloured blossoms, which are borne in clusters on the points of the principal shoots, are tubular in shape, and each as much as a couple of inches long. Both of them can be struck from cuttings put in during the growing season.—T.

Berberis dulcis.—The note on this Barberry (GARDEN, Oct. 5, p. 309) brings to my mind a plant which I saw growing at the side and hanging over the

carriage drive at Morden Park, Mitcham. It was loaded with its bright red strings of fruit, and in this position it showed to advantage. In the spring the pale yellow blossoms are unusually attractive.—E. M.

ORCHIDS.

W. H. GOWER.

LÆLIA PERRINI AND ITS VARIETIES.

THE typical plant has been in cultivation for upwards of fifty years, and to commence a history of it and its varieties after half a century might appear a somewhat stupendous task, but this *Lælia* has not produced many varieties of note. True, the plant has been much neglected of late years, not from any want of brilliancy and richness in its flowers, but simply because it was an old plant, and because its blooms were so short-lived. This latter complaint means a great deal from an Orchid grower's point of view, and so *Lælia Perrini* passed out of favour. Some truth, too, lies in the statement as to its short-lived flowers, especially in the earlier days of Orchid growing when excessive heat was held to be necessary. Under such conditions the flowers were short-lived, and I have seen all the flowers on a plant open and fade in the course of one week. Even then the rich colour of its flowers could ill be spared at the particular season of the year at which they appear. Under the new system of cool treatment, however, the blooms, if the plant is grown cool and allowed to stand in the same house in which it is grown, last a considerable time longer, although under any circumstances I cannot exempt the flowers from their character of being somewhat short-lived. The species is robust and easily grown. The scape is from three to six-flowered, each bloom measuring some 5 inches across. The flower is rosy-purple saving the margin of the middle lobe of the lip, which is broadly bordered all round with rich purplish-crimson of an intense deep colour; indeed, we have nothing in the genus equal to it. It blooms through this month and the next.

L. PERRINI ALBA.—I have just received from Mr. Measures, of The Woodlands, Streatham, a flower of this plant; it is white as the driven snow in every part, saving a tinge of lemon-yellow in the throat, and certainly the whitest Orchid flower that I have ever seen; indeed, it appears to be quite surprising how this pure flower could come from the deep crimson-lipped typical plant. It appears to be equally as free growing as the old form. This, I think, is the only white-flowered variety at present known.

L. PERRINI NIVEA, also in the same collection, differs considerably; its sepals and petals are pure snow-white, whilst the whole front lobe is of a pinkish lilac; the throat pale lemon-yellow. This also is a very pretty variety, and it is very rare, but not unique, as in the case of the previously named variety.

This species after flowering requires the same treatment as I have lately had occasion to lay down for some *Cattleyas*, viz., being kept dormant and quite quiet until spring, and to attain this it must be kept cool and dry. I am not sure what amount of cool treatment this plant will withstand with impunity, but as it comes from the northern slopes of the Organ Mountains in Brazil, it is probable it will require about the same temperature as *Sophranitis grandiflora*. During its probation, however, it should be kept fairly dry, so that it may pass through the winter months without injury to its bulbs. In the spring immediately upon the slightest sign of roots appearing let the plant be repotted if it requires it. If repotting be not required, it will be much better for a top-dressing of new soil, which should be at once given,

some rough fibrous peat and chopped Sphagnum Moss being the most suitable material. This should be placed carefully round the plant and pressed firmly down, but without injuring the roots. I am a great advocate for firm potting, as the soil lasts sweet longer and the roots can work better in it. When the plant has started fairly into new growth it enjoys an abundance of sunlight, moisture, and air, and it should not be condemned to such shady odd corners as it sometimes is.

Pilumna nobilis.—"W. W." sends me a spike of four flowers of this beautiful Orchid for a name, asking if it is new. No, it is not new. But to me a fragrant plant like this, with its large pure white flowers, saving a blotch of orange in the lip, is a gem of the first water, well deserving every attention. The Orchid in question is a dwarf, but free-growing plant, easily managed, and it flowers freely. It should be grown in the cool house, and requires much the same treatment as *Odontoglossum Alexandræ*; the flowers are sufficiently large to be used singly for a coat flower, or for a lady's spray with a little Fern.—G.

Lælia Dayana.—This beautiful plant is just now very fine in various gardens, whilst the size of its flowers, their rich colouring, and the ease with which they may be produced should endear it to everyone. The plant was imported with *Lælia pumila* in the first instance by Messrs. Low, of Clapton, and some on this account named it a variety of that plant, but it is unquestionably distinct. The plant thrives well in the cool house, succeeding best on a block of wood, and its deep coloured flowers make a wonderful show. In some varieties which I see about, so deep and broad is the rich purple-magenta round the outer portion of the lip, that it appears to be almost black, contrasting beautifully with the lilac-mauve of the sepals and petals.—H.

Lælia amanda.—Beautiful flowers of this chaste and lovely species come to me from Mr. Williams at Holloway, where it is now blooming. It is known in gardens by the name of *Cattleya Rothschildiana*, but it is a true *Lælia*, and was so named by Prof. Reichenbach. In its habit of growth it resembles *Lælia elegans*, but its flowers are quite different from those of that plant. The lip is quite distinct, being more in the way of that of *Schilleriana*, which I contend has nothing whatever to do with *elegans*. *L. amanda* has terete stems 1 foot or more high, bearing a pair of leaves, thick and fleshy in texture and bright green. The flowers measure each about 6 inches across, the sepals and petals being soft rosy lilac; the middle lobe, almost white towards the apex, is rosy lilac, strongly marked with deep magenta veins and reticulations. It is a lovely species, and now when flowers are somewhat scarce it is very useful. It likes a strong heat when growing.—W.

SHORT NOTES.—ORCHIDS.

Cattleya Gaskelliana.—The Messrs. Low and Co. have still a fine lot of this beautiful autumn-flowering species, and amongst them some notable varieties. I am glad to see this plant continues to flower so late, and I also observe that the later importations yield more better forms than did some of those which came to hand in the first place.—G.

Lælia præstans.—What a handsome variety this is, especially as seen just now with Mr. Horsman, of Colchester. The plant is small, and the flowers, which are very large, are thick and fleshy in texture and intensely rich in colouring. This species thrives best on a block of wood or in a shallow basket. It requires plenty of warmth and moisture when growing.—W. H. G.

Vanda cærulea.—The fine blue flowers of this species are truly grand when seen in any quantity, and just now in Messrs. Low's nursery at Clapton this kind is flowering freely, and the blooms are of good colour. I have seen plants about in flower to which the name of *alba* would be more appropriate

than that of *cærulea*. The bad-coloured forms appear to have a strong constitution which nothing will kill, whilst the blue-flowered plants do not appear to live long or thrive well.—W. H. G.

Brassavola Digbyana.—"W. H. J." sends me a flower of this very singular and extraordinary plant. The colour of its leaves described by "W. H. J." is quite correct and natural to the plant, and the above is its name. I am quite aware this plant has been removed to *Bletia* by Reichenbach, and to *Lælia* by Bentham, but I shall still retain the name given to it by Lindley. I shall feel sorry to alter its name, although I am quite willing to admit a difference in growth to other members of the genus. Its flowers are very fragrant and the frilling of its lip very fine, but it sadly lacks colour.—G.

Pachystoma Thomsonianum.—Flowers of this gem come from Mr. Williams at Holloway. It is a plant I could wish was more frequently to be seen. It is a native of Western Africa, and has now been in our gardens some years, but it does not appear to either be known, or is it so scarce that it cannot be got? As a plant, it is not very effective when out of flower, but its blooms are so beautiful that there is no cultivator but would wish to add it to his collection. The pseudo-bulbs are small, attached to a creeping rhizome, and bear about a pair of thin membranous leaves, which, I think, fall away before flowers appear. The scape is erect and said to bear four flowers. I have never seen more than two, but these are large and very beautiful; the sepals and petals are of the purest white; the middle lobe is long and narrow, tongue-like and recurved, deep purplish-magenta, the base streaked with paler lines. This plant requires to be grown in the warmest house, and should be potted in good peat and Sphagnum. It should be well drained, as during the growing season copious waterings are necessary. I think if it could be kept sufficiently moist, it would, perhaps, thrive better upon a block of wood.—W. H. G.

Seedling Orchids.—Referring to Mr. Douglas's interesting remarks on this subject at page 293, it may be worthy of mention that the Messrs. Veitch and Sons have removed the entire stock of their seedlings and hybrids to Langley, where some admirably appointed low span-roofed houses have been erected for them, and which I recently noticed full of myriads of seedlings in diverse stages of growth. With respect to raising seedling Orchids, I found that the favoured soil for the seed, if the term may be used, is the Sphagnum covering to the roots of advanced plants growing in great quantities in various sized, but still chiefly small pots. In these positions the seed is found to germinate more freely, and the seedlings to be less subject to damping than when the seed is sown separately in pans or pots. Pricking out goes on in various stages, but chiefly after the seedlings have made two or three leaves. They are then carefully lifted from their Sphagnum bed and pricked out into other small pots, and from these again later singly into wonderfully tiny pots, some being about twice the size of a thimble. The seed as seen in a *Cattleya* pod, for example, is like a fine white powder, and existing in myriads. Perhaps not more than one-fourth germinates, perhaps a far smaller proportion. Crossing is constantly proceeding, that is, when conditions will allow, and it seems certain that the conditions essential to good fertilisation will be at Langley even more favourable than they have been at Chelsea. One of the great objects of Mr. Seden's ambition is to obtain a *Cypripedium* of fine quality, yet having a pure white flower. This *rara avis* will doubtless come in time, as nothing seems impossible to an expert hybridist.—A.

Sobralia sessilis.—The short time the individual flowers of *Sobralias* remain in beauty—usually but a single day—is their one great defect; nevertheless, their beauty and the freedom with which they are produced in a great measure compensate for that deficiency. A healthy and well-established plant of *S. macrantha*, for instance, will rarely be without flowers from May to July. *S. sessilis* is an

old species, known to botanists for half a century past, but still uncommon in gardens. It blooms from September to March, and its flowers are singularly chaste and beautiful. The sepals and petals are white with a faint tinge of rose, and the funnel-shaped lip is bright rose, deepening towards the base, the margin of the front lobe being wavy. The stems are from 1 foot to 2 feet high, and continue to grow and flower for several years, unlike those of *S. macrantha*, which flower for one season only. It is a native of British Guiana.

FERNS.

W. H. GOWER.

CHOICE PHEGOPTERIS.

THIS is a genus of Ferns belonging to the tribe Polypodium, and they have much the habit of *Lastrea*, but are destitute of an indusium, which, of course, separates them from that genus, whilst they differ from *Polypodium* in bearing the sori in the middle of the veins instead of on the end of the short free vein. There are a large number of species which are widely distributed in all parts of the globe. They, of course, vary more or less in the disposition of the distinguishing features; inasmuch as different authors have divided them into various genera, but here we will call them simply *Phegopteris*. There are some species which make large and strong growth of the most exquisite character. These, however, I shall leave until a future time, and here confine my remarks to a few of the smaller growing and choicer kinds which are especially ladies' Ferns, and which well deserve their care and attention. They are easily managed, requiring only good drainage and to be potted in a mixture of loam and peat, made sandy and liberally supplied with water, and all require the temperature of the warm house accompanied with a good amount of shade.

P. HASTÆFOLIA.—This is a pretty plant which grows about 9 inches or a little more in height; it has simply pinnate fronds which seldom reach 2 inches in breadth; the pinnae are produced in a distinct auricle on both edges at the base, and they decrease in size downwards; the texture is coriaceous, and the colour deep green.

P. JAMAICENSE.—This is an exceedingly pretty plant, which I have not seen for many years, neither can I find it recorded in any work to which I have access. The plant came from Mr. Wilson when he had charge of the Gardens in Jamaica. The fronds are from 9 inches to a foot long, the lower half being naked, stem villose, the frond itself somewhat triangular in outline, three times divided at the base, twice in the upper part, whilst the extreme apical portion is simply pinnate. It is an extremely elegant Fern, which grew with me into a very handsome plant, and I recommend it to the attention of all growers of Ferns.

P. DAREÆFORME.—An extremely handsome, but rare plant, which I imported from Sikkim with some Orchids some few years ago, fronds about a foot long, proceeding from a stout creeping rhizome, which is furnished with numerous chaffy, light brown scales. The fronds bear five or six pairs of branches, which are again divided about three times, the segments being obtuse and bifid, the texture is somewhat thin, and the colour a light, bright green. It is a superb plant, well deserving a place in every Fern house.

P. RUFESCENS.—This is also a pretty plant, but not so choice as the previously named kinds; it has a long naked stem, and bears a frond from 9 inches to a foot long, which is somewhat deltoid in outline, thin in texture, and lively green in colour. It comes from the Indian islands.

P. UNIDENTATA.—This is a large growing kind, but very distinct and rare, and specially interesting as being one of the Ferns which are peculiar to

the Sandwich Islands. The fronds are some 18 inches long, broad, and leafy; the segments broad and deep green, with a single sorus near the margin at the base of each lobe. It is a very beautiful species.

KITCHEN GARDEN.

FRENCH VARIETIES OF TURNIPS.

APPARENTLY a very different class of Turnips is cultivated in France than finds favour in this country, but, on the whole, it is doubtful if our neighbours can congratulate themselves upon the superiority of their varieties. The sorts are certainly distinct, and as far as my experience goes the quality is also excellent, but neither the shape of some nor the quality of others is satisfactory. There is one variety, however, that I can strongly recommend for general culture on this side of the Channel, this being the Long Forcing Parisian, or, as the French



Long White Meaux Turnip. (One-third natural size.)

catalogues have it, *Navet des Vertus Marteau*. This variety is very extensively sown for the earlier supplies in France, large quantities of it being annually imported into this country before home-grown Turnips are plentiful in our markets. As far as earliness is concerned, however, it is inferior to either Early Milan or Early Munich, and it is not so well adapted as the first named, especially for forcing in frames, but in point of quality it is very superior to either, and no other Turnip I have yet tried remains in a usable state so long after it is fully grown. I have previously described this Long White Vertus as much resembling a gigantic oval-shaped Radish, and it only remains to be added that it will in the future be sown here in company with the earliest round Turnips, and will form a capital succession to these. Another still longer-rooted variety, the Cowhorn, or Long White Meaux (see illustration), is not new to this country, but does not gain many

admirers. In shape this somewhat resembles large crooked roots of White Belgian Carrots, and more than half of the Turnip is above ground. This again proves of excellent quality, the very largest, or those 10 inches long and about 3 inches in diameter throughout the greater portion of the length, cooking admirably—one root being ample for a small family. We have become so accustomed to the clean round roots of the Snowball type that the Cowhorn shape does not please, but it is a profitable variety all the same and well worthy of a trial.

I failed to notice either of the foregoing among the exhibits of Messrs. Vilmorin-Andrieux et Cie at the Chiswick Vegetable Conference, but I was impressed with the appearance of the Yellow Finland Turnip shown by that firm. This variety is said to be very early, but of this I cannot write from experience, and will merely state that it is very distinct in appearance, being of medium size, rather flat, with a concave base, and a small mouse-tail-like tap-root. It has a very clear skin, and the samples shown were some of the cleanest looking Turnips I have seen this season. Another yellow-fleshed variety, the purple-top flat Montmagny, and which I have given a good trial this season, much resembles before it is drawn from the ground the very serviceable and deservedly popular Veitch's Red Globe, the principal difference consisting in the fact that the former has a yellow flesh, while the latter cooks white. The Montmagny is of excellent quality, and in all probability will prove as hardy as most other varieties.

W. I.

PARSLEY.

PRIOR to the holding of the recent vegetable conference, and when it was determined to invite collections of Parsley plants it was admitted that practically there were but too useful sorts, viz., the treble curled and the Fern-leaved or Moss curled. The treble curled is the most improved form of common Parsley. It has become such by constant selection and the development of that curled tendency which makes it so dear to gardeners, cooks, and the market growers. Constant selection has also apparently made this variety robust. Perhaps it may lack that evident roughness and coarseness found in those plants which, breaking out from the finest strains, show that Parsley was in early days a rough growing herb; but plenty of vigour is retained, as may be seen in plants having ample room, especially when dibbled out singly. I could find thousands of such plants now in our market fields almost like small specimen Ferns, some 15 inches over and full of the best curled leafage. That we have Parsley as treble curled as it can be seems to be the case. We have it robust enough, and it is almost as hardy as can be hoped for. Heavy showers, a succession of severe frosts, or a continuation of biting easterly winds are each sufficient to harm the hardiest of plants, and the sturdiest of Parsley cannot be expected to come out of such ordeals unharmed. But during the past few winters Parsley has suffered slightly; indeed, in this locality it is evident that it is as hardy as can well be expected. However, good Parsley is worth protecting from dangers of the kind referred to, and a hundred plants lifted carefully and laid in a frame will furnish in most private gardens ample store for use during hard weather. The chief want in relation to the favoured treble curled variety is found in deeper colour. Very hard selection is needed to get rid of the tendency on the part of the foliage to come shaded with a yellowish-green, a tendency which marks the very best strains, generally, in spite of care in selecting. But I do not think that selecting has been pushed far enough. Plants which show the deepest green leafage, allied to good treble curled character, even if but one in a thousand, should be lifted and be placed remote from all others to seed. The selector may also endeavour to fix habit of growth, as some strains, whilst still

showing first-rate curled form, are yet very uneven in habit. In selecting for depth of colour it is just possible that the light-hued tendency of colour may display itself for several generations, and a long time may elapse ere the desired end is obtained, but such achievements can only be secured by long and patient striving after the ideal. Certainly a big breadth of the existing finest curled Parsley offers an ample field in which to find excellent material for starting. The true Fern-leaved or Moss-curved Parsley presents deeper average hue than is found in the treble curled. In the Fern-leaved the edges of the foliage are serrated perhaps rather more deeply, and thus the peculiar Moss-like appearance which gives to this variety its designation is produced. The pinnæ or leaves also are smaller. There is, however, not the tendency to curl found in the other form, hence the undersides of the leaves are little exposed,

improve them, and yet in no way detract from robustness of habit, there will be no fear but that stocks of Parsley will remain healthy. I find the Fern-leaved variety to be as hardy as the other form. Some few years ago, when fungoid diseases seemed to be rampant amongst plants, Parsley suffered considerably, and many gardeners found it difficult to save their breadths. The worst seems now to have passed, as little complaint is heard on that score. Change of soil by sowing after other crops have occupied the ground for several years, also change of seed and sowing in the spring yearly to ensure for the plants the best of growing seasons, have helped to save our Parsleys from the disease, at any rate in this district. Seeds sown on a fine surface early in April will need thinning and cleaning during the summer and a fine crop will result for autumn and

blanched is to place it regularly in small quantities in a Mushroom house. It is strange that the broad-leaved Batavian will not sell in the market so easily as the green curled.—J. C. F.

TUBULAR FLOWER-HOLDERS.

At the exhibitions of the Royal Horticultural and Botanical Societies, various groups of cut flowers, arranged on a new principle, have attracted much attention. These groups are in the form of a cone or pyramid, and the peculiarity of them is that all is leaf and flower, the only evidence of a containing vessel being the edges of a flat plate, which appear here and there where not concealed by the border leaves of the group. It is clear that, except by the



Cut Flowers.

and the deeper green of the upper sides is preserved. The Fern-leaved form is very beautiful, and is greatly admired by all who see for the first time a good strain. Some plants of the variety shown last week at Chiswick elicited warm admiration not only for the beauty of the foliage, but for its colour and the even, compact habit of growth. The form, however, is difficult to preserve true. There seems to be a natural tendency on its part to run back, a tendency which can be checked only by constant seed selection. Specially good plants should only be saved for seed, the rest being destroyed, but, further, the seeding should take place far removed from the flowering of any other Parsley, as the common form will certainly affect the Fern-leaved variety harmfully. So long as by careful selection we can retain the finest properties of our present Parsleys, and perhaps

winter use. Where a sufficient area of ground is not at liberty in April, seed may be sown more thickly in a small bed, the plants being dibbled out a foot apart each way about the middle of June. Then the finest quality as well as the largest plants is obtained.

A. D.

SHORT NOTE.—KITCHEN.

Blanching Endive.—The remarks from "W. I. M." in THE GARDEN, Sept. 28, on this matter were well timed. I am pleased to bear testimony to the value of good blanched Endive for winter use, having had to provide a good salad every day in the year for eleven years. Endive playing a very important part. I agree with "W. I. M." that the best way to obtain it nice and crisp during the winter and well

use of soft plastic clay, it would not be possible to produce these effects in any ordinary vessel. But as clay is not without its inconveniences, a special kind of vessel has been invented by Mr. March in the form of a solid dome or hemisphere, in which are sunk numerous tubular orifices, upright in the centre and gradually diverging outwards till they approach the horizontal. This vessel rests on a separate plate of glass, terra-cotta, &c., of wide diameter and nearly flat, but capable of holding sufficient water to refresh the border leaves of the group, which form a distinct feature in this kind of decoration. The plate is sometimes placed on a flat circle of dark Utrecht velvet. Flowers and leaves inserted in the tubes take the exact incli-

nation desired, and the design can thus, as it were, be sketched out and studied as the work proceeds. This system gives the power of forming artistic groups, in which characteristic foliage takes a far greater part than is usually assigned to it in floral arrangements. In the case of wild flowers, for instance, Primroses, Bluebells, Digitalis, Campanulas, and others, according to season, are intermingled with Grasses, Ferns, Bramble, and other beautiful foliage which can be found in every hedgerow. For an aquatic group, Water Lilies are appropriately mixed with Forget-me-not, Rushes, Arrowhead, and other leaves of water plants, while stove and greenhouse flowers are appropriately treated with foliage which thrives in a warm temperature.

The smaller domes are best adapted to table decoration, as the flowers do not rise to an inconvenient height, but some of the tubular holders are made of large size for the display of massive subjects, such as Sunflowers, Pæonies, Hollyhocks, Hydrangeas, branches of flowering trees and shrubs, large Ferns, Rushes, and Pampas Grass. These are not easily arranged in ordinary vases, but placed in the wide and deep tubes of such flower-stands, they form striking decorative objects in the halls of country houses, or on drawing-room tables, having all the better effect for the irregularity of outline, which gives a bold character to the grouping.

The main and commendable idea of the invention is to avoid overcrowding, and to give to each spray of leaf or flower its separate and distinct meaning. This effect is seen in the accompanying illustration which shows one of these flower-holders filled with *Hyacinthus candicans*, *Bougainvillea*, *Canna*, Japanese *Anemone* and Ferns.

FRUIT GARDEN.

MANGOES.

PERMIT me to thank Mr. Maries, a brother plant collector, who was in Japan in 1877-8 when I was in Borneo and the Sulu Archipelago, where the Mango is presumably wild and extensively cultivated in even the poorest of native gardens. Many readers will scarcely recognise the value and importance of this fruit in tropical lands, as in India, Ceylon, the whole Indian Archipelago, and in Jamaica and other West Indian Islands where the fruit is naturalised in the utmost profusion. Wherever the climate suits this fruit it is extensively grown almost everywhere east and west, and the Mango orchard is as important as are the Apple orchards of Europe and America. Hence it will be seen how essential it is that residents in our tropical colonies should know something of these delicious fruits and of their culture and variations. No doubt the work which Mr. Maries has in preparation will enlighten many and be the means of extending our knowledge as well as the cultivation of these fruits. Not the least interesting suggestion in Mr. Maries' most instructive paper is that wherein he hopes that we may yet receive shipments of this most delectable fruit fresh from the orchards and gardens of India or Jamaica, or perchance from Singapore or Ceylon. It seems indeed most surprising to all Europeans who have ever eaten a ripe and perfect Mango in the Tropics that our great fruiterers and purveyors have not as yet really and thoroughly made any attempt to introduce Mangoes wholesale into Covent Garden. Now and then they are brought there, but as a rule unripe, or, what is almost worse, overripe, frequently decomposed, and of the detested "tow and turpentine" flavour so much abhorred by the refined connoisseur. Preserved whole in syrup even, like green ginger or Peaches, they would be a welcome addition to the most select of dessert fruits, and even if practical difficulties are many and hard

to overcome, why we cannot have jam or marmalade of Mangoes prepared for us by the cheap native or coolie labour of the Tropics is past all understanding. Pine-apples preserved whole in syrup, for example, and of good quality and flavour come to us in quantity from Singapore, and why juicy Mango is not sent to us in syrup I cannot understand. Not that the Mango is the only fruit of the Tropics worth importing to our markets in some form other than the inevitable chutney in which it is seldom absent from Anglo-Indian tables. There are dozens of other exquisite fruits familiar in the Tropics well worth bringing home, if not in a fresh state, then as preserved in some edible shape or form. Mr. Maries' paper is enough to make an old traveller's mouth water, even in this land of delicious Peaches and Pears.

A perfect Mango must be tasted fully and freely, but not gulped down too rudely and too quickly to be perfectly enjoyed. It is at once a blessing and a revelation to sit down calmly before a piled-up bamboo basket and eat the rosy-cheeked beauties one by one. All may be off the same tree—the same branch even—but so delicate is the flavour and so subtle the stages of perfect ripeness, that no two fruits will taste quite alike. All may be good, and yet there is ever the most charming variety present among these fruits. It is not at all easy to give any definite idea of a good Mango with a pen and ink; as a rule, however, you may consider it as a fruit resembling a more or less kidney-shaped Pear. The skin is soft like that of Nectarine, and has a rosy cheek "like a Katherine Pear on the side next the sun." Some are warted, others quite smooth. Now and then there is a bloom on the fruit when fresh, and some of the yellow-skinned sorts have ruddy freckles and veins running amongst them. The skin is but little tougher than that of a Pear, and inside the fruit is a Plum-like stone covered with radiating fibrous tissue, this, however, being nearly obliterated or suppressed in the best varieties. To those who have never tasted a Mango, its texture and flavour may best, perhaps, be likened to those of a Nectarine or a good Pear as perfectly blended together, with perhaps a slight dash of Pine-apple or Melon thrown in. As I have said, however, no two fruits are alike, and so sometimes you get a rich fruit like Pine-apple and Seckel Pear blended; then, again, there is the slight acidity of a good Peach, a full Grape-like aroma, and the texture of such a Pear as Louise Bonne of Jersey, while the next may be over-ripe Nectarine and Marie Louise. The best of the Mangoes are grafted on common seedling stocks, just as Apples are treated in Devonshire, but now and then a spontaneous seedling is found possessing superior qualities, and then the tree is carefully watched when its fruits ripen, as they often do, twice a year. As seen growing the Mango is a small, dense, round-headed, or slightly tapering cone-shaped evergreen tree. It reminds one of a vigorous and large-leaved Portugal Laurel, but when its new leaves appear they are of a fine deep reddish brown or crimson hue. The flowers are greenish on racemes or panicles, and the fruit is said to set best if the weather is dry just at the flowering period. Of the five or six hundred varieties of Mango known there are some weighing only a few ounces, while others are enormous, weighing several pounds each. The large, coarse, and more acidulous varieties are used in chutneys and in curries of various kinds, but the smaller kinds are, as a rule, the best flavoured as dessert fruits. Although long ago fruited in the stoves at Syon House, and, I believe, also at Kew, the Mango does not promise to lend itself to successful cultivation in our English gardens.

In conclusion, I most heartily thank Mr. Maries for his interesting paper, and hope that his interest in this fine fruit may result in its introduction to our markets either in its fresh and ripe state, or in some well-preserved condition. F. W. BURBIDGE.

Dublin.

Apples Hoary Morning and Hollandbury.—Will you be so kind as to inform me if those beautiful Apples Hoary Morning and Red Hollandbury are free croppers and desirable varieties to

cultivate, independently of their handsome appearance? They are seldom mentioned in lists of the best sorts, so I naturally conclude that what merits they possess are superseded by those of other sorts. The unique bloom-covered fruit of the first-mentioned sort is so exceedingly beautiful, that, unless a very shy bearer and inferior in quality, I almost wonder it is not more extensively cultivated. Among the comparatively new additions, I have heard Lady Henniker highly spoken of. Can you recommend it?—AMATEUR.

FLAVOUR IN PEACHES AND NECTARINES.

THE primary quality of all fruits is flavour, and the aim of the cultivator should be to bring this to its highest state of perfection. Experienced judges when dealing with dishes of fruit in a competition can generally decide as to the best flavoured dishes when they know the names of the varieties exhibited and can note the appearance of the fruit. Peaches are never well coloured unless they are freely exposed to sunshine when ripening. If they are ripened in the shade of the leaves, flavour falls off in proportion to the density of the shade. I have had to do with Peach trees both under glass and in the open air for upwards of thirty years, and can well remember the excellent fruit grown in more than one old Scotch garden over thirty years ago. The late Mr. Thos. Rivers had not introduced any new ones at that time, and as far as the Peaches are concerned we have a gain in variety, but none of them has surpassed or even equalled the splendid Noblesse and Grosse Mignonne we used to gather from the open walls in a cold district on the east coast of Scotland. The point in their culture that was considered most important was a well-prepared border for the roots, thinning and training the young wood during the growing period, and I have a lively recollection of the water from the laundry being applied to the trees regularly from the garden engine. It kept the leaves free from red spider. I will describe the culture of these Peach and Nectarine trees. The borders were well prepared by draining, and raising them up a foot or more above the surrounding level of the garden with good loam from the adjacent meadows. The borders, which had a gentle incline from the walls to the gravel paths running parallel with them at a distance of 10 feet or 12 feet, were all lightly cropped, but not nearer the trees than 3 feet. No manure whatever was needed with the turfy loam, as there was always sufficient nutriment in the decaying roots of the Grasses without causing the young wood to become over gross. In fact, this is a matter of considerable importance, for if the border is so rich that the shoots grow too vigorously, the wood does not ripen well, and canker may follow a wet season. Enough young wood was laid in during the summer for next season. In February or March all the trees were unnailed from base to summit and thoroughly cleaned. The young growths were regularly distributed over the wall, and it was always easier to err on the side of laying in too many shoots than too few. The system of protecting the blossoms from frost was an excellent one, and usually the means of saving the crop. The top of the walls was finished off with coping stones projecting about 2 inches; on the top of these was fixed a series of boards on hinges, which were not visible from the ground, but could be turned over to project over the walls from 6 inches to 9 inches on frosty nights. Against the walls stout poles were laid, with their base 2 feet to 3 feet from the bottom of the wall, and the tops were nailed to the wall immediately under the coping stone. Screens of scrim were prepared by stout webbing being bound firmly round the top and bottom. One side was nailed to the top of the wall and could be easily let down when frosts were apprehended. It was a great point to use neither the wooden coping nor the protecting material unless they were really needed. When the fruit is well set, the fight with the elements is over, and thinning out is a necessary part of the culture. One Peach to each square foot of wall surface is enough, and all the surplus fruit ought to be removed before the stoning period. Some persons say, "leave a double quantity until

the stoning period is over," as there is danger of a portion dropping off in the process of stoning, but only inferior fruits in which the stones are imperfect drop off, or where the trees are overcropped. If the leaves are kept free from insect pests and mildew, the young growing shoots nailed in to the wall and not allowed to dangle in front of the fruit, large well-flavoured fruit may be obtained the best part of the season.

The same cultural requirements hold good with trees cultivated under glass, whether they are planted out or grown in pots. Each system of culture finds advocates. Abundant supplies of water are necessary up to the first appearance of the fruit ripening, but a medium degree of moisture only must be maintained when the fruit is ripening off, and if the trees get too little even more injury may be caused. A man must be very enthusiastic who produces fruit of the largest size and of first class flavour from pot trees. Free exposure to the sun is absolutely necessary; no shade of any kind should be used. A good deal of labour is involved in pinching and thinning out the shoots on pot trees, but not more than in tying in and attending to trees during the summer in a Peach house.

J. DOUGLAS.

WORK IN FRUIT HOUSES.

ORCHARD HOUSE.

WITH the exception of a few late Plums and Pears, the whole of the trees still remaining in this house will now be clear of fruit, and the season having been so favourable for ripening the wood, they should be fit for removal to the open air. A few years back the majority of growers packed their trees together and wintered them under cover; then by degrees it became the fashion, and a sensible fashion, too, to give them a four months' run in the open air, where, being perfectly hardy, they now have the full benefit of rain, frost, and, most important of all, plenty of water. Plums, Cherries, Pears, and Peaches which have ripened their wood under glass will stand any reasonable amount of frost, that is, so long as they remain dormant; hence the advisability of giving them the fullest exposure to all the elements save piercing north and east winds. Their natural enemies being birds and worms, it is important that the ground upon which they are to stand be made firm and impervious to the passage of the latter; whilst the birds must be kept out by means of small-meshed nets cast over the heads before the buds commence swelling. When placed in position, the spaces between the pots should be packed with Fern or litter to keep out frost and drought, and, provided the balls at that time are thoroughly moist, they will take little harm through the winter. Chrysanthemums, as a matter of course, will crowd the orchard house to overflowing, especially if fire-heat can be applied to prevent the flowers from damping. No one objects to the arrangement by means of which two blades are grown where formerly there grew but one, but this being the most opportune season for painting and repairs, no plant should go in until this work is finished.

Potting.—Late trees may still be reduced by paring down, picking out or washing, and re-potting into fresh compost. The operation might have been performed a month earlier, but considering that they will not be forced, roots being plentiful, they will fruit well after very severe handling. Young trees root-lifted last autumn, pinched, and specially prepared for potting up, may now be taken up and placed in pots varying from 8 inches to 10 inches in diameter. All stone fruits and Pears like sound, fairly heavy calcareous loam, and the quantity being limited, it should be well fortified by means of burnt earth, old lime rubble or hair plaster, crushed bones, soot, and the like in preference to animal manure of any kind. These trees, wet at the root when lifted, cannot be made too firm by ramming, and the sap being hardly down, they should receive one good watering prior to plunging.

Figs

are the only trees which should be kept in the orchard house, and being liable to injury where

fire-heat cannot be applied in very severe weather, they may be stored away at the driest end and completely covered with dry Fern when all the leaves have fallen. In this position, being well packed, they may be left for four months without water, but in the event of the whole house being required for plants needing a temperature ranging from 40° to temperate, the Figs will winter equally well in a frost-proof shed or cellar.

STRAWBERRIES.

As the Strawberry almost invariably gives the first ripe fruit, many people, under the impression that time might be gained by keeping them moderately comfortable through the winter, stored the whole of them away in the orchard house not later than the end of October. No greater mistake could have been made, as, independently of the fact that plants exposed to cutting draughts must have water, the gentle excitement was unfavourable to a vigorous bloom and perfect fertilisation. The best place for these plants is right out in the open air with their companions the Peaches, the Pears, and Plums, and, provided they are well plunged, frost and snow will not hurt them, neither will the rims of the pots suffer.

THE PLUM HOUSE.

If Golden Drops are still hanging, they must be kept extra dry and in an even temperature ranging from 40° to 50°, for if damp once settles in the stalk basin of the fruit no after attention will prevent decomposition. If these conditions cannot be maintained, the residue of the crop had better be gathered, as thoroughly ripened Golden Drops will keep for some time in a dry Grape or store room provided they are carefully folded in silver paper. When all the trees are clear no time should be lost in getting the balls fairly moistened prior to potting, an operation not unfrequently overdone at this late season. A 14-inch pot is quite large enough for the ordinary run of trees, and roots being of more importance than masses of unoccupied compost, this section often best responds to the old-fashioned system of top-dressing with calcareous loam, a little very rotten manure, and a dash of bone-dust. All composts containing bones and other highly concentrated stimulants improve with age; hence the importance of making them up some time before they are wanted. Assuming, then, that a good batch has been left over from the general September potting, with a sharp-pointed iron pin a foot in length pick out a good quantity of the old soil, working down 6 inches or more round the insides of the pots, replace with the new, ramming firmly, and when all is finished give one good soaking of water. The trees need not be kept in the house, indeed they will be best in the open air, and considering that they will not require forcing, new roots will be active by the time they are taken in again.

CUCUMBERS.

If the last set of winter plants, potted some time ago, is still occupying temporary quarters in compartments now filling rapidly, no time should be lost in getting them settled where they are to remain through the winter. Very late Melons often stop the way, but these, ripened without the aid of sun, are of little value; hence the advisability of sacrificing them to make room for the Cucumbers. A sharp sweet bottom-heat of 80° from fermenting leaves will soon help the latest plants forward, and assuming that the fruit will not be wanted before February, they must be kept growing without stopping until they have covered two-thirds of the trellis. They will require plenty of water at a temperature equal to, or a little higher than that of the bed, and the floors and walls must be regularly damped to do away with the necessity for direct syringing. If started in pots not more than two-thirds full of soil, thin layers of light rich turfy compost may be added as the roots appear on the surface. Solid manure must be avoided, and liquid will hardly be needed, as no greater mistake can be made than getting the main leaves too large and gross on the edge of winter. Keep the glass perfectly clean and the plants free from insects, and, if practicable, cover at night to economise fuel.

Plants now in bearing will take weak warm liquid at every watering, and the roots being confined to pots or very narrow pits, they must be top-dressed with light rich turf, a dash of bone-dust, and plenty of rough lime rubble or hair plaster. If the trellis is movable, it should be lowered occasionally to prevent the foliage from touching the glass, and, space being plentiful, growth must not be checked by too close stopping. Extra strong laterals, of course, must be pinched to maintain the proper balance, and some laterals which have borne fruit may be cut away by degrees to make room for a thin and even spread of foliage. As Cucumbers through November and December are of little value, the plants should not be over-cropped, especially if they are expected to be of use in January and February. Reduce the male blossoms to a few, as they weaken the plants; fertilise on fine days, and cut when the fruits are three parts grown, a Cucumber a foot in length being ample for ordinary use in winter.

PINES.

A general reduction all round, not only in heat, but also in moisture, will now be necessary. The early starters now resting will hardly require any more water; but excessive drought at the roots being baneful, the tan or leaves may be mounded round the pots to keep the roots in a happy medium. The top-heat through October may range from 56° to 60° by night, 70° by day, and somewhat lower through November, 75° to 70° being a fair bottom-heat for keeping the numerous white roots in good condition. Should sharp frost set in, cover if possible to economise firing, and at the same time to prevent radiation, be satisfied with a still lower temperature through the hours of darkness, and ventilate on fine sunny days to prevent the heat from getting above 70°. The general stock of fruiterers intended to make a growth before they throw up may be kept somewhat more freely supplied with atmospheric moisture by damping the walls and floors on fine days with tepid water, but rest must be secured by allowing the mean temperature to range low, giving and taking according to the state of the weather.

Successions.—Young plants thoroughly recovered from the last potting and making roots must be kept steadily progressing, not so much by a high air temperature as by keeping the bottom-heat moist and steady. Evaporating pans moderately charged with weak liquid in some pits are of great use, but in others naturally moist they may be dispensed with altogether, daily damping with the syringe being quite ample through the dead months now before us. If intended to continue their growth quite through the winter, close compact pits, in which heat and moisture can be maintained, will answer better than larger houses, the only advantage in these being a little more light. Span-roofed pits running from north to south, however, answer best, as the plants close to the glass get every ray of light and sun, and being low and sheltered, outside covering, a great economiser of fuel, can be placed over them through the night.

Late and winter-fruiting plants, the weather continuing mild and open, may be kept about 70° at night, and 80° when gleams of sun help the fires through the day. These plants will not now require frequent watering, but when they do they must have liberal supplies of warm diluted liquid, soot, and guano water alternately, the atmosphere being kept moist by the use of the syringe and damping down on fine days. As few growers now devote more than one compartment to late fruiterers, Pines in various stages of growth often stand side by side, and those approaching the ripening stage being so easily injured by stagnant moisture, they should be removed to a drier place to finish off, when they may be cut and suspended in the Grape or dry store-room until wanted for use. Good sound Cayennes and Rothschilds, and also Jamaicas, the three best winter Pines, will keep from three to five weeks after they are cut, and sometimes a little longer upon the plants in a dry temperate house.

Soils.—If not already secured, the stock of turf for use another year should now be cut and stacked, and stacks made last month, but left open to benefit

by exposure to the elements, should be covered to protect them from chilling rain. Almost any free sandy loam of good quality, if properly managed and corrected, will grow good Pines. In some places they grow as freely as Cabbages; in others they require great care. The constituents of the soil, also the water, no doubt make all the difference; but, independently of these, the best of turf must be properly selected and protected, otherwise it will not produce the best results. Those who have difficulties to contend with should cut and roll their turf as for a lawn, pack the coils in long narrow ridges—say 2 feet to 3 feet in width—thatch the tops, and leave the sides open throughout the winter. The fresh frosty air will then pass completely through the stacks, worms and the larvæ of insects will perish, and the whole mass, commencing at one end, will chop down in the finest condition for use, no matter how wet the winter. Very light sandy soils may be stacked *en bloc*, but unless cut when quite dry and protected from the elements, the fibre soon perishes, and the inner part, from which the air is excluded, cuts down sour and pasty, and requires drying and pulverising before it is fit for use amongst Pines. The usual correctives are peat, charcoal, lime rubble, hair plaster, burnt clay, bone dust, finely broken brick or oyster shells, and when very heavy and clayey, a liberal admixture of good Wheat or Oat straw cut quite short in the chaff machine. When a quantity of this hard clean chaff is added to poor heavy turf it at once renders it pervious to the passage of air and water, and, containing silica, it supplies an important element of food to the growing plants. Many soils require strong fertilisers, including bone-dust and Thomson's manure, or other favourite preparations, and when very poor a liberal admixture of thoroughly decomposed animal manure. The latter, not unfrequently in thin layers, is piled up with the loam; but this is not a good plan, as the gardener, in his multifarious uses for fresh loam, does not always find a certain percentage of rotten manure acceptable to the plants he wishes to treat to new compost. The whole of the materials I have named are used by one or other when potting Pines and other plants, not necessarily in any one batch of compost, but being useful as fertilisers, correctives, or absorbents, they should be kept in stock ready for use when wanted.

THE GRAPE ROOM.

If this structure has not undergone the annual cleansing, no time should be lost in getting it put into storing condition. The bulk of the winter Grapes, it is quite true, will not be cut before Christmas, but in not a few places the relics of the crops of Hamburgs and other thin-skinned Grapes keep quite as well, if not better, in the Grape room as they do upon the Vines. Here, then, is a very good use for the Grape room, as the clearance of a few bunches often saves fuel, if it does not set large houses at liberty for other occupants. This, however, is not the only valuable use, as those who adopt the sensible method of storing their Apples in cool, not over-dry and airy rooms, and having choice Pears to ripen, can testify. Apples and Pears not unfrequently are joint occupants of the same store-room, but, provided it suits the Pears, it is too warm for the Apples; or, suiting the Apples, it is too cold and possibly too damp to bring out the full flavour of the Pears. Very late Pears, of course, may graduate in the Apple store, but they should not remain there to ripen, whilst varieties which come in before Christmas should not enter the Apple room at all. These, then, should be conveyed from the trees to the room which can be warmed and ventilated at pleasure, when later sorts which it may be advantageous to retard can be transferred a fortnight or three weeks before they are expected to ripen.

W. C.

Cordon Pears under glass.—In the Peach house at Drumlairg, which is span-roofed, 500 feet in length and 18 feet in width, two or three dozen cordon Pear trees have been planted, and when I saw them lately they were bearing a crop of the finest Pears I have ever seen. The trees are planted on each side about 2 feet from each other and

trained to the top of the house on the one-stem system. The varieties are of the best, and all are fruiting with a freedom which it is impossible to secure with orchard or pot trees. Beurré Diel was carrying 40 finely developed fruits, and this was the average crop on all the others. The fruit both in size and quality is vastly superior to any that can be obtained in Scotland in the open air, and I feel sure that if the system of growing cordon Pears under glass were adopted, far finer specimens of this luscious fruit could be had than it is possible to obtain either from standards in pots or trees of any kind in the open. Mr. Thomson assured me that the trees never missed a crop, every fruit became fit for the table, and he had no trouble in getting them to the highest state of perfection. Apart from this, this mode of culture might be most profitably practised by all, more especially by those who have to work under climatic disadvantages that prevent them from securing Pears of the highest quality. Winter Nelis is regarded by Mr. Thomson as the best of all winter Pears.—CAMBRIAN.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

— There are but very few places indeed where Peaches can be successfully grown without glass protection, not even by glass copings. I could not keep the trees alive on the open walls, so I covered part of the long Peach wall, and the trees the first season improved so much that the remainder of the wall was covered and heated throughout. Since the trees recovered I have had an excellent supply of fine fruit during the last twelve years. Some years ago I used to grow some good fruit both of the Peach and Nectarine on walls at the home farm and other small farms on the estate, but of late years the seasons have been so changeable that I have given it up and covered the walls with Pears. Several of my neighbours who are rather more favoured as regards aspect grow them, but considering the time the trees take and the catch crop of indifferent quality, I do not think they are worth the trouble. I consider the following six are the best for quality and to give a succession: Hale's Early, Grosse Mignonne, Noblesse, Royal George, Violette Hâtive, and Barrington. The best Nectarines, which are more in demand with me than Peaches, are Lord Napier, Humboldt, Pine-apple (the best Nectarine grown), Elruge, Violette Hâtive, and Victoria. The new introductions and early kinds are not to be compared with several of our old kinds; but where very early dishes of Peaches must be had, the early varieties sent out within the last few years are most acceptable, as they come in from a week to eighteen days before older varieties under the same conditions. Stocks vary very much on different soils, but I think the Almond and Brompton Plum stocks are the most lasting; but if I were going to plant a long range of Peach houses or Peach walls with permanent trees and supernumeraries, I should much prefer the seedling Peach stock and whip-grafting for the supernumeraries, as the trees come away so freely and thrive well for a few years.—A. EVANS, *Lythe Hill, Haslemere.*

— The best Peaches for flavour are Royal George, Violette Hâtive, Dr. Hogg, Barrington,

Crimson Galande, Princess of Wales, Grosse Mignonne, Noblesse, Late Admirable. I think the chief cause of the inferior flavour of market Peaches is that the fruits are gathered too soon. Another cause is overcropping the trees. With regard to the stock that gives the healthiest tree, I do not know of more than one kind of Plum that is used as a stock for Peaches and Nectarines, but trees that have come under my notice during the last thirty years appear to be all on the same kind of stock, and I think the disease and canker we see and hear so much of are caused by the trees being planted in too rich and unsuitable soil. Peach culture outdoors is fairly successful in this district where there are good walls with south aspect and the borders have been properly made. We have trees here that have only missed cropping once during the last twenty years.—C. FOWLER, *Barrow Hill, Henfield, Sussex.*

— Peaches, also Nectarines, have been exceptionally good indoors, fruit large, with good colour and flavour. Grosse Mignonne, Royal George, and Noblesse are our best flavoured Peaches. Lord Napier, Elruge, and Violette Hâtive our best Nectarines. I have not tested the newer sorts sufficiently to say whether they are an advance in the matter of flavour on the old sorts. We have the above varieties and others, such as Teton de Venus, Barrington, Violette Hâtive, Condor, &c., growing out of doors, all of which never fail to ripen a good crop. Even last year they all ripened, with the exception of Salway, which had to be finished off in baskets in a warminery, a plan that does not improve the flavour. The want of flavour is through gathering the fruit before it is properly ripened. It is almost a necessity to gather thus, as the fruits often have to be packed and sent a long distance, and probably remain several days before being sold to the consumer. Outdoor Peach culture here on a south wall is very successful, as our trees have never failed to ripen a fair crop for years past. The only protection the trees get is a wooden coping about 18 inches wide put on when they come into flower, with a double net hung down in front and left on till the nights get warm and the cold winds are gone.—W. M. ALEXANDER, *Poles Gardens, Ware, Herts.*

— As to flavour in Peaches, much depends on the circumstances and conditions under which the trees are grown; for example, some sorts only reach perfection when protected by glass, but, assuming the conditions are suitable, I should select the following as the best flavoured: Noblesse, Alexander, Early Louise, Violette Hâtive, Royal George, Dr. Hogg, Sea Eagle, Barrington, Bellegarde, and Walburton Admirable. As to the flavour of new kinds, I have seen and tasted many, but I cannot say that any of them are equal to those in the foregoing list. I think there can be little doubt that the want of flavour in Peaches sent to our markets is in a large measure due to the fruits having to be gathered before they are quite ripe. This with fruits sold in the open market is obviously a necessity. The Mussel Plum is, I think, the best stock for Peaches, although there are kinds which thrive best on Mignonne, but the Mussel gives the healthiest trees generally. The stock most partial to disease I find to be the Almond, apparently through its inability to stand severe weather. Disease and canker are generally caused by wrong systems of cultivation more than through any particular stock. Peaches succeed admirably outside (on walls, of course) in this district, and in some places near the chalk formation some varieties, more especially Royal George, Bellegarde, and Violette Hâtive, do extra well.—FRANK ROSS, *Pendell Court, Bletchingley.*

— The best Peaches for flavour are Royal George, Bellegarde, Grosse Mignonne, Walburton Admirable, Alexander, Early Beatrice, Early Louise are valuable additions in point of earliness, but for flavour are not to be compared with the older varieties. All the trees here are worked on the Mussel stock with the best results. For outdoor culture we have many drawbacks, being situated in a very low-lying, damp district, and consequently liable to very severe late spring frosts, but

with care in keeping the wood judiciously thinned in order to thoroughly mature it and protecting the trees when in bloom we have fair average crops in most seasons.—THOS. JONES, *Elvetham Park, Winchfield, Hants.*

— I will only speak of Peaches in our own garden. Trees of such sorts as Noblesse, Barrington, Royal George, &c., grew freely, but the fruit was flavourless. I took every tree up, and have planted in their places the more recently introduced American varieties, as Hale's Early and Waterloo. As the fruits ripen earlier than those of most of our English kinds, and when ripe are of good flavour, they should be largely grown.—H. SHOESMITH, *Shirley Cottage, Croydon.*

— I have a good many sorts of Peaches out of doors, but there are only three varieties that bear at all well, viz., Royal George, Diamond, and Alexandra Noblesse; they are all worked on the Mussel stock, and though, as a rule, they make plenty of growth, all the varieties (with the above exceptions) do not seem to ripen their wood sufficiently, and then the first severe frost cuts it back. It cannot, therefore, be said that outdoor culture in this district is at all successful.—A. HORSELL, *Womersley Park, Guildford, Surrey.*

— The finest flavoured Peach is Grosse Mignonne, and of later Peaches Golden Eagle is most remarkable for its flavour, colour, and lateness. I wonder much that no one makes mention of it. Alexander and Hale's Early are the two best early kinds with us. Alexandra Noblesse and Grosse Mignonne the best midseason fruits, and Late Admirable and Golden Eagle the finest and best flavoured late sorts. We have tried many others, both old and new, but are satisfied that under glass, as we grow our Peaches, these are the finest flavoured and most worth growing.—E. H. WOODALL, *Scarborough.*

— The best flavoured Peach grown here is Alexandra Noblesse; next to it in merit come Grosse Mignonne, Bellegarde, Royal George, Alexander, and Golden Eagle. Alexander is the best early variety and also the best of the newer kinds, being deliciously flavoured, very free bearing, and brilliant in colour. Golden Eagle is an excellent late variety, and when grown on a wall of very good flavour. I find Royal George (which never mildews here), Grosse Mignonne, Bellegarde, and Golden Eagle all certain croppers in all seasons on walls with no coping or protection of any sort. The garden is exposed in a bleak county near the sea.—E. AMES-LYDE, *Thornham, King's Lynn.*

— I do not grow a great many Peaches on walls, but such as I have are making healthy growth and the crop is good. I place Grosse Mignonne first for flavour and for everything else. It is a midseason Peach, but one of the best for forcing. Bellegarde is a little later, takes a better colour, and if it is not quite so good as Grosse Mignonne, it is next to it. Noblesse is also a most excellent variety for flavour, but the fruit is pale and more easily injured. We had room for three Peaches only in our Peach house and I planted the above. The best of the very early Peaches is Alexander. Hale's Early is the next to succeed it. They are both American introductions and a credit to their raisers. Walburton Admirable is the best Peach both for flavour and appearance to succeed Bellegarde, but it is a shy bearer, even as a pot tree in the orchard house. I have grown most of the new Peaches, but none of them are so good in flavour as the old varieties. The cause of inferior flavour in market Peaches is doubtless owing to the fruit being gathered before it is quite ripe. To have Peaches in the best possible condition as regards flavour, they should part from the tree with the slightest touch, but it would not be possible to send such fruit to market. Out-of-door culture is successful, but the trees should be grown on a good south wall and have a well drained and properly prepared border to root into. I have seen Peaches and Nectarines a failure in one garden, and in another they were most successful. The whole thing hinges on the method of culture. The borders for the roots should not be cropped, or at least very lightly, with small salads or such things as dwarf

Kidney Beans. The roots require to be mulched with decayed manure and freely watered in hot, very dry weather. Information is not specially invited upon Nectarines, but it is a pleasure to say that whereas the old Peaches, some of which have been in cultivation upwards of 200 years, easily beat the recent introductions, the new Nectarines fairly beat the old ones. Lord Napier is not first-class as regards flavour, but it is the earliest large fruit, and none of the old early varieties can at all compare with it. Stanwick Elruge I grow to succeed it; this is a high coloured Nectarine of excellent flavour. Pine-apple comes next in succession. They were all three raised in the Sawbridgeworth Nurseries by Mr. Rivers, and if I were confined to three Nectarines these would be the ones. Violette Hâtive should be in a collection of six varieties. Humboldt is one that ought also to be in a collection of six, and to finish the season Victoria should be selected; the fruit has a tendency to crack if the tree is planted out of doors, but when the roots can be controlled under glass the quality is excellent.—J. DOUGLAS, *Great Gearies, Ilford.*

— I have tried few of the new kinds, preferring old varieties such as Royal George, Barrington, Violette Hâtive, Grosse Mignonne, Galande, Noblesse, Late Admirable, Walburton Admirable, &c. As to flavour, the Peach will stand any amount of light with good ventilation, and the best flavoured fruits I have grown have been produced about 18 inches from the glass, and flavour decreases in proportion to want of exposure to sun and distance from the glass. As to market Peaches, I believe from their appearance that quantities of the trees are grown in pits or in orchard houses where they generally are packed thickly and have no chance of being thoroughly exposed to the sun. The air should also be kept drier after the fruits begin to ripen, the syringe only being used to keep down red spider. As to the stock, I have just cut out some trees that have been worked on the Mussel Plum, and that have had heavy crops for the last thirty or forty years. For future healthy growth more depends on the perfect union of the bud and stock, that both may swell away evenly afterwards than anything else; given these conditions, trees on the old Mussel stock with suitable soil and proper attention will keep healthy for a generation. Outdoor cultivation here is a failure, as the wood rarely ripens to give lasting satisfaction.—A. MCKAY, *Woburn Abbey, Bedford.*

— Peaches are not much grown outside in this county, and then only in warm, sheltered gardens, the late spring frost generally injuring the most prominent fruit buds, if they even escape from the frost with a slight covering of Spruce Fir boughs. Should the trees escape the frost, we almost always get two or three weeks of that killing east wind that blisters all the leaves. Even if we get a good sunny season the fruits are but small, and nothing like what I have seen grown outside in the south of this country. Some of the best Peaches for flavour I find to be Royal George, A Bec, Grosse Mignonne, Dymond, and Noblesse. Among the newer sorts I am very fond of Alexander. It has a good constitution, bears well, carries a good colour, and is of very good flavour. The Nectarine Peach is a capital Peach for hanging on the tree after it is fully ripe, and when well exposed to the sun colours very well and is of much better flavour than some of our latest sorts. Barrington, another good one under glass, bears well, but, like many of the large fruiting kinds, is not of first-class flavour. Bellegarde I have met with in this county as often almost as Royal George, and it is a good all-round Peach, carrying such a fine colour, flavour very good, and the tree of a robust constitution. Violette Hâtive and Goshawk I have found to do about as well as any outside, and I intend to give Goshawk a fair trial inside, thinking it will prove good in flavour. Bad flavour in market Peaches, no doubt, is chiefly caused by the fruit nearly always being picked before being fully ripe. Another cause, I often think, is from the trees getting too much water at the ripening stage of the fruits to cause the latter to swell up to their fullest size. For a

stock for Peaches there is, I think, nothing better than the Mussel Plum, the shiny-leaved variety. There are many kinds of Mussel Plum stocks. The ordinary one throws up a lot of suckers, and some of them are thick in the bark and seem to get too hard, almost like boxwood. The Peach being of a soft nature, the stock does not swell so fast as the Peach, and thus is caused the bulging over at the union. At the same time, we have several kinds of Peaches and Nectarines that do not like the Mussel Plum stock, let it be ever so good in quality, such as the Bellegarde and Grosse Mignonne tribe. For these the true Brompton Plum stock should be used. The Peach will do well on the Almond stock, but it seems too tender in this country and subject to canker, but, no doubt, would suit a warmer climate and make wonderful growth.—J. LAMBERT, *Onslow Hall, Shrewsbury.*

— The best Peaches for flavour are Noblesse and Royal George, and the cause of inferior flavour in market Peaches is, that the fruits are picked too soon from the trees. Our trees are all on Brompton Plum stock and are healthy and fruitful. I picked about twenty dozen fruits from one tree of Royal George this season. Outdoor culture in our district is limited. I saw a healthy wall of outdoor Peaches at Mr. R. Hopkins' gardens, Tidmarsh, 3 miles from here; aspect south-west, the position low.—R. MAHER, *Yattendon Court, Newbury, Berks.*

— Regarding your questions on Peaches, the best Peaches for flavour are Royal George and Noblesse. As regards flavour, the reason for its poorness is, I think, because too little light and air are given. Expose the fruit well to the sun, with a dry warm atmosphere night and day. Liquid manure applied to the roots of the trees after the fruits have commenced to colour also tends to spoil the flavour. The outdoor Peaches here are a failure, but the trees are very old and the border completely worn out. My experience and observations elsewhere are that where the borders are good and the trees in good condition, good Peaches can be grown.—J. JEFFREY, *Caversham Park, Reading.*

— The editorial queries on the above subject are very much to the point, and if each separate query is thoroughly answered, much valuable information should be obtained respecting the culture of outdoor Peaches. Peaches do very well with us here, a good average crop being secured every season with little expense, this last being the result of a movable board coping that we had to place on the top of the wall and an occasional piece of new fish netting for the spring covering. In noting the questions in their order I may remark that with very few exceptions the newer varieties of Peaches are not up to a high standard of flavour, the best from this point of view being such old sorts as Grosse Mignonne, Royal George, Noblesse, and Barrington; a thoroughly good Noblesse is perhaps A 1 among Peaches for flavour. If the newer Peaches are not quite perfection in the matter of flavour, they are very useful in helping us to extend the season, and to the above list of four varieties I may add Alexander, Hale's Early, Dymond, Walburton Admirable, and Sea Eagle. The early "royal" Peaches, as Louise, Beatrice, &c., are too small to be of much service. Dymond is a grand Peach, a little inclined in point of texture to be what gardeners of the old school would call woolly, but it is a sure setter and cropper, of first size, and valuable, as it comes in between Hale's Early and Royal George. There is no doubt that the inferior flavour of market Peaches is due to the fact that growers are compelled to pick them before they are ripe to ensure safe transit. With only one or two exceptions there is no variety of Peach that ever acquires first-class flavour if prematurely gathered. To thoroughly enjoy Peaches they should not be taken from the tree until the fruit if pressed will yield readily to the thumb. The Admirables are exceptions; they require closely watching and picking when the slightest change of colour is seen, or they will drop from the tree some time before they are thoroughly ripe. The Plum stock is probably the most reliable that has yet been tried for Peaches, but this is not always to be depended on, as the cankered stems and the ten-

dency to sucker will testify. Given a favourable situation and season, there does not seem much trouble in securing a crop of Peaches in the south of England; the tree likes an open, fairly light loam, but will flourish in ordinary garden soil if a little extra attention is bestowed when the crop is swelling. I invariably go over the trees as soon as the leaves show signs of falling and do all the pruning required, the remaining shoots being detached from the wall, cleaned and dressed, if time permits. Green-fly and red spider are very troublesome, and indeed in some seasons are very difficult to keep under, this season being specially noticeable for the numbers of the last named pest. If the natural soil is a somewhat retentive loam, Peach trees will last in perfection for many years. They are, however, much shorter-lived on a light sandy loam, although the period of life may in the latter case be often extended by annual top-dressings of stiff loam and cow manure in equal proportions. I should like to add a word of caution to any about to commence Peach culture with respect to the character of tree to purchase. Select clean stems and firm wiry wood, and discard any that show the slightest symptoms of canker or have green, sappy growth, as the latter never make good trees and are very disappointing. I think nurserymen might dispense with a little of the manure for maiden and first season Peaches; it no doubt builds up a tree quickly, but the result of such building up is, unfortunately, not conducive to the future well-being of the tree. It was, I think, Mr. Coleman who suggested some time back a Peach exhibition or congress, and it would doubtless prove very valuable not only in bringing out the best varieties, but in demonstrating the adaptability of the several sorts to different soils and situations. Among the old trees here is a curious variety known as Poole's Late Yellow, a large Peach, coming in with Walburton Admirable, with colour and texture of flesh exactly resembling an Apricot. The foregoing answers to the queries on outdoor Peaches would apply generally to Nectarines, which also do well, seldom failing to finish a good crop. I find them in fact rather more hardy than Peaches. Lord Napier, Elruge, Early Orange, and Violette Hâtive are the varieties grown. I have tried Humboldt out of doors, but (save in very exceptional seasons) it fails to ripen satisfactorily.—E. BURRELL, *Claremont, Surrey*.

— In regard to Peaches, on which special information is invited, I may say that they are largely grown outdoors in the gardens here, and rarely are we without ripe fruit from the end of July to the first week in November, beginning with Early Alexander and Early Louise, and ending with Salway. The two first-named are of good flavour and the last indifferent, but valuable for its lateness. We have found the following to be good varieties for outdoor culture, viz., George the Fourth, Dr. Hogg, Dymond, Sea Eagle, Late Admirable, and Walburton Admirable. I may also add that we have discarded as useless Early Rivers, Princess of Wales, and Lord Palmerston. Inferior flavour sometimes found in market Peaches is probably due to the fruit having been gathered before it was ripe.—J. HORSEFIELD, *Heytesbury, Wilts.*

— The best Peaches for flavour of the kinds grown here I consider Royal George, Barrington, Bellegarde, Walburton Admirable, and Prince of Wales. I have not had the opportunity of testing new kinds. The inferior flavour so often found in market Peaches I attribute to the fruit being gathered before it has ripened fully. The old Mussel Plum stock gives the healthiest Peach tree in my opinion. I have found that trees worked on the Peach stock are most subject to the yellows and other diseases. Outdoor Peach culture has been given up in most places in this district; still given a good aspect and careful management, good crops can be obtained. Our trees have failed this season, being the only failure the last ten years, which is easily accounted for, as last year was an unusually wet, cold, and sunless one, and the trees were badly infested with black fly. I feel sure that if anything approaching the attention given to inside Peach trees were extended to outside ones,

good crops would be the rule and not the exception in anything like favourable seasons.—J. HATHAWAY, *Lathom House, Ormskirk, Lancashire*.

— The best Peaches for flavour in my opinion are Royal George, Bellegarde, Barrington, Noblesse, and Late Admirable. I have not yet had much to do with new varieties, but a brother gardener near here grows Sea Eagle, which seems of good constitution, and he says "a fine flavoured Peach, but a shy setter." The causes of inferior flavour in market Peaches are in my opinion due to over-forcing, not allowing the fruit time to develop gradually, and by hurrying them on to get them to market as early as possible. Respecting the stock that gives the healthiest tree and what stock tends to disease and canker, the information I can tender is insufficient; hence I feel I would not like to come to any definite conclusion. Outdoor culture of Peaches in this district is not at all practised, nor is it advisable, as it would more often end in failure than success.—GEORGE CORBETT, *Heaton Grange, Bolton*.

— The best Peaches I find for flavour are Noblesse, Grosse Mignonne and Bellegarde. No new kinds are grown here. No doubt the cause of inferior flavour in market Peaches may often be traced to their being gathered before ripe to save bruising in transit. The stock chiefly in use here is the Plum. Outdoor cultivation is successful in seven seasons out of ten where a south wall sheltered from high winds can be devoted to Peaches and a proper selection of sorts grown. Of these we find nothing to beat Royal George and Late Admirable.—R. GILL, *Tremough, Penryn, Cornwall*.

Lichens on fruit trees.—Mr. Thornycroft (THE GARDEN, October 5, p. 327) should dust his fruit trees with fresh slaked lime in still moist weather, and the Lichens will dry up and soon disappear. The best plan of applying it is for a workman to get up in the centre of the tree first, and having a bag of finely powdered lime to scatter it in all directions, when if the Lichens are wet, as they will be in misty or foggy weather, the lime will stick to the branches and soon entirely clear them of the Moss. Repeat the application from the outside of the tree by means of a step ladder to ensure every part being dusted over. Paraffin oil diluted with water and applied with the syringe will also destroy the Lichens.—J. GROOM, *Gosport*.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 8.

HARDY fruit and Conifers, of which there were several large collections, comprised the principal exhibits at the meeting on Tuesday last.

A FIRST-CLASS CERTIFICATE was given to each of the following:—

LÆLIA AUTUMNALIS ALBA.—This is rightly called "alba." It has no tint of colour in its spotless white flowers, save a yellow ridge running into the throat, and a tinge of pink on the apex of the column. When the plant gains strength the flowers will doubtless increase in size, but as yet they appear somewhat small. It is a lovely Lælia, introduced from the home of the type, Mexico, and should certainly be included in all choice collections as one of the most charming of white-flowered Orchids. From Messrs. Veitch and Sons, Chelsea.

CYPRIPEDIUM PICTURATUM.—This is a pretty flower, but of a rather washy colour, not decided and rich as in many of the Lady's Slippers. It is a hybrid, and possibly between C. Spicerianum and superbiens. There is a distinct trace of Spicerianum in the dorsal sepal, and the petals remind one of superbiens. They have a flush of dull magenta on the upper half, the other part green, spotted with lake; lip dull rose. It is remarkably distinct, but the weak colouring is a fault. From Sir Trevor Lawrence, Bart., Dorking.

LÆLIA PRÆSTANS ALBA.—A lovely Orchid, and an exact counterpart of the type, save in colour;

this is pure white, except that the rich crimson-magenta in the front of the neat lip is retained in the variety, and here, of course, it is intensified against the white ground. The plant was bearing two blooms. From Mr. Bull, Chelsea.

ANTHURIUM LEODENSE.—This was one of a large number of Anthuriums shown by Sir Trevor Lawrence, Bart., and the result of a cross between A. Andreanum and A. Veitchi. The plant is of vigorous growth, and bears a large, rich crimson-coloured spathe $8\frac{1}{2}$ inches long and 6 inches broad; the spadix is thick and white, except for about an inch of the upper portion, which is pale green.

AWARDS OF MERIT went to—

CATTLEYA HARDYANA (Wrigley's var.).—This is not so handsome as the type; it wants the massive form and breadth, though the colours are remarkably rich, especially in the lip, where we have the rich contrast of gold veins and lustrous purple. From Mr. E. G. Wrigley, Howick House, Preston.

LYCASTE PLANA CUMMINSI.—A charming variety of this Orchid, from Mr. Cummins, gardener to Mr. A. H. Smee, Wallington. There is no great difference between it and the type, but sufficient to warrant a varietal name. The sepals are of a rich brown, which brings out the purity of the small recurved petals. These are white, with a flush of rose down the centre of the upper half, the lower part quite white. The lip is wholly of a crimson shade. A strong growing plant bearing several flowers was exhibited.

RHODODENDRON ASPASIA.—This is a greenhouse variety, with a large truss of Stephanotis-like flowers of a clear yellow colour. It is one of the best we have seen in its particular shade. From Messrs. J. Veitch & Sons, Chelsea.

CHRYSANTHEMUM DORIE.—This reminds one of Fulton. It is a good October-blooming Japanese variety, with full compact flowers of a rich golden-yellow colour, the petals narrow. Its bright colour should make it popular. From Messrs. H. Cannell & Sons, Swanley.

APPLE KANE'S SEEDLING.—This Apple is described by the exhibitor, Mr. Dyke, gardener to Mr. H. F. Pocock, Kirklington Hall, Southwell, as a good cropper and excellent for either the kitchen or table. The fruits were gathered from a tree about 20 years old, so it is not a new variety. They are like Wellington in shape and size, with the flush of red so characteristic of Hollandbury, and they have the clammy skin of Manks Codlin. It is an Apple that deserves to be well tried.

A BOTANICAL CERTIFICATE went to *Ceropegia Saundersoni*, shown by Mr. F. Ross, Pendell Court Gardens, Bletchingley. It is a singular species from Natal, introduced about 1868, and requires a greenhouse. The flowers are pale green, mottled and veined with a darker colour, the five petals forming an umbrella-like disc, such as is produced by the style in the *Sarracenia* flower.

FLOWERS were comparatively few. Messrs. H. Cannell and Sons, Swanley, had flowers of double and single tuberous Begonias, of the deepest and softest colours, and a selection of Abutilon blooms, comprising such varieties as The Gem, scarlet; Boule de Neige, the best white; Miss L. Powell, clear yellow, very rich; Fortune Fame, deep lake; and striatum splendens, yellow, veined with deep crimson. The same firm also had a number of early-flowering Chrysanthemums. There were good blooms of Mrs. F. W. Grant, a rich rose-coloured Japanese Anemone; Avalanche, Stanstead Surprise, Wm. Holmes, O. J. Quintas, and Dr. Dufrain, which is too near the reflexed Elsie to have a distinctive name. The colour is not perhaps so soft and the petals are more pointed, but beyond this there is no difference between them. Messrs. H. Cannell and Sons also exhibited a box of *Etoile de Lyon*, a Japanese variety, but the flowers are excessively coarse and of large size, the florets broad, long, and white, occasionally flushed with rose-magenta; they had been brought on too soon. Messrs. Veitch and Sons had *Begonia Prometheus*, a hybrid between a tuberous variety and B. Frœbeli, the latter the female parent. The flowers are scarlet, and it is evident we have a distinct break

in this new departure in Begonias. The same firm also exhibited a selection of greenhouse Rhododendrons, which everyone admires for the delicacy and range of colours in the flowers.

A large group of miscellaneous plants was shown by Mr. B. S. Williams, Upper Holloway. The Orchids comprised good plants of *Cattleya velutina*, the beautiful *Cypripedium acanthum superbum*, *C. cardinale*, *C. selligerum*, *C. Ashburtoniae*, *C. vexillarium*, and *C. Harrisianum*. *Pachystoma Thomsoni*, an uncommon, but beautiful species, with white sepals and petals and magenta-coloured lip, was well shown; also *Oncidium ornithorrhynchum album*. This is a charming Orchid, creamy, not pure white, and with a yellow crest. The fragrance is like that of new-mown hay. Plants of it intermixed with the type would be charming. Several *Crotons* were exhibited in variety. There were clean, well-grown plants of *Comte de Germiny*, *Queen Victoria*, *Formosum*, *Countess*, *Thompsoni*, *Schomburgkianum*, and *Massangeanum*. Mr. Williams also showed a selection of the best Side-saddle Flowers, or *Sarracenias* (silver medal). Flowering shoots of *Jambosa australis* came from Mr. G. Wythes, Syon House Gardens, Isleworth. Reference is made to it in "Notes of the Week" of the present issue (p. 331). Plants of Lilliput China Asters, that bear neat flowers of various shade of crimson, came from the Society's Gardens at Chiswick. They are useful for cutting at this season of the year. An excellent show of early *Chrysanthemums* was made by Messrs. Davis and Jones, Camberwell. They had good flowers of such well-known varieties as *Lady Selborne*, *Mlle. Lacroix*, *W. Holmes*, and the pretty yellow pompon *Filberta*. A beautiful stand of flowers of *Chrysanthemum Mrs. Hawkins* came from Messrs. Hawkins and Bennett, Twickenham. The flowers are broad, excellent in shape, and of a clear yellow colour. It is the deepest shade we have seen, far finer in this respect than *G. Wermig*; the colour is most intense in the centre of the flower. The growth of the plant is most robust. A large group of splendidly grown *Anthuriums* was that from Sir Trevor Lawrence, Bart.; the plants were in the most vigorous health, and comprised *Burfordiense*, spathe salmon-red; the white-spated *Laingi*, and several seedlings of promise.

A beautiful spike of *Vanda cærulea* came from Mr. Hill, gardener to Lord Rothschild, Tring Park Gardens, Tring. The flowers were of an unusually deep blue colour. This is a delightful Orchid when well grown. Mr. R. Dean, Ealing, showed *Pyrethrum uliginosum* from layers. The plants were about 1 foot high and in full flower.

There were four large groups of Conifers to illustrate Mr. Coleman's paper on these trees. Messrs. J. Veitch and Sons had a silver medal for a collection of *Retinosporas*, the specimens large, clean, and handsome, and comprising all the leading types. Messrs. Paul and Son showed a group of *Junipers* and *Cupressus*, showing the leading kinds in the two sections, and a large group of *Yews* came from Messrs. Wm. Paul and Son, Waltham Cross; this was of unusual interest as a representative collection. A bronze medal was given in both cases.

Fruit committee.—The feature of the meeting was the fruit, of which there were several large collections. Messrs. J. Veitch & Sons had upwards of 370 dishes of Apples and 84 dishes of Pears, the fruits well coloured as a rule, and in the case of the Apples clean and well grown. There were good fruits of Cox's Pomona, Baumann's Red Reinette, Prince Albert, Flower of Kent, Alexander, Wellington, Cellini, King of the Pippins, Blenheim Pippin, Tom Putt, Seaton House (a rich yellow Apple), Yellow Ingestrie, Jefferson, and the American Apple King of Tompkins County (silver-gilt medal).

An admirable collection was that from Mr. C. Davies, Mote Park Gardens, Maidstone. The Pears were the finest we have seen from a private grower, especially the fruits of *Souvenir du Congrès*, *Pitmaston Duchess*, *Emilie d'Heyst*, *Doyenné du Comice*, some of the last named weighing 16 ozs.; *Louise Bonne* of Jersey, and *Bœurré Clairgeau*. Of Apples, the fruits of *Cellini*, *Warner's King*, *Alfriston*, *Cox's Orange Pippin*, the famous *Newtown*

Pippin and *Sandringham* were worth mention for their size. Mr. Davies also had large clusters of *Black Hamburg* and *Muscat of Alexandria* Grapes, and *Warner's Red Currant*, a large-fruited variety, clear in colour, and valuable for its lateness (silver-gilt medal). A very large collection, numbering over 100 dishes of Apples and 60 of Pears, came from Messrs. J. Cheal and Son, Crawley, Sussex. The fruits were brightly coloured, especially those on the branches of the *Forge Apple*, a variety grown much about Sussex. It is very free-bearing, the fruits rather small, and rich red in colour. The same firm had fine fruits of the leading Apples, as *Beauty of Kent*, *Warner's King*, *Court Pendu Plat*, and *New Hawthornden*. The finest Pears were *Doyenné du Comice*, *Bœurré Hardy*, *Doyenné Boussoch*, and *Bœurré Bosc* (silver medal). Mr. Roupell, Roupell Park, S.W., showed the *Melon Apple* well, also *Newton Wonder*, a variety something like *Bramley's Seedling*, *Wellington*, and *Annie Elizabeth*. The same exhibitor had bunches of the *Early Black (July)* *Frontignan* Grape grown out of doors, the berries very sweet, and *Diamant Traube*, certificated at the last meeting (bronze medal). Excellent fruits of the richly coloured *Mabbott's Pearmain* came from Messrs. Wm. Paul and Son; and Mr. Geo. Gow, of Reading, showed the *John Harris* variety, which has fruits about the size of *Golden Pippin*. A standard tree of *Negro Largo* Fig was shown by Messrs. Veitch. The tree was bearing a heavy crop. Messrs. W. and J. Brown, Stamford, showed Apples, and a Tomato named *Golden Perfection* came from Mr. Maher, Newbury; it was of poor colour, neither yellow nor red.

NATIONAL CHRYSANTHEMUM SOCIETY.

OCTOBER 9.

THE second committee meeting of the season was held at the Royal Aquarium on Wednesday last, and considering it is only early October, there was a good show of flowers.

A FIRST-CLASS CERTIFICATE went to—

JEANNE MARTY.—We hope the National Chrysanthemum Society will not follow the practice of another body and give certificates to comparatively old varieties. The Japanese Anemone-flowered *Jeanne Marty* was described by Mr. Harman Payne in THE GARDEN of Dec. 16, 1886, and cannot therefore be called new. Several excellent blooms were shown by Mr. Robert Owen, of Maidenhead. It has drooping guard florets of a pale rose-lilac, which deepens into a rich shade in the well-built centre, sometimes quite 4 inches across. Belonging to such a limited class as the Japanese Anemone, it is all the more valuable.

There were a few new varieties that deserve to be well tried. Messrs. H. Cannell and Sons had blooms of *Meto*, which have great substance and breadth without coarseness. It is a Japanese variety, with an occasional stripe of lilac. *Etoile de Lyon* came from the same firm, but the flowers were evidently brought on quickly, so that much of the colour was driven out. A first-class certificate was given to Messrs. Cannell for it last year, and then we had the rich rose-carmine colour in perfection. It is a variety with broad massive blooms, long pointed florets, and the colour very rich, except at this season, when it is a washy white and lilac. The same firm showed blooms of *O. J. Quintas*, a reflexed Japanese, and a lovely variety for decoration; it is of a soft rose shade, the shape of the bloom globular, but not formal. Mr. Robert Owen exhibited flowers of *Lovely*, a single Chrysanthemum with three rows of petals, so that the flowers are less flimsy than those of many kinds, and rich rose, with a central ring of white. It is a pretty type.

Several excellent flowers of the variety *Mrs. Hawkins*, the sport from *C. Wermig*, were shown by Messrs. Hawkins and Bennett, Twickenham. It is a good market kind, and if those who have not seen it can imagine a large bloom of the type, but with a much deeper shade of yellow, they will have a good idea of *Mrs. Hawkins*. Messrs. Cannell and Sons showed, besides those mentioned above,

Avalanche, which is now one of our standard Japanese flowers, *Stanstead Surprise*, *F. Marrouch*, *Thomas Stephenson*, a sport from *Criterion*, buff-orange, with a silvery reverse to the florets, besides seedlings of their own raising. A promising Japanese Anemone variety is *J. H. Mann*, reminding one of *Ratapoil*, the guard florets long and drooping, of a reddish brown colour, the centre small and yellowish in colour. *Theodore Bullier* is a good Japanese kind; the flowers are rich maroon-crimson with a brownish reverse; it is a promising kind. Mr. Sullivan, gardener to Mr. D. B. Chapman, Downshire House, Roehampton, exhibited blooms of *Mrs. Chapman*, a Japanese variety, purplish rose in colour, and silvery reverse to the long petals. As shown it is too rough to be of any value. Mr. Stevens, St. John's Nursery, Putney, showed three Japanese varieties, viz., *M. Jules Lefebvre*, too rough as yet; *M. le Comte Foucher de Careil*, of a rose colour, and with a name of absurd length; and *Camoens*, rose and white. Mr. Henry Ironside, Foot's Cray, Kent, exhibited a plant of apparently *Roi des Japonais*, grown simply from a leaf without any bud. The exhibitor had seven other plants from leaves, but retained only one to test the experiment. It is certainly interesting, and perhaps some of our readers can give experience on this point.

Climbers for a covered way.—In answer to "Greyfriars," Oct. 5, p. 327, in the gardens here we have an iron-covered way 118 yards in length, 7 feet wide and 7 feet high. Half was put up and planted in the spring of 1884 and the rest in 1888. It is covered with fine-leaved and flowering climbers, and during the spring, summer and autumn is a very pleasing feature in our pleasure grounds. The following I have found to be the most satisfactory: *Roses Gloire de Dijon*, *Cheshunt Hybrid*, *Félicité-Perpétue* (evergreen), *Adelaide d'Orleans* (evergreen), *Princess Marie* (evergreen), *Ceanothus Gloire de Versailles*, *Jasminum nudiflorum*, *Cotoneaster Simonsi*, *Crataegus Pyraeantha*, *Pyrus japonica*, *Pyrus Maulei*, *Clematis Jackmani*, *C. montana*, *Aristolochia Siphon*, *Azara microphylla*, *Ampelopsis hederacea*, *A. dissecta* and *Lonicera japonica*. They are planted at a distance of 3 feet apart. I may mention that in a cold district it will be necessary until the plants are well established to give them some slight protection during severe weather.—EDWIN BECKETT, *The Gardens, Aldenham House, Elstree, Herts.*

Vote of condolence.—A vote of condolence with the widows of Mr. Hall, of Tulse Hill, and Mr. Fraser, gardener to Mr. White, of Ardarroch, was passed in the sale room of Messrs. Protheroe & Morris, Cheapside, on Friday last. The circumstances which occasioned it were as follows: Mr. Hall, of Tulse Hill, was about to visit Mr. White on Monday, September 30, and Mr. White sent his gardener, Mr. Fraser, to meet Mr. Hall at Greenock with his steam yacht. On their return journey across the Clyde the yacht was run down by a large steamer and cut in half, both Mr. Hall and Mr. Fraser going down with her. Both men leave behind them widows and families, and I am sure all who knew them will feel deeply moved at their sudden and little-expected death, both men being young and in robust health.—W. H. G.

BOOKS RECEIVED.

"Report on the Progress and Condition of the Government Botanical Gardens at Sabaranpur and Mussooree for the year ending 31st March, 1889." Allahabad, North-Western Provinces and Oudh Government Press.

"Diseases of Plants." H. Marshall Ward, M.A., F.R.S., F.L.S. Society for Promoting Christian Knowledge, Northumberland Avenue.

Names of plants.—*Lady D. Grosmont*.—*Quercus pedunculata*. The gall is the Artichoke gall.—*Mrs. F. Coleridge*.—*Populus tremula*.—*A. P. H.*—*Melanthus major*.—*E. M. G.*—*Clethra arborea*, but please send flowers if possible to make certain of the name.

Names of fruit.—*N. P.*—Pears—1, *Brown Bœurré*; 2, *Durondeau*; Apples—3, *Calville Rouge*; 4, *Hollandbury*; 5, *Small's Admirable*.—*S. B. D.*—Pears—1, *Marie Louise*; 2, *Bœurré Bosc*.—*F. Dowdman*.—*Coe's Golden Drop*.

WOODS & FORESTS.

AUTUMN LEAVES.

THERE is no department of landscape gardening in which more remains to be done than in that of trees and shrubs with coloured foliage, particularly in the case of those that change their usually green leaves to various bright hues. We have all heard and read much of this subject, even from a garden point of view, but we have never yet witnessed any deliberate and worthy attempt to represent in garden or in park the glory of the leaves of trees. Of course we except that shown by our native trees, which is often as remarkable as that of any other country. It is common to praise the beauty of certain North American trees, but very seldom is any allusion made to our own. Nevertheless, we did not observe in America anything more beautiful than we have now and then seen afforded by English trees in the south of England, and even in parts of Scotland. We remember one year seeing the avenue of Elms in Kensington Gardens, a golden grove, and a most lovely one.

We say so much of native trees mainly to call attention to the many treasures that are within the reach of planters. For if so much leaf-beauty is displayed by the comparatively few trees and shrubs of our own island, the fact suggests the rich stores that are within our reach from the trees and shrubs of many other northern and temperate countries in both worlds. The habit of changing from green to various colours as the leaves prepare to fall is frequent with deciduous trees and shrubs in northern countries generally, modified considerably, no doubt, by the amount of sun at the period of their ripening, the climate, soil, and situation. There are many American trees and shrubs that possess the charm of autumn colour in a marked degree, and these for the most part are much neglected—neglected not only by those who know little or nothing of trees, but also by people with some knowledge of the subject, and with every opportunity of making pictures with such materials as we speak of. None possess them in such a high degree as the owners of the parks of the United Kingdom. In few other countries does one, even occasionally, see in private hands such beautifully wooded and Grass-carpeted "home landscapes" as occur in almost every part of these islands. Only in such places can ornamental tree culture be carried out as it ought to be, including the particular form of it we now allude to. The unrivalled and necessary foreground of turf, the variety of surface, the ample space to allow of objects being seen at various distances, these are the conditions that permit of tree culture being carried out in a far more satisfactory manner than ever was seen in the old way of crowding species together, and rarely permitting any one to show its full value singly, in groups, groves, and combined with others.

Rotation in planting.—Whatever diversity of opinion prevails among foresters as to practical management, nearly all are agreed as to the bad policy of replanting with the same description of trees, at any rate until a certain period has elapsed. There must be time for the soil to become sweetened, for fresh mineral food to be prepared, and for the destruction of enemies, insect and fungoid.

Grouping trees.—The words grouping and massing are sometimes used in connection with landscape gardening, but, unhappily, grouping in the sense known to artists is neither very common nor very easy in gardens. And yet it is very desirable that we should learn to group things together in an easy way. Grouping, while one of the most beautiful of all ways

of arranging trees, is also very natural, as one often finds many examples of trees beautifully grouped together.

PACKING TREES.

DRYING and exposure to the air always injure roots. The longer the exposure and the greater the drying process, the greater, of course, is the injury. Digging up trees when destitute of leaves, and leaving them an hour or two in the shade, produces but little or no harm; but to remain in the sun, or to expose them for a whole day to the air, should not be allowed. If they cannot be set out or packed immediately, they should have the roots plunged in a bed of mud to give the surface a thin coating, or the roots should be immediately buried in mellow soil or sand until further operations are commenced upon them. Nothing is more common than serious injury to trees by deficient packing. Nearly all those from nurseries are carried to some distance. Some are taken by wagons; and the practice has not been an unusual one to leave the roots exposed for days together. Many trees are now sent by railroad and steamboat, and are sometimes a week on the way. In such cases, the complete protection and preservation of the roots are matters of the greatest consequence. The packing in which the roots are imbedded should as nearly as possible resemble in effect the bed of moist soil from which they have been removed. This is most effectually accomplished by first dipping the roots into mud, and then surrounding them with damp Moss. At the same time, to prevent external injury, the roots and branches must be well surrounded with straw if in bundles, or with a strong box if the latter is used. To pack well requires considerable practice and skill. It also involves some expense, which purchasers often begrudge; and hence, to save 5 per cent. in this way, they often lose 20 per cent. of their trees by exposure. The great number of trees packed annually, and the large amount on which the work is imperfectly performed, induce us to offer a few practical hints to beginners. In the first place, the materials must be provided. For packing bundles there must be, 1, a prepared bed of mud, which is best made by setting half a hogshead (made by sawing in two) in the ground, in which to stir thoroughly the soil and water; 2, Moss; 3, straw, of which Rye is much the best; 4, straps of stout leather, $2\frac{1}{2}$ inches wide, with very strong buckles at one end; 5, cord, about one-fourth or one-third of an inch in diameter; 6, strong sewing twine; 7, a strong packing needle, 6 inches long; 8, bast-mats, sacking, or gunny cloth; 9, direction labels.

To pack a bundle, first lay down on the ground two of the leathern straps, already spoken of, about 3 feet or 4 feet apart and parallel with each other; on these deposit a layer of long, straight Rye straw, about 2 inches or 3 inches in thickness. If the trees are long, lay down another strap, and another length of straw lapping on the last. Then place a layer of Moss on one end of the straw, and the roots of the trees, previously dipped in mud, on the Moss. Proceed to lay on the trees successively, sprinkling Moss among the roots, and straw among the stems and branches, taking care, at the same time, that the roots lie as compactly as possible with each other, and the stems perfectly parallel and not crossing. When a sufficient number of trees is made into a pile for a bundle, a layer of Moss is laid over the roots and straw on the stems and branches, as below. The straps are then brought up, and two or three men draw them strongly through the buckles until the whole is compressed into a round and compact bundle. Next, in order to secure the straw firmly to its place (having previously, while drawing the bundle together, adjusted it evenly over the whole surface), a cord must be passed round it from bottom to top at intervals of 6 inches to a foot, first tying it to a strong root and then proceeding upwards by successive loops. To keep the straw to its place, these loops must be tightened with great force, which is best accomplished by two men working together, one of whom forms the loop and keeps it to its place, and the other passing the cord round a short stout stick draws upon it by this

means with his whole strength, the first one holding it to its place while another loop is made. The end of the bundle being slightly raised on a bench from the ground, the work is rapidly accomplished—the leathern straps being successively taken off as the cording proceeds. Lastly, a mat or piece of sacking is spread under the roots, after they have been well covered on every side with Moss and a coating of straw, and its corners are drawn together and the whole well secured by sewing with twine. The direction label is then sewed or corded on and the bundle is ready for transit. This is the simplest mode of packing a bundle, and answers well for all of moderate size. Usually, however, there are some modifications or additions needed. If, for instance, there are several sorts of trees and several of a variety in the bundle, as usually happens in filling retail orders, it is best to tie up each variety by itself, with a small straw band, and with an admixture of straw among the stems. These are then all placed together on the straps, Moss mingled well with the roots, and brought compactly into a bundle, and kept together by a few twisted straw bands. The external coating of straw and cording is applied afterwards. Very large bundles are likewise more securely packed by first binding them together, as above mentioned, and covering them afterwards. Ropes, doubled, so as to form a loop, are sometimes used instead of a strap to draw the bundles together, but they are more apt to cut or bruise the trees than the flat surface of the leather, and need a thick bed of straw under them. In the spring of the year, when the buds start and the bark consequently is free, great care should be used to prevent bruising, by a copious use of straw—and all easily broken trees need special care of this kind.

The Cut-leaved Birch should always be planted by itself in the most prominent and conspicuous position on the lawn. Although it grows rapidly and attains to a considerable size, it is equally well adapted for large and small grounds, and wherever planted it always contributes towards rendering a landscape charming and effective. For avenue planting it surpasses all other trees. Were I limited to a single ornamental tree, I should have no hesitation in selecting this in preference to any other. It is the most graceful of all trees, and deserves to be better known and more widely cultivated.—X.

The forests of Burmah.—The two reports for the last official year on the working of the forestry departments of Upper and Lower Burmah have been issued almost simultaneously. They show a great improvement in every direction. The area of reserved forests in Lower Burmah was increased by 200 square miles, and it is anticipated that within the present year it will be increased by 400 square miles in the Pegu district alone, where at the close of last year the total area of reserves was 3318 square miles, and in other districts new reserves are being formed, or old ones being increased. The report complains of a lack of forest officers to carry out the necessary work with efficiency. In Upper Burmah, as might be expected, there is more to record. The forest officers are acquiring a full knowledge of the vast areas under their charge, and the difficulties respecting the obligations of the late Burmese Government in regard to forests are being overcome. In Upper Burmah the valuable forests are being worked by lessees, the Bombay and Burmah Company alone holding seven forest tracts. The contracts between this corporation and the Government of India are set out in an appendix to the report. The general work of the department at present is confined mainly to surveying and mapping. The forest laws are little understood as yet by the people, and they are only enforced in the case of serious offences, such as destroying green Teak and cutting down Cutch trees for firewood. The amount of timber extracted from the forests is increasing. In 1887-8 it amounted to 98,470 tons, and in the past year to 162,458 tons. This increase is attributed to "the rapid progress made in the restoration of order in almost every district in Upper Burmah."

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

AUTUMN CROCUSES.

SEVERAL species of autumn Crocuses have flowered unusually well this year. These autumn Crocuses are very ornamental. Many of them are very easily cultivated and multiply very fast. They are free from one great objection there is to the autumn Colchicums, with which they must not be confused; I refer to the very ugly and untidy leaves which the Colchicums make in spring, when borders ought to look their neatest. In spring, Crocuses are plentiful enough, and the yellow Crocus and many varieties of *C. vernus* supply all that ordinary gardens can want, but in September and October such flowers are scarce and welcome. I have grown about twenty species of autumn Crocus for several years, and mention a few which have done best for the information of those who wish to grow them. Whatever will thrive in this climate and soil, in which I never can persuade any varieties of *C. sativus* to make a flower, may be grown successfully in almost any country garden in England.

The earliest autumn Crocus is *C. Scharojani*, which I would gladly know where to get, and the next is *C. vallicola*, which I cannot recommend, as it flowers here shyly, and the flowers are over in a day or two, so I begin with—

C. NUDIFLORUS, which began this year early in September. It is very hardy and is perfectly naturalised in England. I remember half a century ago several acres of Nottingham meadows, now built over, being blue with its flowers in October. The flowers are large, but not proof against bad weather, and the bulbs straggle, owing to the habit of throwing out stolons, at the end of which new bulbs are formed. Some white and striped varieties collected for me near Biarritz seem to flower later than the type.

C. ZONATUS was this year as early as *nudiflorus*. It is a very robust variety, increasing fast, the clumps being densely crowded with flowers. Colour pale lilac with a yellow throat.

C. SPECIOSUS, probably the best known of all, began about the same time. This has become so abundant with the bulb dealers as to be easily within the reach of all gardeners. The flower is rich purple with a bright orange much divided stigma. I have seen very pale varieties, but never a white one. It multiplies rapidly by bulbils formed at the edge of the basal tunic. It may be grown in clumps mixed with the common spring Crocus, being quite as able to take care of itself.

C. PULCHELLUS came out next, having large and robust flowers of pale lilac with lighter rays. The flowers last as long as any. I have also a pure white form of this.

C. LEVIGATUS is less robust than others, but has the merit of flowering with leaves. The flowers are rather small, globular, and borne near the ground. They are white striped with purple.

C. SALZMANNI began to flower about the middle of September and had long leaves at that time. The flowers are large, pale purple, and have no very distinct character. The species much resembles

C. CLUSI, which has leaves 2 inches or 3 inches long when it flowers. It is not a rapidly increasing or very vigorous plant, being Portuguese, and probably liking a warmer climate than mine.

C. MEDIUS, flowering before the end of September, is one of the most beautiful as well of the most easily grown. It is pale purple, with a bright orange, widely spreading stigma, surpassing in this character even *C. speciosus*.

C. LONGIFLORUS multiplies so rapidly that two or three bulbs soon form a dense clump. The flowers are not large, but produced in abundant succession from the beginning of October into November. It is lilac, with a bright scarlet trifid stigma, the long divisions of which lie down over the petals.

These are the best autumn Crocuses. Another Crocus, though not autumnal, was in flower in 1888 here in the open border before Christmas, and continued through February. It is *C. Imperati*, and is golden brown outside and purple inside. Keeping company with the Snowdrops, it is always a favourite; but although quite hardy, its season makes it desirable to protect the flowers in bad weather with a bell-glass. There is a beautiful white variety which with me flowers well for a season or two and then dies of rot. I find I have omitted *C. iridiflorus*, the tallest and largest of the whole section. Though the outer petals do not fall over like those of an Iris, the relatively small size of the inner petals makes the resemblance to that flower conspicuous. The colour is purple, and the leaves, which grow in spring, are very broad. It has been put into a genus by itself by some botanists, as if intermediate between Crocus and Iris. It is well worth a place in a garden, and flowers late in September.

C. WOLLEY DOB.

Edge Hall, Malpas.

Autumnal Monkshoods.—The autumnal Monkshoods (*Aconitum Fortunei* and *A. Fischeri*) ought to be encouraged in our gardens, and should be in the possession of all lovers of hardy plants. *A. Fortunei*, said to be a native of Japan, from whence it was introduced in 1833 by Dr. Von Siebold, flowered in Messrs. Young's Epsom nursery in 1837. It is a highly ornamental species of Aconite, bearing numerous large showy flowers of an intense and very bright blue. The helmet or hood is short, semi-circular, compressed at the sides, and has a pointed apex. The large lower leaves are deeply three-parted, the divisions irregularly cut and toothed towards the points, strongly veined and reticulated, those on the stem gradually passing into entire smaller leaflets or bracts. *A. Fischeri*, which is the *A. autumnale* of Lindley, and lately re-introduced under the name *A. californicum*, was first received from Fortune while travelling for the Royal Horticultural Society in April, 1846, as a species of Aconite flowering in winter, from Chusan. It resembles *A. Napellus* in habit and general appearance, and *A. cammarum* in the form of its flowers. It grows about 3 feet high and is taller than *A. Fortunei*. The flowers are larger, bright lilac-purple, and the leaves are much longer than those of *A. Fortunei*. It is cultivated in gardens about Ningpo, in the north of China, and is much prized on account of its habit of blooming late in the autumn or winter. It is also found in the Chefoo hills. Both the species are certainly

acquisitions to our autumn hardy blooming plan as they produce their flowers freely and at a time when they are most useful.—D.

CHRYSANTHEMUMS.

THE BLUE CHRYSANTHEMUM.

SOME time in the early part of the present year the editor of THE GARDEN did me the honour of reprinting from the "Chrysanthemum Annual" a short essay I contributed to that publication upon this subject. As already mentioned, whether the hybridiser will ultimately succeed in obtaining such a floral curiosity or not is no present concern of ours, but it is curious that one gentleman in the eastern counties is desirous of putting the matter to a practical test by offering a prize of £5 and railway expenses for any possible exhibitor of a blue Chrysanthemum. It is a tolerably safe offer, for a blue variety of our November favourite does not exist in this country, is certainly unknown on the Continent of Europe, and the theory of its existence in the Far East is based on the most meagre and mythical information. From the interest that the original article appears to have aroused in my own little circle of Chrysanthemum-growing acquaintances, and the difference of opinion that seems to exist as to the possibility of obtaining a blue variety, a few more words may be acceptable, and especially so at this season of the year.

Quite recently, both from China and Japan, a large quantity of miscellaneous matter in manuscript on the Chrysanthemum has reached me. This has arrived in consequence of some correspondence with friends in those countries, and, as may be readily imagined, the blue Chrysanthemum theory was not forgotten. Before, however, dealing with this, it may be useful to observe that one of our leading nurserymen and importers of new Chrysanthemums has for some few years past been endeavouring through his agent to secure the long-desired novelty. Up to the present he has not been successful, but no effort on his part will, it may safely be assumed, be wanting. No opportunity on my part has been allowed to escape that was likely to lead to any definite knowledge as to the actual existence of the, to me, fabulous flower. Not a great while ago the occasion presented itself of having some conversation with a Japanese then staying in London. To every inquiry on the subject his answer was a decided negative.

One very important feature in the matter must not be overlooked, and it is the extreme readiness of the native Japanese tradesman and manufacturer to adapt himself to the requirements of his European customers. The tons of pottery, cloisonné enamels, ivory carvings, lacquer ware, curios and other saleable products exported from the land of the rising sun, ranging from the cheapest rubbish to the most expensive and beautiful work obtainable in the world, are ample evidence that the quick-witted, bright little Jap has a remarkably keen eye to business, and possesses the faculty of turning his hand to anything likely to bring grist to the mill. In fact, he will supply the buyer with anything that money can command. Now it seems only reasonable to suppose that if a blue Chrysanthemum was in cultivation in Japan, something of a definite nature concerning it would have been heard long ere this. English and American horticultural houses have representatives there, and it is safe to imagine that if a blue variety were really in cultivation it would have been noticed at some of the shows.

The only remaining difficulty would be the price. Supposing religious scruples to stand in the way, there would surely in these days of enlightenment soon have been found some enterprising, mercenary Japanese florist, utterly regardless of the wrath of Buddha, who would have turned an honest penny by obtaining and disposing of the blue Chrysanthemum to the highest bidder.

But it does not exist, and probably never will; were it otherwise, the successful introducer might with certainty rely upon a speedy fortune. Let us think for a moment of the sensation that would be caused by the first appearance of a large, well-shaped flower like the Comte de Germiny or Edwin Molyneux with broad, deeply-grooved florets, richly coloured with a deep cobalt-blue inside and the reverse of a light ultramarine or azure tint. The hubbub caused by the advent of Mrs. Alpheus Hardy in America would be child's play compared to it. Instead of 1500 dols. being paid for the entire stock, an outlay of the same number of pounds sterling would be a remunerative investment for the lucky purchaser of such a novelty. And then what a stampede for plants and cuttings from all quarters of the kingdom. There would under such circumstances be some need for the usual announcement that orders would be executed in strict rotation.

My own idea on the matter is this, that if there is a blue Chrysanthemum at all it is not a variety of the *C. indicum* or *C. sinense*, but one of an inferior species. It is, therefore, not a Chrysanthemum at all, as the word is used in a general way when alluding to our exhibition flowers. Confirmation of this view is found in several parts of the manuscript previously mentioned. A native Japanese who is an enthusiast in Chrysanthemum cultivation, and lives at Tokio, says:—

According to your question, I should say there is no such colour as blue. Perhaps there is, but they are *No-giku* or *Yezo-giku*. These are a species of *Kiku* (Chrysanthemum), and bear the name *Kiku*, but still we do not respect them with the honourable title of *Kiku*. Furthermore, it is only necessary to supplement the foregoing with an extract from a translation obligingly made for me by an old friend now residing in the interior of China. It is from an old gardening book, in which the author, after describing over 150 varieties of Chrysanthemums, tells his readers that there are many flowers called Chrysanthemums that are not really so, although they bear the Chinese generic name *Chü*, which in the mandarin dialect means Chrysanthemum. One of these wolves in sheep's clothing, the *Lan-chü* or blue Chrysanthemum, has the following description appended:—

Produced in Southern Chekiang, never grows very high, opens at the beginning of autumn, colour a greenish blue, yellow centre, resembles the single leaf Chrysanthemum, but the leaves (? florets) are long and pointed, the edges like the teeth of a saw.

Now comes an important part of the description, for the Chinese author significantly adds, "not the same as Chrysanthemum, but one or two among Chrysanthemums will improve the colours."

It is unnecessary to pursue the subject at greater length. My reasons for rejecting the blue Chrysanthemum theory have already been stated in the "Chrysanthemum Annual," and to them are now added the observations and quotations included here.

C. HARMAN PAYNE.

Early cuttings of Chrysanthemums.—Suckers are now being pushed up freely from some sorts, and should be removed if the stock of any

particular variety is plentiful, or all of them will be rendered weak by overcrowding. Where any particular sort is required for extensive cultivation next season, the forwardest cuttings may be inserted singly in small pots, so as to allow more space for the smaller ones to develop later on. These may seem to be trifling details, but if carried out will be found to pay later on when the stock for next year's growth is obtained. Some growers are put to sore straits to obtain a sufficiency of suitable cuttings at propagating time in consequence of timely attention not being given to such small matters as those just described.

When to cease giving stimulants.—Growers of Chrysanthemums for large blooms who have commenced this method of cultivation this season for the first time, and who have had any previous experience, will want to know when the application of stimulants to the plants should cease. Some writers say that the feeding of the plants should be discontinued directly the buds show colour, but this, in my opinion, is just the time when assistance is required to develop the blooms and swell out the petals to their fullest size. I consider that the nutriment contained in the soil has long since been absorbed by the growth of the plant, and little else is left in the pot but roots at this stage of growth. If this be the time to cease the application of stimulants, from what source is the plant to receive its nourishing power if nothing but clear water be given it after the colour can be seen in the unfolding petals? The larger the quantity of roots, the more feeding will the plant require; consequently the development will be in ratio with the feeding applied, presuming that all other conditions are favourable. Continue to feed the plants until the blooms are three parts expanded, and at this stage the stimulant should be used at its maximum strength, gradually decreasing it as the time draws near for discontinuing it altogether. After the time named clear water only should be given, and this not oftener than is necessary to keep the soil moist; anything approaching stagnation at the roots should be avoided.—M.

The Chrysanthemum season.—This promises to be one of the best Chrysanthemum seasons for years, although the plants are showing bloom a trifle too early to please intending exhibitors. The warmth and sunshine of September ripened up the wood, and the taste of frost in the early part of the month was a good reminder of the disastrous results of last year. Very few escaped the unexpected and severe frost of October 2, 1888, which Chrysanthemum growers will not easily forget. One London nurseryman lost £200 through that unlucky visitation, but growers have profited by the lesson, and this year very few plants remained out after the few degrees experienced in September last. We hear that there are other importations of Chrysanthemums on their way from Japan, which if they contain such prizes as the varieties Edwin Molyneux and Avalanche will be valuable. Unfortunately, as in the case of the earlier importations of Orchids, there are more dead than living plants, and Chrysanthemums are less able to bear long journeys than many kinds of Orchids. Such types as *E. Molyneux* and *Avalanche* are revelations; they show us the wealth of flowers in Japan, and make us yearn for more of those treasures which the skill and culture of the Japanese have brought to such perfection.

Mildew on Chrysanthemums.—When mildew attacks Chrysanthemums and is not promptly dealt with, many of the lower leaves turn yellow before blooming time arrives, and this naturally affects the quality of the flowers. I have until this year used sulphur for this pest, but I find sulphide of potassium much better. I keep some in readiness, and as soon as an affected plant is seen it is drenched with a solution at the rate of half an ounce to the gallon of water. I like the sulphide because it is clean and does its work so quickly. I believe that the mildew is quite destroyed in twenty-four hours after syringing. The only trace it leaves is a slight bluish stain here and there on the foliage, but even this wears off in a week or so. Some Chrysanthemums, as *Ethel*, *Fair Maid* of *Guernsey*, and

Boule de Neige, are never attacked with mildew here, whilst *Princess Teck* and its sports hardly ever escape, though all the kinds stand together and get the same treatment. When housing kinds subject to mildew it is a good plan to syringe them as this saves trouble later on.—J. C. B.

Etoile de Lyon.—This is a good flower in its season, but not when shown in October, as at the last committee meeting of the National Chrysanthemum Society. The flowers were washy in colour and coarse, just as if forced to the utmost. It had the rich rose-carmine colour in its fullness last December, when Messrs. Cannell & Sons showed it at the Royal Aquarium. It was then given a first-class certificate. There is every promise of this becoming a variety of great value, as it can be had good as late as December. It is a true Japanese variety, the florets long, broad, pointed, slightly drooping, and forming a full, but flat flower.

Chrysanthemum Ada Spaulding.—This is said to be a seedling of American origin, and it appears to have made a great reputation on the other side of the Atlantic. It is reported as being perfectly incurved and of excellent habit, the lower half of the flower rich deep pink, shaded with bright purple-rose; while the upper half is pearly white, the flowers of good size, with broad stout petals. It is to be distributed in March next year. Meanwhile it will no doubt be seen in London this autumn, as Mr. Robert Owen, nurseryman, Maidenhead, is the English agent for the sale of the flower.—R. D.

SHORT NOTES.—CHRYSANTHEMUMS.

Snowflake is a pretty single white variety, flowers very pure, small, and with sharp pointed florets. It is an excellent kind for cutting and blooms early.

Chrysanthemums at the Inner Temple.—The show of these was opened October 15. In our issue of October 12 we inadvertently said that the show would not be opened until November 18.

Alice Bird, synonymous with *Buttercup*, is a pretty decorative variety, the colour clear yellow. It is exceptionally free and early, just one of those bright coloured kinds everyone should have who wants plenty of bloom.

Lovely is a pretty single variety exhibited recently by Mr. Owen, of Maidenhead. The flower is rich rose-pink, with a white zone round the disc. It is a promising variety for cutting. We should like to see more, however, of the *Snowflake* type; they have a charming freedom, quite unlike the stiff-petalled kinds.

Duchess of Manchester is an incurved variety in full beauty in the Finsbury Park collection. It is very hard to grow well, hence its scarcity, but when well developed the flowers are unusually beautiful, white, with the lower petals suffused with pink. It is a very old variety.

Avalanche.—The beautiful Japanese variety introduced by Messrs. Cannell and Sons in 1887 from Japan is flowering splendidly this season. No variety of its class can show the depth, breadth, and purity characteristic of *Avalanche*. Mr. G. Stevens has plants unstopped, each carrying a number of finely developed blooms.

Eugene Gait is a reflexed Chrysanthemum of medium size, which is an advantage, and excellent in form; the colour a rich shade of orange-red, the reverse of the florets gold-yellow. It is a promising kind, and was shown by Messrs. Cannell & Sons at the last committee meeting of the National Chrysanthemum Society.

Chrysanthemum Feu de Bengale.—This is a most valuable addition to early-flowering varieties. It is a Japanese, in habit like a pompon, very dwarf and quite as free-flowering as any pompon, while the flowers, which are of a bright orange-yellow, are fully 5 inches in diameter. I have a plant of it now (Sept. 30) in full bloom, and I do not know anything more effective.—DELTA.

Chrysanthemums in the parks.—In the London parks there is a good show of October flowering varieties, principally *Mme. Desgrange* and its golden variety *G. Wermig*. There is a large bed of a rich rose-purple type in St. James's Park, where a good use is always made of hardy flowers. There need be no lack of colour in October if early Chrysanthemums are freely planted.

FERNS.

W. H. GOWER.

PTERIS CRETICA.

THIS is an old species, having been in cultivation in our gardens for at least seventy years, and it still remains as useful as ever. The genus was formerly much larger than at present, as it contained the plants belonging to the various genera of *Litobrochia*, *Doryopteris*, *Platyloma*, and many others which have been established out

stem, but I am at a loss to account for this. I see, however, that the late Mr. Smith, my old and respected master, has removed our British species to the genus *Ornithopteris*, established by Agardh in 1839. *Pteris cretica* is widely distributed throughout Europe, and spreading through the eastern world it reaches the Himalayas, the Philippine and various other islands in the Indian Seas. It is also found in various parts of South Africa and South America, and from its cosmopolitan habit it is very hardy, and withstands a greater amount of rough handling

are persistent, and to these the decorator must look for producing a nice effect. It is a strong growing plant, doing well in a mixture of loam, peat, and sand, and enjoying an abundance of water, and I have found soot water and liquid cow manure very beneficial in deepening the colour, which will become pale, especially when the plants get pot-bound. *P. cretica* also enjoys a somewhat shady position, and so treated it will thrive in any cool fernery all the year round. I have grown it well in the open-air fernery during the summer months, but have never yet been able to preserve it alive through the winter.

P. CRETICA ALBO-LINEATA, a pretty variegated form, equally as hardy as the species, was sent to this country from the Dutch Botanic Gardens of Buitenzorg, in Java, and for a long time was considered a native of that island, but my friend Oldham, some time afterwards when travelling in Japan, wrote to me saying he found this a very common Fern in those islands, and I take it for granted that the Dutch had brought it from its native country to enrich their collections in the gardens at Java. This plant I have had grow well outdoors in the summer months, but I have not been able to keep it through the winter months.

P. CRETICA MAYI.—This is a truly beautiful and handsome variegated variety, but I know nothing of its history. It was obtained from spores, I presume, by Mr. May, whose name it bears, and in whose nursery at Edmonton large quantities of this and many other Ferns are grown; indeed, Mr. May is well known in the London district for his large and varied collection of Ferns.

P. QUADRIAURITA VAR. *ARGYREA*, or *Pteris argyrea*, is also a very beautiful variegated form; it is a native of the Neilgherry Hills and various other parts of the East Indies, and thrives well in the cool fernery, where it grows some 3 feet high, the fronds being twice divided, the segments broad, the centre of all the parts being broadly striped with silvery white, the outer border bright light green. This plant grows well in any cool temperature, it even makes a good window plant, the only perceptible difference being that it does not grow so tall in a very cold situation. It may also be used with good effect in the tropical house, where it grows more strongly. In heat the breadth of the fronds is increased and the silver markings are clearer.

P. TRICOLOR, said to be a variety of *P. aspericaulis*, is, however, the most brilliant of all the variegated Ferns, having a broad central band of rosy red or crimson, on either side of which is a pure white border with deep green margins. This plant requires the warm house and likes plenty of sun. It is a very difficult plant to keep in good health.

Selaginellas.—"J. P." sends half-a-dozen kinds of these plants, well dried and numbered, for names and some hints on cultivation. As regards the cultivation, as *Selaginellas* like plenty of water, both to the roots and in the atmosphere, the pots and pans in which they are grown should be therefore exceptionally well drained. But as you say you have only just received them, they should be taken special care of through the winter now coming on. In the spring take off some pieces and make some more plants, so that you may not be dependent on one specimen only. They may be potted in a mixture of about equal parts of loam, leaf-mould, and peat made sandy. No. 1 is *S. atro-viridis*, one of the most beautiful of its section, and of a strong, robust habit. It is a native of the Malay Peninsula, and likes heat and moisture. No. 2 is the true *S. denticulata*, not the *denticulata* of gardens, which is *Kraussiana*, the plant so commonly grown for edgings; but this plant is quite different. It is a native of the Mediterranean district, and is nearly or quite hardy in this country. But I would not advise you to plant yours out this autumn, even if you have a suitable place; keep it in the cool house. No. 3 is *S. flabellata*, a widely-spread species, and it requires a warm house. No. 4 is *S. flexuosa*, a



Pteris cretica. Engraved for THE GARDEN from a photograph sent by Mr. Percy C. Groves, Worcester.

of it, in order to allow lovers of Ferns to more readily distinguish and determine their favourites. It is very curious that nearly all the variegated forms of Ferns known are contributed by the *Pteridæ*, but such is the case, and variegated forms of our own native species have also been found, for I have a specimen now before me gathered about Luddenden Foot, in Yorkshire, some years ago with variegated pinnae, but the markings did not remain. Indeed, I think the variegation is much easier lost in plants with a creeping caudex than in those with an upright

than many Ferns. This very hardiness, however, leads to neglect, and one frequently observes this plant subjected to the full influence of the sun under glass, where it struggles on and grows, but its fronds assume a yellow hue which detracts much from their beauty. The plant assumes a taller habit and bears a somewhat different aspect when the fertile fronds appear, and in this state the artist has depicted it, the tall erect fronds being the fertile ones, whilst the broader, dwarfer, and more spreading ones at the base are sterile. The sterile ones

common Brazilian plant, which requires stove temperature. No. 5 is *S. serpens*. It is also known by the names of *variabilis* and *mutabilis* on account of the change you speak of. This is quite natural to the plant, and I believe the white colour is constant. No. 6 appears to be a form of *S. caulescens*, a very pretty, but variable species. It will require the warmth of the stove.—W. H. G.

ORCHIDS.

W. H. GOWER.

BRASSIAS.

THESE are plants which do not find much favour with the majority of Orchid growers, but some years ago Brassias were not absent from any of the fine collections of the day. When the Orchids at Kew some years ago were under my control, large examples of many of the species existed there which are now rare in gardens, but the day for Brassias appears to be coming round again, for which I am very glad. Although the plants have not brilliant colours, their peculiarly shaped long-sepal flowers were always an attraction in a collection, whilst the plants grow freely, bloom abundantly and annually, and they last a very long time in beauty. I had flowers of three kinds come to me for name the other day from J. Gilmour, in the north of Ireland, so that I feel compelled to say something in their favour. 1, is *B. Gireoudiana*; 2, *B. caudata*; 3, *B. caudata hieroglyphica*, and all are flowers worthy a place in the best collections. The first is a somewhat strong-growing kind, but it has not been seen much in this country. I have frequently seen it in German collections, and a good example of this species used to exist in the Schillerian collection at Altona, near Hamburg, when Herr Stanger had charge of them; the flowers are large, and the lower sepals very long, bright yellow, spotted and blotched with red. The second is *B. caudata*, an old species, but it has very long sepals, and these with the short petals are tawny yellow, spotted with dull brown. *B. caudata hieroglyphica*, I believe, was first introduced by M. Linden, of Brussels, and it is a very pretty variety, the shape of its flowers being quite typical, but they are differently coloured, being tawny yellow transversely blotched and spotted in the sepals and petals with bright cinnamon, the ends of all the segments being plain yellow. The lip is plain yellow, slightly spotted towards the base with purple; the raceme of this variety as it stands in the glass before me strikes me as being one of the very prettiest kinds I have ever seen, and it is very handsome, as they all are when used as cut flowers.

Brassias are very easily grown into good specimens, and may all be grown in pots which should be well drained. Pot the plants in good fibrous peat, some chopped Sphagnum Moss and a little sharp sand. During the growing season these plants require the temperature of the Cattleya or intermediate house, and they also enjoy a fair amount of shade and an abundant supply of water, but in the winter they may be placed at the coolest end of the house in a temperature which does not fall lower than about 58° to 60°. A more moderate amount of water must be given, but do not dry the plants so as to cause the leaves to turn yellow or the bulbs to shrivel. During this time the plants may stand fully exposed to the light, as we do not get the sun in winter sufficiently strong to affect them. This will have the effect of inducing them to flower freely. Other handsome Brassias are *Antherotes*,

brachiata, *Keiliana*, and *Keiliana tristis*, *Lanceana*, *Lawrenceana*, *maculata*, &c.

Odontoglossum grande.—This fine old species is now flowering beautifully with Mr. Tautz at Shepherd's Bush, and amongst them are some fine varieties, some of which have six flowers on the scape. I have had plants with as many flowers myself years ago, but am sure it is the exception rather than the rule. I have heard of seven flowers on one scape. Six flowers forms a glorious raceme, and I am glad to see that this old *Odontoglossum* is again becoming popular. Many, I find, are devoting a house to it.—W. H. G.

Dendrobium Dalhousianum.—Although it is somewhat late in the season, this fine species is flowering now in quantity in Messrs. Low's nursery at Clapton. I do not before remember to have seen it flowering at this time of the year. It is perhaps the largest-flowered kind known, the combination of creamy-rose and lemon-yellow, coupled with the two large blotches of deep purplish crimson of the lip, being very beautiful. It requires warmth when growing and a good rest afterwards, when its flowers usually appear in spring and early summer. Every collection should contain this grand plant.—W. H. G.

Houlletia Brocklehurstiana.—This is a plant which is not so much seen as it deserves to be, but I recently noted it flowering in Mr. Tautz's rich collection a few days since. Years ago this *Houlletia* was considered very difficult to grow. This was in the days when it was kept hot and it very seldom flowered; now, however, it is found that it thrives best in the cool house with the *Odontoglossums*. There are several other species equally beautiful deserving attention, and all thrive best in the cool house.—W. H. G.

Paphinia grandis.—This is perhaps the very largest and finest of the genus. It is a remarkable flower, measuring upwards of 7 inches across, and continues in a semi-expanded state about a fortnight; the sepals and petals are creamy white, the lower half thickly banded with chocolate, the apical portion being wholly chocolate, with a shade of purple. The lip, which is peculiar in shape, is blackish purple at the base, creamy white on the disc, the side lobes erect and of a chestnut-brown, the front lobe composed of a pair of large, spreading and recurved falcate teeth of a purplish black hue, terminating in a bunch of long, dense, cream-coloured hairs, whilst the green column is tipped with yellow. This is a Brazilian species of great beauty, and at present is of extreme rarity in cultivation. It is a native of warm parts of Brazil, and like the rest of the known species requires strong heat and moisture during its period of growth. Although from its small size a severe drying is injurious to it, yet a slightly drier treatment is beneficial to the plant during the winter months. This species is well managed in Mr. Williams' nursery at Holloway, where several members of this genus are grown in small baskets suspended near the roof in a warm house, in which, I believe, they are kept all the year round.—W. H. G.

SHORT NOTES.—ORCHIDS.

Odontoglossum Alexandræ Wilsoni is a lovely form of the typical plant, having the sepals and petals white suffused with rose, freely spotted and blotched with chestnut brown; lip similar in colour, beautifully toothed at the edge.—H.

Cattleya Mastersonia is a Veitchian hybrid between *C. Loddigesi* and *C. labiata*. It is a bright-flowered variety, having the growth somewhat of *Loddigesi*, while the flowers in form and colour resemble those of *labiata*. It varies much in colour, and a very fine form at one time existed in the late collection of Mr. Lee, of Leatherhead. It had sepals and petals of a rosy-purple, the three-lobed lip being intense rich purple in front, the base and throat being soft clear yellow.

Cattleya Eldorado virginialis.—This is a lovely form of the species, which I have noted in the pages of THE GARDEN recently as flowering in several collections round London. Its delightfully fragrant flowers are pure white, saving the throat, which is

stained with rich orange-yellow. It is one of the purest white-flowered Cattleyas we have, and one which deserves the attention of every Orchid grower, first from its purity, then for its fragrance, and lastly the peculiar time at which the flowers are developed, viz., the months of August and September.—W. H. G.

FLOWER GARDEN.

NOTES ON TULIPS.

As this is the season for buying and planting bulbs, now is the time to offer a few remarks regarding the species and varieties of Tulip, ignoring the florists' varieties used so abundantly in gardens and public parks. It is not my wish to write disparagingly of the many fine Dutch varieties, but rather to urge the claims of the species and varieties, as they do not receive sufficient attention in gardens. During the last three years they have come into more general cultivation, as at such places as Kew distinct beds have been made of the finer types with the best possible results. There is a large variety to choose from, and except in two or three instances the prices asked for the bulbs are not exorbitant. The majority are as hardy as the florists' varieties, and it is seldom even the somewhat delicate Lady Tulip suffers, though requiring a warmer position than such robust species as Greigi. One of the main requirements of the Tulip is a well drained position and a good rich soil. The bulbs may be planted from 3 inches to 4 inches deep, and 6 inches is not too much in the case of *T. Clusiana* and other tender kinds. In planting Tulips, especially of florists' varieties, there is too much striving after a mere mass of colour without any greenery to act as a foil to the formal stems. With such species as *T. Greigi*, a carpet of white Rock Cress (*Arabis alba*), *Saxifrage* or *Aubrietia* is not required, as the broad handsome foliage is in itself sufficient, but a carpet of some spreading hardy plant adds much to the beauty of a bed of other types. This leads to the great point that should be observed—to plant beds only of one distinct colour, and thus there is no chance of having a garish mixed display. This style of planting has been followed closely of late in the public parks. The wisdom of it is obvious. The effect is richer, more even, and a succession is obtained by planting in distinct masses both early and late types. Few effects in a garden are more beautiful than a single bed of rich rose Tulips, as *Rose Luisante*, or a pure white or crimson-coloured variety. It is in this way the species of Tulips are planted in the Royal Gardens, Kew, and those who saw them last spring must have felt impressed by the splendour of the various species. There was a single bed of *T. Griegi*, the gorgeous Turkestan Tulip, introduced in 1873, on the turf near the Cactus house, and the flowers remained fresh for several weeks, being preceded by the broad handsome leaves. This is almost too expensive to plant much of at present, the bulbs being quoted at about half a guinea a dozen; but the price will become lower as the demand increases. It is certainly the showiest Tulip in cultivation, and makes a charming glow of colour in a small bed or a few clumps on the border. A little gem for bedding is the Lady Tulip, a sweet little thing, appropriately named. It is of delicate appearance, the flowers white flushed with red, a dainty Tulip everyone should have. I saw a bed of it last year on the turf, near a clump of shrubs, and it would have been difficult to conceive a prettier effect—unfortunately too uncommon even in good gardens. One of the first to greet us is *Kolpakowskyana*. It has been long in our gardens, but is not often

seen. The flowers are variable in colour, sometimes cherry-red and occasionally yellow; but this eccentricity of colouring does not mar its beauty; it rather increases its interest. *T. Kaufmanniana*, when it becomes commoner, should have a good place in gardens. It is a lovely species, the flowers sometimes brilliant yellow tinted with red, and occasionally shot with bright crimson. This would be more fitted for the border than a single bed, as the colouring is not decided and constant. If you have the *Lady Tulip*, its variety *stellata* will be scarcely wanted. It is like it in form and habit, but without the purple eye, and the filaments and anthers are yellow instead of black. A dwarf and valuable species is *persica*. It is very late, and makes a gay block of colour. The flowers are coppery-red in the bud, but when open are quite yellow, reminding one somewhat of *Anemone palmata*. It makes a pretty bed, and should be also planted in bold clumps in the border. The flowers are fragrant, like those of our native wilding *T. sylvestris* and the Italian form of it, *italica*, which blooms earlier and has larger flowers. The taller-growing Tulips include some strikingly handsome kinds, as *Gesneriana*, the finest of all the species; its variety *fulgens*, a very brilliant, red-flowered Tulip; and then we have the purplish magenta *Didieri*, the crimson *Oculis-solis*, or *Sun's-eye Tulip*, and the bright crimson *Eichleri*, which is of the character of *Gesneriana*. *T. macrospeila* is of a fine crimson colour, the flowers large, cupped shape, and carried on a tall stately stem. A small bed of it is remarkably rich. A noble hybrid is *retroflexa*, as it makes a splendid bed. The flowers are easily recognised by their bright yellow colour and reflexed segments. It is far handsomer than *viridiflora*, which is yellow, feathered with green, but the flowers are beautiful in their way, the colours quiet and in perfect harmony. Those who like quaint flowers should have a bed of the late-flowering *Parrot Tulip*, whose broad heavy segments are gashed and notched, and rich with brilliant shades of crimson and yellow. They are as picturesque in their quaint shapes and bizarre colouring as any flower we know. It is good advice to say plant now, as the season is already advanced for this work, the end of September being preferable. This is the time Mr. Walker, of Whitton, who grows Tulips by the acre, selects, and the broad beds there show a remarkable vigour in leafage and flower. He adopts the plan of annual lifting, as with the Daffodils, and the results justify the practice.

C.

Mina lobata.—This is decidedly an acquisition; pity it is not a perennial. Some plants raised in the early spring and planted in a sheltered south aspect are now, and have been for a considerable time, very fine. The harmony of colours—scarlet and various shades of yellow—is charming. Some of the seeds were tardy in vegetating, and the plants from them made but little progress. These I shall endeavour to keep over the winter, so as to secure an earlier bloom, as I believe the plants will go on flowering for months until arrested by frost. Whether I shall succeed remains to be seen. I find that there are several seed-pods on the plants, but I fear the summers in England are too short to mature them.—J. M., *Charmouth, Dorset*.

Stopping herbaceous plants.—Like Mr. T. Smith, I have been trying the effects of topping the stems of tall-growing plants. My attempts have been chiefly confined to the tall *Aster laevis*. In this case I have not gained anything. When the plants were about a yard high, I took 2 feet off some and 1 foot off others. Those stopped at 2 feet broke again, and the lateral shoots grew almost as high as those upon the unstopped plants, whilst

the quantity of bloom was considerably diminished, so there was loss instead of gain. Those from which only 1 foot was cut off branched, and have grown as high and flowered as freely as those untouched. With this little experience I should not have carried the matter further, nor in fact said anything about it, but Mr. Smith's success leads me to suppose that many of these tall *Asters* might be converted into dwarf free-flowering kinds, and used, as Mr. Smith points out, in positions where naturally grown their height would forbid. Some may call the idea a fad, but then there is a lot of pinching and stopping of plants in pots. We know what the *Chrysanthemum* is unstopped, and what useful bushy plants can be had for decorating by a simple system of stopping, so that it is only an old idea applied in the usual way to another class of plants. There will, however, probably be a best time of doing it, so perhaps Mr. Smith will tell us when he stopped his plants, and whether all were done at one time, because by varying the stopping periods it might be possible to lengthen the season of blooming of any particular plant that it was desirable to have in flower as long as possible.—A. H.

— I am much pleased with Mr. Smith's remarks as to cutting down tall *Michaelmas Daisies* and other herbaceous plants; it is one of those little hints which are of great practical value. I have been much inclined to class those tall *Asters* in the long list of herbaceous weeds not only from their want of decided colour, but also from their lankiness. It is true they may be used in shrubberies and in the wild garden. I have been trying to get together some of the best for bedding, and fancy with some success. Mr. Smith's hint gives encouragement as to future management. An experiment tried this season with an excellent sort named *punctatus*, recommended by and obtained from Mr. Smith, has been found to answer admirably, and I intend to repeat the plan another year with it and other tall sorts. It is this: to plant thinly about 2 feet apart, and when the plants have well shown their flower-buds about the end of August to peg down the stems close to the ground; the flower-heads will turn up in a few days, young growth will start from buds along the stems, also from their base, and will flower at the same time as the original trusses. A large bed of *A. punctatus* pegged down is now one sheet of flower, covering the ground like a carpet. These shoots are not more than 10 inches high, and every one is in bloom. I like this variety better than *bessarabicus*, the colour is softer and the plant more elegant; the normal height is about 2 feet 6 inches. I mean to try a bed of *Novi-Belgii* next year. It might be anticipated that there would be a difficulty in bending down the stiff stems, but I here experience none, not a single stem on any of the plants in the large bed referred to having been broken.—W. D., *Phoenix Park, Dublin*.

The Canary Water Lily (*Nymphaea Marliacea*).—This lovely Water Lily is a valuable addition to hardy aquatic plants, for although at Kew it is grown in the Lily house with the other members of this genus, yet it is hardy enough to withstand our English winters. Two years ago Mons. Marliac sent us a small piece which was potted and sunk in a 4-foot deep cemented tank in the kitchen garden in a fully exposed position, where it has remained ever since. Last year it made some growth, but this year it has been producing flowers in succession all through the season, and even now there is a bud trying to expand under the chill influences of a cold wet October. The beauty of the marbled foliage, so characteristic of the plant under glass at Kew, is not so well developed in the open air, but the leaves are pretty and much darker in colour upon the exposed plant. This Water Lily ought to become popular. When tufts have become established, they would add a new interest to the water garden and give variety of colour. One can imagine how beautiful this kind would look in broad masses, the soft canary-yellow flowers rising above the leaves and affording a rich contrast to the white-flowered kinds. The "Dictionary of Gardening" calls this Water Lily *Nymphaea tuberosa flavescens*, which constitutes it a yellow-

flowered variety of the North American hardy tuberous-rooted Water Lily. A coloured plate of this Lily appeared in THE GARDEN for March 31, 1888.

NEW GLADIOLI.

HYBRIDS OF GANDAVENSIS.

To one who, like myself, can look back upon thirty years or more of *Gladiolus* growing, and who has watched the improvement that every successive year has brought with it, the difference between the flowers of the present day and those of that time is something marvellous. We can find in other kinds of florists' flowers many which were familiar at that period which are now valued as much as they were then; but that is not the case with the *Gladiolus*. Looking back on those days, I can remember a bright coloured flower called *Don Juan*, which was considered an immense advance; it had only three or four blooms out at once. There were others which were winged, i.e., instead of the flowers facing you they were at right angles, partaking very much of the character of one of the species used in hybridising *oppositiflorus*, and where there was this tendency all kinds of plans were adopted for remedying this defect, even to exhibiting them on *Yucca* leaves. Now we not only have flowers which are all facing you, but so close together that it is impossible to get anything between them, and showing sometimes twelve and up to twenty blooms at one time. I have had some with sixteen and Mr. Burrell has exhibited one of his seedlings with twenty out at one time, while I find in the French lists some advertised as opening all their flowers at once. How greatly this enhances the beauty of the spike can at once be seen.

I hear people sometimes in their ignorance talk a deal of nonsense about *branchleyensis* as a border flower. It may be very well to praise it, for it is very hardy and very bright, but who would venture to put it into a stand for competition while for the border there are many varieties which are equal in brilliancy and superior in size, but unfortunately not so cheap.

During the last three or four years a further advance has been made in the flowers in the matter of size. The flowers of former years are dwarfed almost by the side of such flowers as *Baroness Burdett Coutts*, *Enchantresse*, or *Snowdon*, while at the same time there is not an atom of coarseness about them. In many classes of flowers, such, for instance, as the *Rose*, size is obtained at the expense of refinement, but it is not so with the *Gladiolus*; there are, indeed, but few chances of this unless we get what I observe in some English seedlings, a certain amount of hardness in the colour, but in the beautifully soft colour of the French flowers, their size only adds to, and does not detract from their beauty.

Mr. Gumbleton has lately described with his usual care and discrimination the new seedlings of *Lemoine's*. There is very much in these flowers to commend them, their perfect hardness being, I think, their great recommendation, and they are increasing in the length of their spikes and in brightness of colour, but there is still a hardness in the colouring very different from the softness and delicacy of tint in the hybrids of *gandavensis*, and the question naturally arises whether as there is more infusion of other strains in them, and we get away from the *purpureo-auratus* blood, it will not be at the expense of their hardness. As Mr. Gumbleton has given the names and characters of newer varieties of that section, I purpose doing the same with those of *gandavensis*. I do not say absolutely new, for I have not yet seen any of

those of last autumn, my remarks referring only to those of 1887. The fact is that two things have been altered in the distribution of these bulbs; they are kept a shorter time before being sent into commerce, and hence as the stock is smaller the bulbs are more highly priced. It is not an unusual thing now to find a bulb priced at twenty, twenty-five, and thirty francs, a thing unheard of formerly, and also to find that in the following season there is very little reduction in price, showing that the bulbs to be disposed of are few in number. In former years they came down in price, very frequently one-half; whereas now bulbs remain the second year at the same price as when they were first sent out. It is an unfortunate thing for the *Gladiolus* that it comes into flower at a time of year when London is empty, and when there are no exhibitions at which it can be shown, for however much some people may run down flower shows, there can be no question that they do a vast deal to foster the growth of any flower which they encourage, and while we find them sometimes exhibited at the provincial shows which abound in August and September, at very few of them do we see stands of *Gladioli* shown, and when they are most of them are merely seedlings of inferior quality, which are set up for the time, and then having served their purpose are no more thought of. This, of course, gives a discouraging idea of the flower to amateurs, and they are unwilling to undertake their culture; moreover, there are casualties which occur amongst them, and the death-roll each year is tolerably long, but they are cheap now, as cheap as *Hyacinths*, which people do not scruple to buy for one year's bloom only, while, although you may lose some of those *Gladioli* you buy in, yet many of them will remain.

ARRIERE GARDE.—Large flowers, rosy-salmon in colour, strongly striped with violet; lower divisions of the flowers lilac blotched with creamy yellow. I showed this variety at the Crystal Palace, where it was much admired.

AUORE DE FEU.—Flowers clear bright rose passing into scarlet with golden yellow centre; apparently a new colour, but I do not know whether it will be sufficiently large for the present taste.

CENDRILLON.—A curious colour; the flowers are very large and have a curious flush of rose in the ground colour striped with rosy-carmine, and altogether giving the blooms a very distinct character; the form of the flowers is, however, too pointed.

DOCTEUR BAILLY.—A most brilliant scarlet variety of the *Flamingo* type. Flowers very large and open, and with a white throat with carmine blotches. I look upon this as a valuable addition to the scarlet flowers, and it seems to have a more vigorous constitution than either *Flamingo* or *Mount Etna*.

ERIGONE.—A very fine flower, strongly striped with rich rosy-carmine on a pure white ground, large carmine blotches. I had only one bloom of it, but it seemed to me to be a very promising flower, and I hope to see more of it next season.

FORMOSA, like the preceding, is an early blooming variety. The flowers are large, of a soft silky rose strongly striped with carmine, and very pretty and effective.

JUBILEE—As far as I have seen, this does not appear to me to be a first-rate kind. It is said to open all its flowers at the same time, and to be of a good colour, but with me many of the flowers came semi-double, and this is no improvement to a flower so symmetrical as the *Gladiolus*.

PANAMA.—A large and bold looking flower, with very broad petals; colour deep carmine-rose with scarlet markings, and slaty-violet on the edges of petals.

PICADOR.—A very striking flower, of the *Neige et Feu* type, brilliant scarlet with large white blotches.

I have not seen either *Liseron* or *Mont Blanc*,

the two remaining flowers sent out by Souchet in 1887, but of the latter one hears a grand description, from which it would seem to be an improved *Enchantresse*, and if so, it will be a very grand thing. I question, however, if it will be better than Mr. Burrell's *Snowdon*, which is the finest white flower I have yet seen. Nor have I seen any of those of last autumn, and it is almost impossible to gather from descriptions what the character or style even of the flowers may be. Of the older flowers, *Enchantresse*, *Pollux*, *Minos*, and *Splendens* have maintained their character, the first being certainly the finest variety as yet widely distributed, but each year shows an improvement in these beautiful autumn flowers, and as other species are used in hybridising, we may expect still more striking results.

DELTA.

FLOWER GARDEN NOTES.

SEEDLING VERBENAS.—Seeds of these in separate colours can now be had at from 6d. to 1s. a packet from most seedsmen. Last spring, besides purchasing a packet of mixed colours, I also bought purple, white, and scarlet in separate packets, and without a single exception every plant proved true to colour. This circumstance has therefore made me resolve to dispense with autumn propagation, and consequent saving of space and labour of watering during the winter months, and instead to sow seeds in warmth early in the month of March, which I find is sufficiently early to obtain good plants for putting out in the beds before the end of May. It is well known that *Verbenas* are much subject to mildew, and the fungus very often gains the mastery, and not only kills the *Verbenas*, but injuriously affects any other plants near. This can be avoided by raising the plants from seeds, for seldom, if ever, does it happen that mildew attacks seedling plants, either before they are planted out in the beds or at any time during the summer. Our plants at the present date (October 11) are just as free from mildew as they were when first put out. The three colours—scarlet, white, and purple—were planted in mixture amongst small shrubs, variegated *Retinosporas*, and *Cupressus erecta viridis*, and the beds have been, and still are, as gay as any of the flower beds on which much more labour has been expended.

EVERGREEN HEDGES.—The sharp frost (5°) which occurred on the morning of the 17th ult., and which was pretty general over the south and south-western counties of England, did no damage here to vegetation of any kind, not even to *Heliotropes* or *Dahlias*. We have two fine rows, upwards of 100 yards in length of the latter, of the *Cactus* and single sections, and up to the present they are uninjured, being sheltered by a hedge of the *Lawson Cypress* 6 feet high to which the *Dahlias* are trained flatwise, and this note is to show the adaptability of this *Cypress* for the formation of a hedge or screen, as also the non-injury to it from the annual planting close to it of *Dahlias* and plants of similar growth. We have a smaller hedge of *Thujopsis borealis*, and another of the common English *Yew*, but neither will bear the training of other plants close to it without the hedges becoming bare; hence I specially recommend the *Lawson Cypress* as the best of all Evergreens for the formation of hedges and screens. Moreover, the plants are to be had at a much cheaper rate, and grow more rapidly than any others. The height of hedge, as before stated, is 6 feet, which is sufficiently high to display to the full any description of summer flowering or foliage plants that may be planted near it. The hedge is trimmed with shears some time during February or March, and the trimmings are made to serve as manure, as all are trenced into the borders, together with a moderate dressing of short stableyard manure.

A SUMMER BED OF SHRUBS.—For reasons that it is not necessary to mention, I last spring time converted a large bed that had in previous summers been furnished with large growing subtropical plants into a shrubbery bed. The form of the shrubs

being tapering or pyramidal, the kinds being *Cupressus*, *Retinosporas*, and Irish *Yews* and *Junipers*, also variegated *Hollies*, *Thujopsis borealis*, and variegated *Osmanthus*; these were all planted in a strictly formal manner, *i.e.*, at regular intervals over the bed, and the whole of the bare soil was then carpeted with *Herniaria glabra*. The soil was raised well above the level of the turf, so that even the base of the shrubs as well as the green ground-work are visible from all parts of the garden, which consists almost entirely of flower beds, but for all that, the bed of shrubs has, I think, come in for the largest share of admiration.

ROSES.—*Souvenir de la Malmaison*, *Gloire de Dijon*, and *Reine Marie Henriette* do well here, and rarely indeed does it happen that flowers cannot be had from one or the other, frequently all three of them between the months of April and December. Of *Souvenir de la Malmaison* I have more than once cut from the open border a fine handful of half open buds on Christmas morning, and it is no unusual occurrence for us to cut good flowers by the score all through the months of September, October, and sometimes during November. The plants are on their own roots, and the soil a deep light loam, that is annually enriched with all the animal manure that can be worked into it. The mode of pruning—which is done in February—is simply the cutting out of old budless pieces of wood and the shortening of other shoots to the first good bud. Many of the shoots are even then from 18 inches to 30 inches long and are laid or pegged down wherever there is room for a shoot without overlapping another. *Gloire de Dijon* is pruned in exactly the same way, and this too in our soil does better as an "own-root" plant than it does either on the *Manetti* or *Brier*. From plants on walls and in the open borders it is not unusual for the season of flowers to extend to eight months out of the twelve. *Reine Marie Henriette* has been called the *Red Gloire de Dijon*, I suppose because of its continuity of flowering, as in other respects the two sorts have nothing in common. It is an extra strong growing *Tea* variety and flowers more freely and for a longer season than any other variety of that section. It does well in sheltered borders, but deserves the foremost position on walls, a west and north-west aspect suiting it best. This year we cut good flowers from the walls the first week in April, and ever since to the present time good flowers have been produced in abundance. It may safely be asserted that the variety will ere long become as popular as any in cultivation.

W. W.

SHORT NOTES.—FLOWER.

The Great Ox-eye (*Pyrethrum uliginosum*) and *Aster laevis* go well together. A large clump of these in the garden makes a fine show of colour in October, just when we want it.

Dianthus Heddeewigi Snowflake.—A bunch of blooms of this charming white variety, cut from the open ground in the south of England, has just reached me. The flowers are as large, full and pure as they were at the beginning of August, although a large number have been cut from the plants. The blooms are pure white, the petals slightly fimbriated, and unlike most of the varieties of *D. Heddeewigi*, it comes very true from seed. It is a variety well worthy a place in every garden.—R. D.

Wet weather plants.—The wind and wet have settled matters with most plants in beds and borders for this season so far as regards bloom, but though the elements have been so unfavourable, one or two have held their own and stand up bravely and look fresh and bright. The most conspicuous in these respects are the *Michaelmas Daisies* and *Pyrethrum uliginosum*, the first named of which cannot be too highly praised for borders at this season. The proper position to place the tall kinds is in clumps in the foreground of evergreen shrubs, the backing of which not only affords protection and shelter, but sets them off to advantage. Those who have not the good fortune to possess an assortment of these most useful *Asters* should make a point of obtaining some and growing them in the situations referred to, and if they do so, I venture to predict that they will next

autumn be more than satisfied with the result. Although most of them are tall in growth, several are of dwarf habit. The thing to avoid with these Asters is overfeeding, which sends them too much to leaf, and yet to see them at their best they must have good deep soil, or they suffer from drought. All the kinds spread quickly and admit of ready increase by division, which may be effected any time from now on into May. *Pyrethrum uliginosum* is not only a wet weather plant as regards the top, but its roots also delight in moist soil. Pieces planted at any time during the winter will form large masses by the succeeding autumn, and will flower with the greatest freedom.—S. D.

THE SCARLET WINDFLOWER.

(*ANEMONE FULGENS*.)

A MASS of this, as represented in the accompanying cut, is one of the richest, most beautiful, and graceful of all spring flowering plants for open-air culture. It is certainly one of the best plants that can be added to a garden. The brilliancy of its flowers during the winter and early spring months is excelled by that of no flower I can at present call to mind. I have often, on seeing the bunches in Covent Garden Market, marvelled at the difference between its brilliancy there and as seen in the garden, the thousands of flowers like fiery stars peeping out of a wealth of dark shining green foliage that

July. At any rate, whether it serves to save the stock or not, thorough ripening will almost certainly ensure abundance of bloom, and the extra trouble will be amply repaid at the proper season. When this is doing well the leaves will begin to make their appearance towards the end of September or beginning of October, and it is no unusual sight to see fully expanded flowers before the winter weather fairly sets in. A well filled bed or border of *Anemone fulgens* is a gorgeous sight, and one not easily forgotten. The flowers, besides being useful in the open air, play a large part in room decoration, for which they are well fitted, as in severe weather when the chances are against their opening well in the open air the half-expanded buds may be gathered, and in the course of a day or two will open in a warm room, cleaner, and some people think larger and finer than when allowed to open outside. Propagation by division of the roots seems to be the only satisfactory way of increasing this species. Seed is ripened freely enough, but the seedlings vary so much and are generally inferior in brilliancy to the best strains, that it is best and safest to resort to root division. K.

Michaelmas Daisies.—Those who use Asters merely as tufts or clumps in the mixed border have little idea of the effect they can be made to give

myself at equally bad work—trying to get English names for my Asters, turning *A. cordifolius elegans* into "Lilac Starwort." I am sure Mr. Elwes will not forgive me. But he is a learned botanist, and we are only simple gardeners, and have no desire to be anything more. But we wish to speak to people in the easiest way we can about the flowers growing about their doors. Probably Mr. Elwes will take a clearer view by-and-by when he has looked into the thing a little more. In early years I was impatient with anybody who did not use Latin names. Mr. Elwes will probably find in the end that it is a greater barbarism to urge the use of a strange tongue upon English people about garden flowers than to speak of them in our own now great language. Part of the real scholarship of the future will be the finding of beautiful English names for plants and trees. A glance into early English plant books like Gerard would show how much more thoughtful botanists of that day were in giving English names, and many beautiful ones will be found in this and other books of the time, and which ought to be used again.—ED.

HEPATICAS.

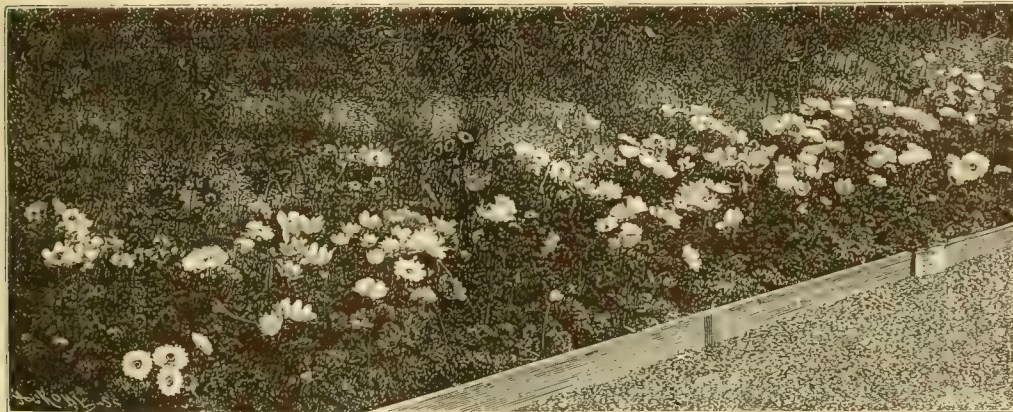
I HAVE just gone through my collection of Hepaticas in pots, dividing and repotting any plants that may require it. It is worthy of remark that I find some self-sown seedlings among plants plunged in pots in a bed of Cocoa fibre in a north aspect where a glimpse of sunshine rarely falls, but scarcely one from strong plants growing under a west wall, when they attain to a large size. In order to encourage the production of self-sown seedlings, as soon as the plants go out of bloom I top-dress freely with a fine compost, so that should seed ripen and drop upon the surface they may have something to root into. For three years past not a single seedling has put in an appearance, although the single white and blue varieties bloom with great freedom. Under the west wall the plants have a warm time of it during summer, but, as I have just stated, they do well, with the exception of the double blue; this I had to take up and pot. I could not get it to start into growth.

When visiting Mr. Samuel Barlow at Stakehill last summer I obtained from him a plant of a double blue of a much paler colour than I had previously grown. The flowers appeared to me to be larger and fuller also than those of the ordinary dark double blue, but that might have been an accident of cultivation. The plant is doing well, and I hope to exhibit both varieties in the coming spring.

The double blue and the single red appear to be the scarcest of the Hepaticas. My experience leads me to infer there is a certain amount of delicacy of constitution about the single red variety which makes it scarce. This and the double blue are always higher priced than any of the others on account of this scarcity. The single red is one of the loveliest of Hepaticas, and one does not wonder at it being so great a favourite. There are to be met with different varieties of it, some more deeply coloured than others, but all beautiful, and some with broader petals and better formed flowers than others. But depth of colour is still desirable, and I have not yet met with anything approaching what might be termed a shade of crimson, though it is not improbable such a colour exists.

One great charm about the double red is the freedom with which it blooms. It is exceedingly free, well-established plants throwing up a large number of rosette-like flowers of a deep pink or pale rose colour. I do not know whether there are varieties of this, but any increase in the number must come from sports, or from seed saved from the single red.

The single blue is very free blooming; it is also very plentiful, and probably affords more variety than any other. If anyone were to purchase a dozen plants of the single blue they might reason-



A bed of the scarlet Windflower (*Anemone fulgens*).

helps to deepen their brilliancy. It is a native of Southern France, confined to a limited area, and that chiefly cultivated fields and vineyards, and forms one of the sights of the Riviera so often quoted by the Continental traveller. It is nearly allied to *A. stellata*, and though, perhaps, no more than well-marked varieties, their few distinctive characters are quite sufficient to warrant the grower in giving them separate names. *A. Pavonia* is believed by many to be the double form of *A. fulgens*, and whether this be so or not matters not to us so long as they are distinct garden plants and fill a gap in our gardens when otherwise they would be dull and flowerless. The culture of these Anemones is a comparatively easy matter where the soil is at all suitable, but even where the reverse is the case the labour will be well repaid by the brilliant display of these lovely Windflowers. In light, sandy and well drained soils with a good exposure to the south, and where the roots can get a thorough baking during summer, little will be gained by lifting and storing, but, on the other hand, where the soil is of a heavy or clayey nature the roots will often be saved by lifting and laying them on the surface to be ripened, after which they may be replanted at any time towards the end of

when massed in clumps of Rhododendrons and other dwarf shrubs. There are, perhaps, about a dozen really handsome kinds, and amongst these the New England Aster (*A. Novæ-Angliæ*) and its two varieties take a high place. The New York Aster (*A. Novi-Belgii*) is the most prolific in varieties, and amongst these Robert Parker, *densus*, Harpur Crewe, *grandiflorus*, *angustifolius*, *discolor*, and the charming *formosus* are about the best. Many of the other species may also be used for the above purpose, and some are indeed very effective, and, moreover, present such a diversity in size and colour of flowers, height, and habit, as to fit them for almost any position amongst either dwarf or tall shrubs.—K.

A hater of English names.—As I have always opposed the invention of barbarous, useless and unnecessary names for plants which already have such a model name as *Lewisia rediviva*, I was surprised to see that the name of "*Spatium*" was inserted by the editor of THE GARDEN, in a note by me published on Sept. 7, and which I have just seen. I do not know who invented the name or what it means, but I never heard of it, and do not wish my friends to think that I am responsible for its use, as they might do without this explanation.—H. J. ELWES, *Preston, Cirencester*.

*** I did not do it! But it is my wish that English names should be used in all cases where they can be, even if not good ones. I was away, amusing

ably look for differences of tint in the blossoms. I think it more than probable a large number of the single blue types are simply seminal varieties, and it is only reasonable to expect variations in these. I have only a few plants, but by reason of being gathered from one source and another I can perceive differences in colour, and also in the size of petal and form of the flowers. I have them of lilac shades. I have one or two of a much deeper flush of blue than is usually seen. I have some large plants under a wall that are rare pictures of beauty in early spring; they throw up enormous tufts of blossom when there is little else to greet the eye. The only self-sown seedlings I have obtained from the single blue came on the bed of Cocoa fibre where the plants are plunged. *Angulosa* does not appear to seed, at least as far as my own experience goes. It is one of the freest of *Hepaticas*, a strong grower, and will do in almost any position. I have two or three reputed varieties, but the differences are not very pronounced. It is a species that is now very plentiful and can be obtained at a low price.

The single white is a great favourite of mine, so chaste and delicate are its blossoms in early spring. It is a strong grower, and in suitable soil soon attains to a large size. There are differences in the varieties; some are of a purer white than others, some have broader petals and are better formed, and there are differences in the colour of the anthers. It is a delightful spring-flowering plant of a very winsome character. It does well in pots or in the open. The double white still remains an undiscovered quantity. But it is somewhat singular that we should lack but one double form, that of the white. Is there any reliable record of its ever having existed?

In planting *Hepaticas* in the open as well as in pots, I give them a good yellow loam, plenty of leaf-mould, and a little sand. When planting in the border I dig a hole a foot in depth, fill in with some of this compost, then plant, and in doing so the soil is pressed firmly about the plants. The numerous hair-like roots soon get to work in it, and then the plants rapidly increase in size. In potting I use the deepest pots I can get, so that the roots can go downwards, and when the pots are plunged in a bed of fibre the plants can scarcely fail to do. I re-pot in September and divide at the same time. Any divided pieces with single crowns are placed round the sides of flower-pots; in a year they have established themselves, and are then potted singly into long toms, adapting the size of the pot to the capacities of the plant.

Cannot one of the nurserymen who grow a representative collection of *Hepaticas* exhibit a group at one of the meetings of the Royal Horticultural Society in the spring? I think it is because the varieties are so seldom seen that they are so little grown. If small baskets or pans of the different varieties could be shown it would prove interesting, and we could then see how much of vernal beauty there is in the *Hepatica*, and also help to save it from a grave danger that appears to me to beset it—that of finding a place among neglected plants.

R. D.

Birds v. seeds.—Sparrows have usually given me a good deal of trouble in relation to Marigolds, destroying the big double flowers of the African mercifully, also eating Cauliflower, Lettuce, and various other seeds ripening in the autumn before ready for harvesting. This season they seem to be absolutely harmless. I note that they rise in flocks from patches of Groundsel or where Grass has seeded freely, for weeds have been a terrible trouble this year, but the birds have left valuable seeds alone. If that kindly toleration will continue for another week or two I shall have good reason to rejoice. Only last week when in a nursery where African Marigolds were largely grown I noticed that the ground beneath the plants was strewn with the yellow florets. Inquiring the cause, I found that the plan of cutting the florets clean off was adopted when the flowers were fully blown, because the birds had in previous seasons wrought such havoc in tearing the blooms to pieces.

Still there it was admitted that the birds were less troublesome this autumn than usual. It would seem therefore that birds are harmful just in proportion that they are lacking food in other directions. Perhaps those gardeners who suffer severely from the depredations of birds might mitigate the evil appreciably by feeding them with some cheap food and so satisfying their hunger. It is evident that we cannot destroy the birds, neither can we well shut them out from our gardens. If we did, most likely we should in a year or two be glad to have their company again, whilst the country or even gardens without birds would often resemble a city of the dead. We do, on the whole, know more of the evil wrought by birds than of their good deeds; hence they get discredit too often unduly.—A. D.

KITCHEN GARDEN.

THE TOMATO SEASON.

ALTHOUGH the Tomato crops are not nearly exhausted, the time has once more arrived when we may take a retrospective glance at what has been done during the season. On the whole, both the growers and consumers have fairly good reason to congratulate themselves upon the results, as, in spite of some very bad failures, Tomatoes were never more abundant—I may go even farther and say never so plentiful and cheap as they have been this summer. Unfortunately for the home growers, extraordinary quantities of fruit have been imported, principally from France, I believe, and these, although of inferior quality, were yet the cause of exceptionally low prices prevailing. Consumers in most of the larger towns in the country had much the best of it, as the smaller provincial centres had to rely principally upon locally-grown supplies, and these, though plentiful at times, were never very cheap, being for a short period only, or during September, down to 4d. per pound. Nobody ought to grumble at paying 6d. per pound for good house-grown fruit, and at that price, when plentiful, Tomato-growing would pay. Of the ever-increasing popularity of Tomatoes little need be said, as, according to my experience, the question is not who eats, but who does not appreciate them? A great number of varieties are not to be recommended to those who grow principally for profit, and the aim of the cultivator should be to find out which are the best croppers or the most suitable for any particular method of culture, regard also being paid to the tastes of the buyers, an attractive exterior being perhaps the greatest recommendation. There is no reason, however, why private growers should limit themselves to the cultivation of two or three varieties, a well-grown collection, whether under glass or in the open, being decidedly interesting as well as highly ornamental, and there is scarcely a variety that can be named for which a use cannot be found, either for the ripe or green fruit. As yet we hear of but few entertaining the idea of utilising Tomatoes for the dessert; but when we see so many eating them as gathered from the plants with greater avidity than they would less easily digested Apples, surely the time is not far distant when some of the medium-sized or small fruit will be considered fit to be thus used.

This season we have been able to grow a considerable number of varieties both under glass and in the open, among these being several distinct, if not particularly valuable novelties. As far as all-round value is concerned, this including attractive appearance and high quality, the place of honour must be given to Ham Green Favourite, as being decidedly the best of the

Perfection type that has yet been extensively tried here. It is a grand cropper, setting freely at all times, and nearly every fruit is a model of what a good Tomato should be. Some are very fine, or exactly what exhibitors like to stage, and the rest are of good size—the colour, a rich red, being exactly what is needed for both exhibition and marketing purposes. Ham Green Favourite has also been one of the greatest successes in the open air. A variety received from Messrs. Vilmorin-Andrieux and Co., Paris, under the name of *Chemin Red Early*, very much resembles Ham Green Favourite, and in my estimation is a formidable rival. It succeeds admirably both under glass and in the open, producing grand clusters of round, extra deep, well-formed fruit, rich red in colour, and of superior quality. I noticed that this variety was shown by the Messrs. Vilmorin at the Vegetable Conference, and quite held its own against all comers. Hackwood Park and Perfection, though yet among the best that can be grown, do not compare favourably with the two varieties previously described. The other additions to the Perfection type come principally from America, but none of them are of superior merit. Lorrillard was very much over-rated, being far from heavy cropping with us, and it will not be tried again. Volunteer is superior to the last named, this producing a fairly good crop of handsome, medium-sized, richly coloured fruit, the quality also being good; but this again is not wanted. Mayflower and Livingstone's Favourite are only other names for Perfection, but I fancy a richer colour and rather superior flavour can be detected in Daniels' Crimson Queen.

Heavy, handsome fruit are to a certain extent popular, and not a few private growers pride themselves on the great weight of some of their finest Tomatoes. Few now cultivate The Trophy or Stamfordian, and General Garfield and Hepper's Goliath are also rarely met with, their places being taken by Mikado or Turner's Hybrid. Of the latter there are two forms, differing only in the colour of their fruit, one being of a dark red and the other of a deep pink shade. Neither have done well with us under glass, but against sunny walls they have cropped admirably, the fruit being large, very heavy, and superior in quality to that of any other variety ripened partially or wholly in the open air. Yet another colour has been added to this type, the new Yellow King, which has the same plain broad foliage as the Mikado and produces equally as large fruits, which when ripe are of a rich yellow colour and fairly good quality. I have not tried this under glass, but it succeeded well in the open.

Of the corrugated red-coloured varieties of which the old Large Red is the best type, not much need be said. For the earliest and latest crops under glass a good selection of Large Red is yet unsurpassed for its free-setting qualities, the quality and colour also being good, while if the large ugly blooms are pinched out early not much fault can be found with the shape of the rest of the fruit. Dwarf Orangefield is also exceptionally heavy cropping and the quality is good. Both this and the preceding succeed well in the open, the crops this season being remarkably good, but the fruits are much less attractive in appearance than when grown under glass. Laxton's Open Air may be said to be an improved Dwarf Orangefield, and is especially to be recommended for open-air culture. With us it was the first to ripen and the crops have been heavy.

There have been several noteworthy and fairly valuable additions to the list of medium-

sized, smooth, round, red-fruited varieties, of which Hathaway's Excelsior is a good type. The latter, however, if true to name is yet worthy of culture, and one of the best dishes of Tomatoes staged at the Vegetable Conference was of this variety. Gilbert's Surpasse when grown under glass somewhat resembles the Excelsior, the fruits being very attractive in appearance, but in the open air become coarser and certainly not improved in character. Horsford's Prelude, an American introduction, is very productive under glass, but the bulk of the fruit is rather under-sized, and this variety will not long enjoy popularity in this country, as it is greatly surpassed by Chiswick Hybrid, a valuable novelty obtained at Chiswick by crossing Horsford's Prelude with Perfection. Chiswick Hybrid is a great cropper both under glass and in the open. The crops on nearly all the plants of the different varieties grown in the open borders clear off, but sheltered by the walls at Chiswick were excellent this season, but none equalled that of Chiswick Hybrid. One specimen selected at random from a good breadth of plants and trained with a single stem to the top of a stout stake was bearing five large clusters of fruit, the lowest having eleven fruit, weighing probably not less than 2 lbs., and altogether three dozen fruit would be cut from that single cordon. Most of the samples were of a medium size, such as fruiterers like to receive, and all were of a deep rich red colour, the quality also being good.

All the varieties with Plum-shaped fruit are wonderfully productive, and some of them are well worth cultivating. What I received as Yorkshire Wonder much resembles the old Vick's Criterion, the colour being the same. As described in advertisements, the colour should have been bright red, and it is to be hoped I was not supplied with the wrong form, as mine is nearer pink than red in colour. It is a tremendous cropper, ripens early, and the fruits are very even in size, solid, and good in quality. King Humbert, or Chiswick Red, is also an excellent cropper, especially against a sunny wall, but the quality is poor. Golden Nugget equals the two last named, as far as heavy cropping in the open air is concerned, and is very ornamental, but the flavour is not first-rate.

There are now numerous and perfectly distinct yellow-fruited varieties available, but, as far as my experience goes, none of them equal the best red kinds in quality, all being more or less wanting in acidity. Exhibitors will be most pleased with Henderson's Golden Sunrise, this being, in all but colour and quality, an exact counterpart of Perfection. It is a heavy cropper, the fruits are large, of good form, golden yellow in colour, and of fairly good quality. Yellow King has already been alluded to. Blenheim Orange is quite distinct, the colour being of a clear orange-yellow, tinged near the crown with crimson. It proves very productive and, for this class, good in quality. Golden Eagle grows vigorously, sets freely, and the fruits are medium sized, round, orange-yellow in colour, and when grown under glass the quality is very good. Much the same remarks apply to Golden Queen, while Green Gage is better in the open than under glass.

There yet remains the rest of the cornelian or pinkish red varieties to be briefly alluded to. Dedham Favourite is now well known to be most productive both under glass and in the open, our crops of it against the outside front wall of a forcing house being exceptionally good. The colour is its only drawback, as both the form and quality of the fruit are good. Dwarf Champion grows very sturdily, the habit of

growth and the stout foliage being very distinct, but with us it is a shy bearer. The fruits are of good size, smooth, round, and solid, the quality being satisfactory. Another equally distinct novelty was forthcoming in The Peach. This is of strong growth, the foliage being of a glaucous hue, while the fruits, freely borne in long clusters, are rather small, quite round and smooth, of a dull red colour, and prettily veined. When ripe they are rather soft, and by some are considered of superior quality, but there are others I prefer. Where variety is liked, The Peach ought certainly to be grown.

W. IGGULDEN.

Deep-planted Leeks.—In blanching Leeks the plan so commonly employed in the north, of dibbling the plants deep down in the soil 12 inches apart, the ground being well manured and deeply worked, is a very good one. In that way a length of some 6 inches of well-blanching stem of fair useful size is found, and, as a rule, the flesh when cooked is less strongly flavoured than is the case when the stems are of great size. In this way the labour is lessened. The earthing-up process demands considerable attention, and in gardening labour-saving methods are worthy of consideration, especially when as effective results may be secured by simple means.—A. D.

Cheltenham Black Beet.—Amongst kinds not so popular perhaps as it merits, but which received more certificates for quality than any other at the recent vegetable conference, is the Cheltenham Black, a kind which has shortish green tops, but black roots of fine market quality. These awards were made by the general committee of the conference on the third day, because it was found that some of the jurors had been rather too sparing of awards of this nature. The Cheltenham Beet is undoubtedly one of the very best dark Beets we have, and, as shown from various sources, it was true to character, and that is more than can be said of any other Beet shown in quantity. That it has a green top, militates, perhaps, against its culture, favour being shown to the dark-leaved Beets. Where a really rich red or blood-red Beet is desired, a fine pure strain of the old Dell's well preserved is perhaps best, but for a black Beet, soft, and of good flavour, none seems to excel the Cheltenham.—A. D.

Cauliflowers.—I find that the most satisfactory way of treating plants of these that are wanted to stand the winter and turn in early in spring is to pot them, unless there is a sufficiency of handlights available to plant them under, as when established in pots they can be put out without disturbing the roots, and therefore suffer no check, which not only favours their early flowering, but they are much less likely to bolt than they are when their growth is retarded. The pots we use are 3 inches in size, and in each of these we place one plant, potting them principally in leaf soil without using any crock over the hole in the pot. The potting complete, the plants are then plunged in a cold frame up near the glass and kept close for a few days after being watered to settle the soil. As soon as the plants will stand without flagging, the lights are removed during the day, and at all times air is freely admitted when the lights are not off by tilting them up, as any coddling by keeping close is bad for the plants. Many do this through thinking that Cauliflowers are more tender than they really are, but it is surprising what frost and cold they will stand if only kept dry at the tops. Plants in handlights should be treated much in the same way as those in frames, that is in having plenty of air given at all times either by crossing or tilting the covers behind, the latter being preferable on account of throwing off more of the rain. In cases where neither frames nor handlights can be spared, Cauliflower plants may be pricked out close up to the foot of a sunny wall, fence, or hedge, with every chance of their standing, unless we get more than an ordinary winter. If so placed, it is a good plan to put 6 inches of fresh light soil on the old and give a slope to the front, which will keep the plants

higher and drier. To succeed any kept from now it is necessary to sow again very early in spring, which should be done in heat and the plants nursed on in a warm pit or frame. The best sort for this work is the Early Erfurt, which is a sturdy grower with a short stem, and one that produces fine, close, pure white compact heads.—S. D.

KITCHEN GARDEN NOTES.

DIGGING VACANT GROUND.

UP to the present time most well-managed gardens have been kept closely cropped, but now that Peas, Beans, Cauliflowers, and various root crops are being cleared off there will be many vacant spots. In numerous instances nothing is done to these beyond perhaps clearing them of unsightly rubbish till the winter is far advanced, or perhaps not before they are recropped in the spring. There are some very light, free-working soils that this let-alone policy suits well, as these when dug early break down very finely and perhaps become badly saturated, thus rendering it a difficult matter to work them properly when the time for cropping arrives. Those therefore who find that their ground can be most readily sown or planted directly after digging or before any rain has fallen on it are quite justified in deferring digging to the spring, and there are heavy soils also to be met with occasionally, which if dug now would become of the consistency of birdlime during the winter. The peculiarities of each particular garden have to be mastered by those in charge, and no general rule for their guidance can be laid down. In all probability, however, the majority of gardens might with advantage be dug now, and those of a more retentive character may well be manured prior to this being done. Especially would I recommend that as much of the trenching possible or thought necessary each season should be done now, this admitting of a good settlement before the ground is again cropped, while the fresh surface soil will most probably become well pulverised and otherwise improved during the winter. Many people delay digging till a sharp frost has hardened the surface of the ground and rendered it fit to wheel the manure cleanly over; whereas if this wheeling is done during a dry time in October, it can be done quite as readily and the manure more sensibly utilised than is the case when it lies so long in heaps and is frequently washed by heavy rains in November. If heavy clayey soils are given a good dressing of strong manure, this being worked into the trenches as the digging proceeds and covered by rough spits, frosts and drying winds will penetrate to a good depth, and the lumps will break down splendidly in the spring or any time after they have become thawed or moistened by rains. Strawy or comparatively fresh stable manure is always the best for heavy land, this being applied some time in advance of the cropping time; whereas cow or mixed farmyard manure is to be recommended for lighter soils, this being of a slower, cooler, and more lasting nature, and serving to make them more retentive and fertile. To apply manure to light gravelly soils now would be simply wasteful, as in all probability the greater portion of its manurial properties would be washed down into the drains during the winter and be lost. Some of the heaviest and best crops I have ever seen taken from a private garden were grown on a moderately heavy soil, this as much as possible being dressed with solid manure and deeply dug in the autumn, slightly redug when dry enough in the spring, and further given a liberal application of special manures prior to recropping. Land thus well cultivated is well pulverised, and therefore sweetened to a greater depth than is usually the case, and being in a most fertile state, it is capable of producing grand crops in almost any season. The gardener whose treatment I have just described rarely trenched any portion of the ground, believing his method of procedure superior to any other that he had tried.

WHAT TO DO WITH RUBBISH.

Rubbish accumulates rapidly at this season of the year, and as soon as the trees are stripped of leaves the heaps are apt to become too conspicuous

and unsightly. These accumulations, however, are if properly treated, valuable, the greater portion of them, either in the form of ashes or decaying manure, being returnable to the garden where they will prove excellent for many crops. Advantage ought to be taken of fine weather to thoroughly overhaul these heaps of refuse. All that is insoluble or will not quickly decay should be charred or burnt, and the rest made into a heap to further decay. The former should be converted into a "smother," or slow fire, and may well be kept going for a week or more, a grand heap of valuable "burn-bake" being the result. It is necessary to first make a rather fierce fire with the aid of Pea haulm, old stakes, and, if it can be spared, a heap of old faggot wood. This when burning strongly should be enclosed with the roughest of the litter, including Cauliflower stalks and such like, this in its turn being covered with the finer rubbish, including weeds and other matter that ought to be burnt. The flames should be confined as much as possible, a smouldering fire best meeting the case. Not unfrequently we have added to the bulk and value of the heap by digging spits of turfy sods from banks of ditches and elsewhere, these being placed Grass inwards over the fire the last thing at night. If necessary, an opening must be left on the windy side of the heap the better to ensure a good draught, as it is possible to quite smother a fire. Much depends upon a good fire being made with substantial materials at the outset and the prevention of any great outbreaks of flame. The contents of the heap as soon as sufficiently cool ought to be stored under cover, much of their valuable properties being wasted if they are allowed to become saturated with moisture before they are used. For sowing with seeds, surface-dressing, and mixing with composts, this "burn-bake" is very valuable. That part of the original heap, or the greater portion of it, which promises to decay in time to be wheeled on to the ground during the winter ought to be thrown up into a square heap, and if quicklime can be well mixed with it at the rate of one load to five loads of rubbish, this will hasten decomposition and also greatly improve its value as a manure. In some instances it is advisable to char the whole heap of rubbish, this being especially the case where the ordinary garden soil is stiff and solid manure abundant. The heap of charred and burnt material thus obtained is of the greatest service for lightening the ground prior to seed-sowing, being forked into (not dug) and well mixed with the surface. It is also very suitable for covering various seeds, this tending to cause a better germination and also to ward off slugs and insect pests generally. Near here it is being largely and effectively used for moulding-up Celery. In this case the ground is very stiff, and therefore not easily reduced to a sufficiently fine state to properly surround the Celery, and in addition is much infested with slugs.

W. I.

Outdoor Tomatoes.—Some of your correspondents point out that the supply of Tomatoes from outdoor plants is so precarious that little reliance can be placed on them. The dread disease that almost invariably comes on with any lengthened spell of stormy weather is a serious drawback to outdoor culture, and then the early frosts that are so destructive in low-lying and inland places reduce the chances of ripening outdoor crops in our too brief summers. But what I wish to draw attention to is the fact that while some outdoor crops were killed by frost the third week in September, ours are still (Oct. 7) ripening fine crops. I can cut bunches of 2 lbs. or 3 lbs. each of splendid fruit, the best I have had this season, and as I can put the plants out a fortnight sooner than in most inland places, it will require little argument to prove that the south coast offers great advantages for outdoor Tomato culture. The soil, too, is very well adapted for inducing early fruitfulness, being light and well drained. Even on the most stony pieces we have, fine crops of Tomatoes are produced, and it is surprising how well this crop stands the drought in summer, as when the heat has been intense and other succulent vegetable crops droop for want of rain, the Tomatoes, thanks

to their strong rooting habit, have been luxuriant and fruitful. Anyone wishing to go in largely for this crop out of doors ought to look about the coast for suitable soil, as much that is of little value for agricultural purposes would grow fine crops of Tomatoes. One of my neighbours gets fine crops on the south side of an old unused gravel pit by making ridges of soil for the roots to run in.

—J. G., *Hants.*

TOMATOES.

IN THE GARDEN, Oct. 5 (p. 317), the remark is made concerning Tomatoes that "Hackwood Park is evidently a selection from Perfection." There would be no harm in going a little farther and asking, What is the origin of Perfection or from what was it selected? I can throw some light upon one strain of the home-grown Perfection. Several years since, Mr. Bowerman found in his batch of Trophy one plant of superior merit, a freer setter, and with rounder fruits. He saved stock and grew a quantity of it the following year, but gave a fellow gardener some seed to test it also. Later the stock in one case came into commerce as Hackwood Park, the other as Perfection. But there can be no doubt but that we owe all our present beautiful strains of round smooth Tomatoes to Hathaway's Excelsior, a variety which in the struggle for novelty has been rather unfairly overlooked. Hathaway gave to us round, smooth, handsome fruits, but not at all large ones. We had but to cross Excelsior with Trophy and Perfection or that type came out in scores. Without doubt a cross of that kind was effected in scores of places in the country, both at home and in America; hence the strains of Perfection here and in America, for they are practically identical, have come in abundance. There is nothing remarkable in the use of the appellation, for we cannot hope to get more perfect fruits than are the best and handsomest of to-day. It is certain, however, as Ham Green Favourite, Horsford's Prelude, and some other free setters have shown, that more prolific bearers are possible, but it is doubtful whether that remarkable cropping seen in these forms and the Perfection-Ham Green cross Chiswick Hybrid, will be ever found associated with large fruits. It would seem as if the capacity of plants to produce beyond a certain weight of fruit was limited. I do not see that large fruits are a gain. They look very effective on the exhibition table, and being also very handsome and high coloured naturally secure prizes, but for ordinary trading fruits too large are not so acceptable, especially when sold retail in small quantities. The Chiswick variety seems to present the very ideal of what is needed in Tomatoes, a very free setter outdoors or within, a huge cropper also, and for that reason fruits very round, smooth, and handsome, and of fair medium size, just such as the trader prefers. But then there can be no patent rights in Tomato crossing, and we may hear of a score of similar crosses producing probably just the same results, but all heard of under diverse names. Now, we do not want a score of such products, because they will be mere reproductions, but what we want is a really high flavoured Tomato, one having not imaginary, but actual high, brisk, pleasant flavour, for once such a desideratum is found and the Tomato will leap from the low position of being merely a culinary fruit into that of a position on the dessert table at once, and a new stimulus would be given to Tomato culture. As it is there are thousands who like ripe Tomatoes raw and eaten as Apples. To me they are pleasant and refreshing, but then they do not make the palate crave for more. Of course all fruit must have their specific flavours, but the Tomato has at present so little of any kind that any infusion of flavour would be heartily welcomed.

A. D.

Horseradish.—At Castle Hill Gardens, Englefield Green, Mr. W. Swann practises what he terms the Lancashire method of growing Horseradish. It is probable the plan occupies more room than does the vertical rooting method so generally practised, but the excellence of the samples obtained and the

ease and facility with which they may be lifted, compensate fully for any disadvantage. The rows, as I saw them the other day, are about 42 inches apart, the beds being really set out 4 feet apart, with narrow alleys between. The soil is deeply dug and well manured, then portions of root of about the dimensions of a stout tobacco-pipe stem or the upper part of a whip handle, and from 10 in. to 12 in. long, are selected. These are laid in about 2 inches beneath the surface, their points towards each other and the larger ends towards the sides of the bed, each bed, therefore, having two rows. They are covered up, and during hot, dry weather well watered, the result, as I saw ample evidence of the other day, being the production of the handsomest, straightest, and cleanest stems possible. Have any southern readers of THE GARDEN tried this method, and if so, what is their opinion of it?—A. D.

GARDEN FLORA.

PLATE 723.

ROSE COMTESSE DE NADAILLAC.*

COMTESSE DE NADAILLAC is the most beautiful Tea-scented Rose in the world; further, it is on every hand admitted that it is among the Tea-scented Roses that colour, form and fragrance all reach the highest point of refinement and delicacy. Consequently, it may fairly be urged that Comtesse de Nadailac is the most exquisite Rose, so far, in existence.

Sent out in 1871 by Guillot, of Lyons, this Rose has steadily risen in public estimation, until it is now firmly established as the reigning queen of beauty—a position secured in no small degree through the superlative skill displayed in growing and exhibiting the variety by Mr. George Prince, of Oxford, whose name has become almost as closely associated with Comtesse de Nadailac as with the cultivation of the seedling Brier as a stock. No one who has visited the metropolitan and southern Rose shows of late years can have failed to be struck with this lovely Rose, and probably the wonderful beauty of the blooms from Oxford has inspired with a desire to grow Roses not a few even of those mockers who had previously failed to see any cause for enthusiasm about flowers that were "all round and all red, more or less!"

Unlike so many of our great Roses, Comtesse de Nadailac is not the solitary fortunate production of its raiser, but is one of a long series of which the house of Guillot may well be proud. Just as Lacharme was *facile princeps* as a raiser of Hybrid Perpetuals—a distinguished position which there is every reason to hope we shall in future see occupied by some of our own countrymen—so amongst raisers of Teas the house of Guillot stands a head and shoulders above its fellows. Their list dates back as far as 1848, when Mme. Bravy, always so much admired that she has been reproduced under various synonyms no less than three times, was first introduced to the public, to be followed ten years later by Mme. Falcot, still one of the most charming and popular bud Teas. Then came Mme. Margottin (1866), Catherine Mermet, the most perfect model of form, and Mme. Hip-

* Drawn for THE GARDEN in Mr. Girdlestone's garden at Sunningdale, Ascot, by H. G. Moon, June 15, 1889. Lithographed and printed by Guillaume Severeys.



ROSE "COMTESSE DE NADAILLAC"

polyte Jamain (1869), Comtesse de Nadaillac (1871), Angèle Jacquier (1879), Etoile de Lyon and Mme. Cusin (1881), Hon. Edith Gifford (1882), Mme. de Watteville (1883), Souvenir de Gabrielle Drevet (1884), Mme. Hoste (1887), and Ernest Metz (1888), which has already furnished many lovely blooms and will take a prominent position even among the members of such a distinguished family. This list is not by any means an inclusive one of the contributions to our Rose gardens of the Guillots, father and son, being merely the cream, so to speak, of their Teas. The hybrids they have sent out, however, although less numerous, are of the same high quality, for how could we do without La France (1867), Horace Vernet and Monsieur Noman (1866), and Eugénie Verdier (1869)? or even Sénateur Vaisse (1859), Marie Cointet (1872), Comtesse d'Oxford (1869), and the very distinct and charming Gloire Lyonnaise (1884)?

The past season has been essentially a Nadaillac year, a fact pretty clearly indicated by Mr. Mawley's analysis of the exhibition of the National Rose Society held at the Crystal Palace on the 6th of July, from which it appears that blooms of Comtesse de Nadaillac were staged in prize-winning stands not only more numerous than any other Tea, but in greater numbers than any other Rose exhibited. This proves to demonstration the truth of the statement that if only a Rose be really of the highest beauty no one will be deterred from growing it by any ordinary difficulties of cultivation. For it may as well be at once admitted, with whatever reluctance, that Comtesse de Nadaillac, although the loveliest of Roses, is not by any means one of the easiest to grow to perfection. The plant is not, as it has been often described to be, delicate in the sense of being specially liable to injury from frost, but it makes short stiff wood upon which the "eyes" or growth buds are set at long intervals, and protected by numerous deep-coloured, rigid prickles. Good flowers may be obtained very often by pruning hard, but the best way to get large blooms in their greatest beauty and richness of colour is to grow the plants against a wall or fence facing south-east, and not to prune them at all, only thinning out the buds and growth if necessary where crowded. The flowers develop slowly, and should consequently not be cut too young, for their size and depth of colour often increase surprisingly on the plant, even after the blooms have reached a point at which those of most other varieties are at their best for cutting. The cutting of the flowers too young, though a fault on the right side in the case of most Roses, has probably been the cause of a good many disappointments with Comtesse de Nadaillac, whose great beauty of colour, being internal, is to some extent lost if the blooms are cut before being sufficiently expanded.

A comparison of the flower with the bud in the accompanying coloured plate will at once make this clear, for it is the wonderful

warmth and sympathetic glow of colour in the depths of the open flower that constitute the irresistible charm of Comtesse de Nadaillac.

Perhaps the flower here figured would have been rather more perfect had it been drawn one day sooner; but it is, nevertheless, characteristic in form, as well as giving a good representation of the wonderful glowing rosy orange colour with which the whole flower is suffused.

The stock upon which Mr. George Prince has grown Comtesse de Nadaillac with such success at Oxford is the seedling Brier, and it may also be well grown on Brier cuttings; but a stock upon which it has of late years been found to grow freely is *Rosa multiflora*, not the variety de la Griffieraie, an often mischievous and never valuable stock, but the parent Japanese species first generally cultivated of late years under the name of *Rosa polyantha*, of which cutting stocks are made and root as easily as Manetti.

On either this or dwarf Brier stocks in various situations and under various circumstances, against walls and in the open, should everyone who wishes to grow to perfection the loveliest Rose in the world cultivate Comtesse de Nadaillac.

T. W. GIRDLESTONE.

ROSE GARDEN.

ROSES AT THE PARIS EXHIBITION.

AMONG the Roses exhibited in bloom at the Paris Exhibition in October I found that, with the exception of La France, there were very few Hybrid Perpetuals amongst them. Unfortunately, this is a state of things by no means confined to the Palace of the Trocadero. *Homère*, the most useful of all our late Roses, is also but little used, and I do not remember seeing *Celine Forestier* in any quantity, though the *Maréchal Niel* was tried and mostly found wanting in bloom. But obviously there is a fashion in varieties of Roses as of other things in different countries. Neither are such fashions so capricious as is often assumed, for to a large extent they are often the products, as it were, of soils and climate, and it is often wiser and more profitable alike for money-making and effective decoration to grow a thousand or two thousand of one variety than a thousand or more varieties. By the way, has any grower found a hundred varieties of Roses thrive equally well with him? If not, where is the advantage in growing one or two hundred varieties instead of say the fifty that grow most freely, remain longest in health, and make the richest display in any given garden?

In going through the Exhibition, I suddenly came on an arcade of climbing Roses of such exceptional vigour and verdure as to deserve special notice. It spanned one of the secondary walks in the grounds of the old exhibition, on the right hand side of the gardens of the Trocadero, in that beautiful network of groups of shrubs, trees, flowers, Ferns, rockwork, and running streams that flanks the corridor devoted to sculpture and architecture in the old palace. The Roses are planted rather thickly in rows about four abreast, and so many as are needed to thickly screen the walk are trained over it from either side. The result is a dense shade of Rose shoots of the deepest verdure; and though there were no flowers on the Roses in October, this possibly arose as much from their being too thickly planted, youth, vigour, and liberal feeding, as from the varieties employed. They are given here as an illustration of the very considerable variety that may be produced through the use of Rose leaves alone, and

of the rapid clothing properties of Roses when planted in masses and trained thus in a common direction and for a uniform purpose. The leaves of the two white Banksians, the common and Fortune's White, give very unique and distinct touches in combination with others. *Maréchal Niel* had been tried, but possibly owing to mildew it had been beheaded about 3 feet from the ground. *Gloire de Dijon*, *Apoline*, *Mme. Berard*, *Wm. Allen Richardson*, *Marie Van Houtte*, *Mme. Alfred Carrière*, *Reine Olga de Wurtemberg*, *Mme. Plantier*, *Bennett's Seedling*, *Reine Marie Pia*, *Rêve d'Or*, *Belle Lyonnaise*, *Claire Carnot*, *Waltham Seedling*, *Princess Stephanie*, *Spectabilis*, *Beauty of Glazenwood*, *Caroline Marneux*, *Gloire Lyonnaise*, *Jules Margottin*, and *Unique Jaune* were all grown in this way.

Those who have visited French exhibitions will long have learned that there are more ways than one of showing Roses in boxes. Our mode is too well known and too generally disliked to need description. The French mode consists in showing Roses as flat as possible in boxes over a yard square. These boxes are filled with Roses in groups of threes or otherwise, crushed in without much plan or taste. There were nine or ten such boxes this October, and the effect, especially from a distance, was brilliant rather than pleasant. Numbers and mass seem, from the quality of those exhibited, to be striven after rather than high quality. However, taking the date into account, these exhibits were open to the reflection that few or no private gardens in England could have furnished so many Roses in October.

It is impossible that such wholesale massacres of Roses should be continued by such a graceful nation, more especially as within sight of those ponderous boxes is to be found one of the most charming exhibitions of Roses ever seen in France or any other country. This consists of a block of Tea and China Roses about 36 yards long and 12 ft. wide in pots. The pots are plunged over the rims in the beds of soil, and the Roses do not rise above the ground more than 4 inches or 6 inches. The general blaze of colour is hardly less than that of the blooms in the boxes, and the whole mass of beauty is perhaps too even and too uniform in height for the best pictorial effects. But the difference the buds and uprising spriglets make among the Rose blooms is wide almost as the poles asunder, and without seeing these Roses few could believe it possible to force the plants into bloom so profusely so close to the ground. The majority of the plants are Teas or Noisettes of the sorts named in the foregoing list, though a few Chinas, Polyanthas, or Fairy Roses are used near the sides, and so dwarf and fairy-like is this broad mass of colour and spriglets that the whole of the ground looks as covered with a thicker carpet than usual of the most free and easy pattern and the most uniquely fresh and pleasing style of beauty. Much has yet to be learned from French and other cultivators before such dwarf Roses can be seen carrying such freights of beauty in continuity in this country. A good deal has been said and written lately about getting Roses back to earth. The French cultivators, however, so far as I am aware, are the first to have shown us how to do this to perfection. They have also succeeded in showing us how to dwarf other flowers as well as Roses, notably Michaelmas Daisies, Asters, Carnations, feathered Cockscombs, and Begonias.

D. T. F.

***Rosa rugosa* as a hedge plant.**—"R. D." in his note on *Rosa rugosa* for hedges (GARDEN, Oct. 5, p. 308) omits one merit, the beauty of the autumn tints; they are just now a blaze of gold and gold and red; a branch cut from a hedge at Wisley looks beautiful in a painting. In a note on this hedge in THE GARDEN of November 13, 1886 (p. 449), I mentioned that after trying a small hedge in front of the Wisley Cottage (the first Japanese Rose hedge, I believe, ever planted at least out of Japan) and this proving a success, I planted a second across a field 100 yards long; this has been much admired and makes a capital fence. My friend

Mr. Max Leichtlin warned me against suckers filling up the border, but in my case this does not matter, as the Rose can have the whole bed. This Rose has so many and such sharp thorns that I should doubt cattle eating it, but as horses and cattle can eat Prickly Pear, donkeys Thistles, and rabbits the lower branches of the Monkey Puzzle (*Araucaria*), this must be decided by experiment. Cattle cannot get to our hedges. When the seed of the red Japanese Rose is sown, many of the seedlings have white and some pink flowers.—GEORGE F. WILSON.

WHEN TO PLANT TEA ROSES.

OF late such prominence has been given to the Tea Roses and their great merits, that we may reasonably assume greater quantities of them will be planted during the coming season. I am afraid, however, that the advice given by "D. T. F.," privately in answer to an inquiry by letter, and publicly in *THE GARDEN* of October 5 (p. 308), may tend to do harm by deterring other intending planters. "D. T. F.'s" paragraph runs thus: "Do not plant till the end of April or middle of May, 1890." To defer Tea Rose planting till nigh upon summer is almost like throwing away a whole season, and few of us can afford to do that; nor do we wish to when we know that Tea Roses can be successfully planted in November, when by May they will have made some amount of root-growth. They will flower as early, as long, and almost as freely as the established plants of previous years. I should have been quite at a loss to understand the reason of "D. T. F." advising spring planting had he not happened to supply the key to the matter farther on in his article, for he speaks of wintering Tea Roses under glass, so that I assume he has them in pots, out of which he plants them. But whether planted in summer or winter, a Rose that has had its roots coiled up in a pot is heavily handicapped at starting, and at the end of the season is a long way behind those Roses that were budded upon a Brier stock in the open air, and had clean, straight roots that, when planted, took hold of the soil immediately and commenced to grow.

This system of planting Tree Roses out of pots is the old way, and it is surprising how long some of us have been in finding out the best plan, and how slow in adopting it. No doubt the system of planting hitherto adopted has been the cause of many failures. These failures helped to support the false doctrine of the excessive tenderness and constitutional weakness of the Tea Roses, because we rarely blame ourselves or think our systems at fault. I can understand a Rose planted out of a pot into the open ground at this season probably perishing, as the coiled up roots are not in a fit condition to work in the cold soil during winter, and perhaps the ball cannot be deeply buried, and may be frozen through and through. But "D. T. F." says "it is indisputable that many Tea Roses do die during winter, and that the mortality is greatest among newly planted Teas, for two reasons; the plants themselves propagated and grown under glass are abnormally tender at starting, and the roots are not yet attached to the soil." This is a weak admission to make after praising the supposed virtues of spring or early summer planting, but it is candid, and the reasons to which fatalities are attributed are only too true. These reasons need not be, and without them success is assured. This assertion I base upon practice, for it has been my lot during winter for the past three years to plant Tea Roses by the hundred, and not a single loss was experienced. Firstly, the plants were not propagated and grown under glass. Moreover, if "D. T. F." raises his own stock in this way, our Rose nurserymen do not. They use the seedling or the cutting Brier, bud in the open air, and when the plants are sold they are strong and hardy, instead of "abnormally tender," whilst the clean straight roots carefully placed when planted, and the soil made firm about them, soon take hold.

Assuming that Tea Roses are planted say in November, does "D. T. F." imagine that their roots remain quiet? If a Rose bush which has been lifted

is again placed in soil, little white roots at once commence to form and soon appear during the winter. If a Rose tree has an abundant supply of these little feeders at the time when top growth should commence, it will start away more strongly and better than a plant that has to form both at once, the top growth being dependent upon root-formation. I have seen the young shoots upon late planted Roses seared by wind or scorched by sun because there were no fresh roots formed. If the ground is properly prepared and not too wet, I would not hesitate to plant Tea Roses at any time from November till April, but of all months I prefer the first named one. I hope presently to plant Tea Roses in quantity. They will be open air plants, will be planted rather deeply, moderately firm, and left unprotected, and if any loss occurs I shall be surprised. I should like "D. T. F." to see some of the groups of Tea Roses planted last November, such kinds as Dr. Grill, Mme. Chauvry, Jean Pernet, Mme. Charles, &c., twelve of each. The plants, though placed at a fair distance apart, have met, and the groups look like established ones of several seasons, whilst the amount of bloom the bushes have borne this season has been quite amazing. And this not in the best of soils, for some of the groups are in soil which is little better than clay, slippery and soapy upon the surface, and unfit to tread upon after a slight shower. Once or twice I have planted Tea Roses out of pots. Especially do I remember having done so in May last year, when the occasion was an exceptional one, as the ground had not been ready previously and it was not desirable to wait till another autumn. I did not insert the bushes with their balls of roots intact, but the soil was washed from them, the roots were disentangled and the plants were put out and well watered. The bushes grew away and flowered, and all survived last winter. But had they been planted in the orthodox way I would not have answered for their surviving through the winter. Even when plants with balls of roots have lived and grown I have known them die suddenly after several years' existence, for although new roots have been made those coiled in the ball had never become loosened, but had grown thicker and tightened around one another, thus killing the plant by a process almost akin to strangling. The last instance of this sort I saw was a large Banksian Rose upon a wall, which died suddenly and without outwardly apparent reason, but upon lifting the plant the cause was at once apparent.

In planting dwarf Teas upon the Brier I often cut a nick at the junction between stock and scion, and burying this at least 2 inches, the Rose frequently forms roots of its own in the course of the season. I once had occasion to take up some plants that had been so treated. They had been planted in March and were lifted in October, and so freely had they rooted that I cut off the stock, divided the bushes, each portion coming apart with a few roots attached, and planted them out. As regards "D. T. F.'s" selection of six, there are three at least not so good as Anna Ollivier, which is equal to Marie Van Houtte, and not to be beaten among all the Teas, either for form, colour, beauty, or amazing profusion of bloom. Homère, as "D. T. F." has often told us, does well with him, but for one place where it is good there are many where it is doubtful and uncertain. It is pretty when good, but after experience with it upon different soils I intend giving up growing it, as there are so many more that can be relied upon and are always first rate. But as yet the wealth of beauty and the exceedingly varied charms that can be obtained from Tea Roses alone are unknown to many. Instead of six Tea Roses hardy, valuable, and reliable in and for the flower garden there are sixty sorts, at least twelve of each kind which I have seen flourishing in one garden. To try so many was a bold experiment in face of those popular, but most unfortunate fallacies which exist even to-day.

A. H.

Rose Gloire des Rosomanes.—Since early summer this Rose has been flowering with amazing profusion, but I have just discovered that it has a special value, for now whilst the Tea and other

Roses are crowded with buds that cannot open because of the wet, those upon *Gloire des Rosomanes* open into brilliant and beautiful flowers by reason of their lacking the substance of the full double flowers of other kinds. In summer this Rose in broad masses has a telling effect, for its vigorous shoots are terminated by huge clusters of flowers. The long rich crimson buds are very pretty, but under the hot summer sun the bud of to-day is a large, open, loose flower to-morrow, and the next day it lies upon the ground. I do not mention this in disparagement, but for comparison's sake, as now the bud opens gradually, taking several days to expand into a large cupped flower, which is not soiled by drenching rain, as it droops and throws the water off. I cut to-day (October 12) two fine bunches of buds and open flowers, and the scent of this kind, always so powerful and sweet, is as strong now as in midsummer. This is one of the Roses well able to take care of itself. The plants I cut my flowers from have probably been standing in the same spot for twenty years with little attention. It is a Rose that could be boldly used in the garden landscape in association with shrubs, over and upon which it might ramble. Its roots almost as freely as a Willow.—A. H.

FRUIT GARDEN.

W. COLEMAN.

PEACHES: WHAT VARIETIES MUST WE PLANT?

THE planting season is at hand, and not a few will be consulting their notes and lists before they select or send in their orders. Peaches, like all other fruits, vary upon different soils and in widely divided districts. New sorts, as a rule, come slowly to the front, and not a few of the old standard varieties are neglected altogether. On reference to replies sent in by eight correspondents (p. 254), I find twenty-seven varieties enumerated as being suitable for culture upon open walls, and much regret that a greater number of growers have not responded to the important queries sent out by the editor of *THE GARDEN*. A business of this kind, like an Apple or a vegetable conference, may not be so tempting as competition, but it is the only method by which fat lists can be reduced, the best sorts can be brought to the front, and the novice, to whom a Peach is a Peach, may select a few varieties worth growing. The study of Peaches, including Nectarines, of course, is the work of a lifetime, and considering that they must have special treatment upon good walls or under glass, a tithe only of the gardeners in this country can make themselves acquainted with one quarter of the varieties enumerated in catalogues. Another disadvantage is this: the leaves and the fruit of the majority of the varieties are so much alike, that a man must be extremely well up before he can single out a dozen sorts after he has gathered them from his own walls. In my exhibiting days I once had an annoying experience over four distinct varieties with which I was disqualified, one of the judges, an accredited expert, declaring that a dish from a glandless tree and another from a tree with round glands were identical. Mistakes of this kind should not occur in this great Peach-growing country, neither need they if private growers would go into the matter, making notes, first, of the flowers, large or small; second, of the leaves, whether glandless, round, or kidney-shaped; and last of all, the fruit, especially the date of ripening in the autumn. By this means alone all synonyms might be reduced to something like order, whilst flavour, the true test of merit, would enable them to supply all their wants, early, midseason, and late, by the selection of a dozen varieties. A

good work has been commenced in Apples, Pears, and quite recently in vegetables, and some day perhaps the Royal Horticultural Society will be able to follow up its legitimate work by inaugurating a conference upon Peaches. The day may be far distant, but that depends upon gardeners themselves, who may if they will obtain a guinea's worth of most useful literature for a half guinea subscription, or really anxious to see that large Vine house at Chiswick filled with luscious Peaches, they may make it a guinea and induce their employers to subscribe four guineas to an institution which all horticulturists should support. But I digress. I started with the intention of analysing the lists sent in and giving the names of a few which I consider worth growing. Leaving out the varieties only once mentioned, I find the good Royal George in favour with seven out of the eight, the old Noblesse with six, Bellegarde and Grosse Mignonne with five, Barrington with four, Alexander, Dymond, Hale's Early, Violette Hâtive, and the Nectarine Peach with three, A Bec, Early Louise, and Dr. Hogg receiving two votes each. It is gratifying to find the old standard sorts heading this small list, but with the exception of Barrington and the Nectarine Peach, all of them are early or midseason, whilst that grand Peach Walburton Late Admirable is only named once, and Prince of Wales—not the Princess—is left out altogether. Now the Prince of Wales I may safely assert is one of the hardiest, the most prolific, and the best flavoured late Peach in cultivation, and those who have not tried it should do so without delay. Raymackers, in the way of Walburton, is equally good, and those who do not object to a light-marbled Peach should certainly add it to their collection. Gladstone, a fine, rather flat, highly coloured late Peach, not much unlike Bellegarde, is promising, and will become a favourite with growers of choice late Peaches.

Running through one of the best catalogues lying before me, I will select the names of a few which I consider the best for early, midseason and late use. They are not given in their order of ripening, as I am taking them alphabetically, leaving those whom they may concern or interest to select according to their requirements :—

A Bec	Large Early Mignonne
Alexandra Noblesse	Malta
Alexander	Old Noblesse
Barrington	Prince of Wales
Belle de Doue	Raymackers
Bellegarde	Royal George
Crimson Galande	Sea Eagle
Doctor Hogg	Stirling Castle
Dymond	Nectarine Peach
Early Grosse Mignonne	Violette Hâtive
Grosse Mignonne	Walburton Late Admirable
Gladstone	
Hale's Early	

Having gone so far, much farther than I had intended, I must complete my list by giving the names of a few of the best Nectarines :—

Advance	Murrey
Byron	Oldenburg
Darwin	Pine-apple
Old Elrue	Pitmaston Orange
Hardwicke Seedling	Rivers' Early Orange
Humboldt	Stanwick Elrue
Lord Napier	Violette Hâtive

Victoria is a fine handsome Nectarine of exquisite flavour, but it requires an extra good situation to ripen it properly.

Use of large vinery.—It would have been easier to give "J. W. W." (GARDEN, September 28, p. 305) the information he desires had he stated the particular period at which the Grapes ripen. If late kinds are grown that are kept through a part of the winter, I should advise "J. W. W." to give

up all thoughts of growing anything else in the house. It is so very difficult, one might say impossible, to keep Grapes in good condition with plants that require watering during the damp winter months, that, so far as I am aware, no London market gardener grows plants in late vineries. The rule is that if two things are grown in the same house, one must suffer more or less if the requirements of the other are accurately hit off, and the attempt to do both well generally ends in such a falling off in quality, that market growers rarely attempt that which of necessity so frequently has to be done in private establishments. The golden rule with them is that whatever flower or fruit is taken in hand should be brought to a high point of perfection to be profitable, and this is only to be accomplished by giving up the house entirely to it. In the case of vineries that are started at the beginning of the winter it is more practicable to grow something under the Vines, and I know of nothing that would be likely to pay better than Arum Lilies. They are frequently grown both under Vines and Roses, and they do very well, not needing so much light as the generality of flowering plants. Moreover, they make considerable progress before the foliage of the Vines gets thick. To get good results from these the plants should be well grown during the summer, as the stronger they are the better will they respond to the warmth. Put out single crowns in June in rich ground, lift and pot them the last week in August, and they will come into bloom at a time when they are valuable. Maiden-hair Fern might also be grown, the fronds being always in demand in the London markets. I would also give Lily of the Valley a trial. The temperature required by the Vines in early spring would do very well for the Lily.—J. C. B.

ROOT-PRUNING FRUIT TREES.

THIS operation, more or less needed in most seasons, is well-nigh indispensable this, if the fruit failure of this season is to be converted into a bountiful fruit harvest in 1890, and for this reason growth has had its way throughout the year, since the grubs left off devouring it last May and June. The trees, rid of the pests of maggots and unweighed by any crops, have grown with abnormal vigour throughout the season, and many Apple trees in the last days of September are still in full growth with leaves as green as Leeks. The sooner this growth can be checked, the better for our prospects of full fruit baskets next year. There is no better method of attaining this than root-pruning.

Withhold the water from the roots, some may say. This, however, on a large scale is impracticable, and even on smaller areas it is less efficient in checking or maturing growth and buds than many might suppose. I have tried the dry method for hastening maturity in Vines, Peaches, and Pears with dubious and rather unsatisfactory results. It is possible, by the use of corrugated iron, tarpauling, laying the borders at a sharp pitch, and surfacing these with waterproof coverlets, to shoot most of the rain water off the roots from any given date, but it often seems that the more effectually surface water is shot off the roots, the more copiously does capillary attraction draw up subterranean supplies, as, on the whole, the air water does less harm, being of a more genial character than the earth supply.

Perhaps the only, assuredly the simplest and best, mode of cutting off the supplies of food and moisture from fruit trees already gorged with an excess of both is to root-prune, for it must be obvious to the merest tyro that the amount of fluid or rudimentary food raised must be in the ratio of the number and size of the roots raising it. Reduce the number, cut off most or all of the largest and strongest, and the fluid or food must be proportionately reduced. Hence the soundness of the theory and the efficiency of the practice of root-pruning.

This, however, may not be so very obvious to the uninitiated. It may therefore be well to add that at this season of the year two natural causes work powerfully against the hastening and heightening

of the maturity of fruit buds and wood. These are, declining sunshine and want of heat. Were the sun's heat increasing instead of waning daily, it would speedily dispose of all our excess or glut of sap, and plump fruit and wood buds and nut-brown ripe wood would result. But as the opposite is the fact, we must reduce our supplies of sap until they match the enfeebled powers of the daily declining light and heat of the sun, for it is the sun alone that converts the fluids and foods of our fruit trees into fruit buds now and luscious fruits by-and-by. But the transforming powers of light and heat at this season of the year are apt to be swamped and overpowered by a flood of sap in fruit trees. Cut off the springs that swell this flood to dimensions dangerous to, or incompatible with, fertility, and even October sunshine may suffice to heighten and hasten the maturity of wood and buds when the supplies are cut down to match through root-pruning. All this also explains and vindicates the wisdom of root-pruners in going at once for the larger roots. These are the main sources of supply. Sever a few of them, and we get rid of excess, and the same force tells on the instant on the remainder. Nor is this all. In most fruit trees there is sap and sap, sterile and fertile sap. It may be impossible to detect the difference by the most subtle analysis, but this may be found out through the size of the roots. The larger the roots the more gross and sterile the food they carry or prepare for us; the smaller, the more fertile; hence the common saying and experience of fruit growers that forked roots favour sterility, fibrous ones fertility. Therefore, by cutting or pruning off the larger roots we not only reduce the volume of fluid or food, but improve the quality of those left and powerfully incline them towards fruit-bearing. Neither is there any danger to the health or life of the trees in pruning off the larger roots at this season of the year. Root-healing and modification are now in their most active state. Hardly is a root severed before it begins to heal and to grow afresh in new forms. The chief characteristics of these roots are that they are smaller and more numerous than the old ones, and experience proves that the smaller and more fibrous the roots the greater and more constant the fertility. Annual crops tend to perpetuate these fertile forms of root growth, but the failure of one or more crops in succession causes the trees to break away from their fruitful ways, and hence the special need of root-pruning now, and also for pruning to a greater extent than might prove either wise or prudent in ordinary fruit seasons. For it cannot be too often repeated that fertility tends to repeat itself, and so long as it does this the wise cultivator will be content to leave well alone, lest root-pruning added to the strain of fruit-bearing should enfeeble the health or shorten the life of his trees, or lessen the quantity or lower the quality of his produce.

D. T. F.

Outdoor Peaches.—I recently noted with much pleasure a well-covered wall of Peaches and Nectarines at Castle Hill, Englefield Green, the trees all full of health and vigour, but by no means coarsely so. I do not care to see very long coarse growths on wall trees, as these seem rather to indicate too liberal a supply of manure at the roots rather than healthy functions. The Castle Hill trees rather err, if at all, on the side of being stout wooded without being too robust. The soil is of a light sandy texture with a deep gravel base, the aspect about due south, and if exposed to south-westerly winds yet very warm. The wall is some 80 feet long and full of tree growth from end to end. The sorts are various, including Grosse Mignonne, Princess of Wales, Royal George, Walburton Admirable, and other standard sorts. Amongst the Nectarines was one fruiting very late, Victoria, but the fruits do not come to perfection in the open. On an easterly wall Apricots thrive well; indeed, almost too luxuriantly. This is a misfortune, for excessively coarse sappy growth has often proved to be the ruin of many Apricot trees. Why it should be so where Peach trees make only solid, moderate growth it is difficult to say, but the sandy soil may not favour

Apricots, which seem, as a rule, to prefer for the production of healthy enduring trees rather stiffer soil. It is satisfactory, all the same, to find that there is here, on the whole, so good an example of what Peach trees will do on open walls under proper methods of culture. Every such example shows that the ability of gardeners to grow stone fruits on walls is not yet played out. Possibly we had a few years since a series of unfavourable seasons which promoted failures, or it may be that the cheapness of glass houses has led to the growth of Peaches under glass so largely that outdoor culture became somewhat neglected. In any case it is evident that we can still grow good Peaches out of doors.—A. D.

WORK IN FRUIT HOUSES.

VINERIES.

THE pruning and cleansing of Vines and vineries will now be continuous until all, with the exception of the latest houses, are ready for starting in their respective order for the next year's crops. A good start with houses and Vines free from insects being half the battle, this sanitary work cannot be too carefully performed. Many people pin their faith upon strong insecticides and extraordinary mixtures, which often injure the Vines and then do not obliterate the enemy, especially the red spider and mealy bug, the very worst pests known to British Grape growers. The coatings of clay and lime in not a few instances simply encase the enemy at a time when shelter and protection from sudden changes just suit its torpid condition, and although the masses may be destroyed, the residue come out fresh and healthy to form new colonies in the spring. Preposterous paints of the old-fashioned type are preservative and in many instances superfluous, especially where soap and water or that yet unbeaten Gishurst compound are not thoroughly and properly used. Let scrubbing and repeated washing of the Vines then be most carefully performed, stop all cracks and holes in old spurs with pure Gishurst, and if anything stronger is used, add methylated spirits or a taste of gas tar. The cleansing of the Vines themselves, however, is not the most difficult part of the business, as bug gets into the roof, the trellis, the walls, and the loose parts of the border, whence dislodgment is extremely difficult; so difficult, indeed, that when the roof has been stopped and painted, the walls pointed and limewashed, the borders scraped, swept, and top-dressed, the work of extermination has only passed through the preliminary phase. The stronghold, nevertheless, has been so greatly weakened, that armed with methylated spirits and a small camel's-hair brush, daily attention from the time the Vines break will crown the persevering attendant's labour with success. When the Vines and houses have been cleansed, insect-infested plants should not be introduced, especially if there is a suspicion of bug or thrips; better throw them away, or place them in hospital until they can be properly cleaned.

Succession houses containing the remains of crops of fruit, perhaps only a few bunches, should now be cleared, first to economise fuel; second, to give the Vines a thorough rest before they are pruned. All thin-skinned Grapes will now keep quite as well, and possibly better in the Grape room as upon the Vines. If the latter have not shed all their leaves, the wood carrying the bunches should be stripped before it is cut from the Vines. The Grape room, as a matter of course, will now be in perfect order and ready for their reception; if not, it should be limewashed and made as sweet as a dwelling-room without delay.

Muscats now quite ripe and well coloured must not be overdone with fire-heat, neither must they be allowed to suffer from damp, to which they are so liable during the fall of the leaf. If the latter are picked up every day and the borders are completely covered with a good layer of dry Fern, dust as well as damp will be kept down, when the most gentle warmth in the pipes accompanied by a moderate circulation of air on fine days will keep them fresh and plump. A temperature ranging from 50° at night to temperate by day should be high enough,

but much depends upon the nature of the structure and the surroundings, a low damp situation on heavy soils being so detrimental to the admission of fresh dry air. Of two evils, it is better for the Grapes to shrivel than to rot, but by careful attention to the preceding details and keeping the ground ventilators quite close during the prevalence of wet or foggy weather, there should be no great difficulty in steering a middle course.

The late house.—If Lady Downe's and other thick-skinned Grapes are not well finished, the pipes must be kept sufficiently warm to justify a steady circulation of fresh air, care being taken that sudden depressions do not produce a chill. Another aid will be found in giving the surface roots a moderate watering with weak diluted liquid or soot water at a temperature of 80°. A fine bright morning with warmth in the pipes and a circulation of air through the house should be chosen, and as this will be the last, some very dry mulching may be placed over the roots at once. Houses, on the other hand, in which the Vines were started early and the Grapes are now perfect, like the Muscat house, must be kept dry and temperate, an excess of fire-heat being liable to take out the colour. If late laterals are persistent, every particle may now be pinched or cut out, as this languid growth keeps the roots in action and retards the ripening of the premier leaves. The latter, as a matter of course, must be collected as they fall, otherwise they will create damp; sweeping to raise dust and washing the floors must be discontinued.

Strawberries in pots.—Where very early Strawberries are wanted growers who know the value of time will now be picking out plants most likely to answer their purpose. Plants with hard, red, single crowns, which have filled 5-inch pots with roots are most likely to respond to gentle excitement, but unless a few scratch dishes are absolutely necessary, the start should be delayed until they have had a short season of rest. The weather at the present time is mild and fine, and the late plants are still making leaves, a condition which necessitates keeping the earliest batch as quiet as possible and fully exposed in a very open part of the garden. Here if well plunged they will not take excessive supplies of water, but anything approaching drought being fatal to success they must never feel the want of it. A light airy shelf close to the glass in an early vinery or Peach house is perhaps the best place for a start, especially as it is too early to think of starting the Strawberry house proper, but before the plants are housed the pots should be washed and the apertures examined to see that they are pervious to the passage of water. Spider and mildew having been prevalent, each plant and pot should be completely immersed in sulphur water or a weak solution of sulphide of potassium, one quarter to half an ounce to a gallon of water. This mixture is quite harmless to vegetable life, the tenderest leaves or roots passing through it uninjured, but it is fatal to fungoid spores and insects, and makes short work of worms so frequently met with in the soil. The general stock of plants should be moved occasionally to prevent the roots from leaving the pots, and more room at the same time may be given to let in warmth and fresh air. Nothing will be gained by feeding after this date, but the ripening of the roots may be facilitated by the removal of weeds, by disbudding, and keeping the surface of the balls loose and free from conifers. Plants put out in August for giving the next batch of forcing runners should be treated quite as carefully as their fellows now in pots. They need not be disbudded, but runners and weeds should be removed as they appear, the plants well firmed with the foot, and at any convenient time liberally mulched.

Strawberries at Christmas.—A very intelligent fruit grower with whom I am acquainted is most successful in getting first quality fruit in by Christmas and keeping up the supply until the crop from the early plants, of which I have been treating, is nearly ripe. The turning out of forced plants for an October crop is frequently practised, but in his management they are cleansed by dip-

ping, turned out of the pots, reduced and repotted at once. They are well fed and grown on in the ordinary way throughout the summer, and when they commence flowering they are removed to cold frames, thence to pits in which they can have warmth and light, in fact ordinary forcing treatment until the fruit is ripe. Vicomtesse Héricart de Thury is his favourite variety; but Noble, although second-rate in quality, being earlier, may, in due course, come to the front, that is, for a very late dish, for, like Donald Beaton's new Potatoes placed before his employer on Christmas Day, they must be pronounced late. Seeing how uncertain and expensive is the meagre crop from early forced plants, a system of changing the growing and resting seasons, as sometimes happens when early forced Vines break in September, is worthy of the fullest test. The plants cost nothing, as they can be manufactured at home, and one thing is quite certain: the very early sorts, even in open quarters, have a great predilection for autumn-flowering, as may be witnessed in any good Strawberry garden at the present time. The fine, dry autumn no doubt has developed this tendency in plants which have never been cramped in pots. Those which have been partially changed by last year's forcing and a whole summer in pots, under the simplest management must and will flower profusely in the autumn.

WORK AMONGST HARDY FRUITS.

WALL TREES, including Plums, Cherries, and Pears, may still be root-lifted and renovated by an additional supply of drainage and fresh soil of a calcareous nature. Anything that is fresh and not too rich will benefit the trees, especially those which have been neglected for a number of years. Peaches and Apricots are now so thoroughly to the front, that it is hardly necessary to throw out a reminder; but Cherries and Plums, and in some places the choicest Pears, do not receive this important attention, and yet I believe, in fact I know, many a barren tree by this simple process may be made fruitful. When old and long neglected trees are taken in hand the work should always be performed piecemeal, that is to say, one half the roots should be raised this year, the remainder in the autumn following, or in very bad cases the work may extend over three seasons. The idea that root-lifting entails an enormous outlay in labour and fresh compost is erroneous, as it is astonishing what a number of trees may be got over in a few fine days where half a dozen men are active and willing. Some fresh compost of course is needed, but where trees have been fairly well planted, all the best of the old may be used over again, especially after the drainage is increased and some porous material has been added to it. Good loam is the thing, but lacking this, at least in quantity, an excellent renovator may be formed by collecting throughout the year all the road scrapings and parings, old lime rubble and plaster, broken brick, and charred refuse of the garden and mixing them well together. A large heap of this kind is not made in a day or a week just when it is wanted, but by looking ahead and securing a little here and a little there, the locality must indeed be barren if a good reserve is not in safe quarters at the end of a twelvemonth. If very hungry, a little rotten manure may be turned in with the medley, also old night soil and all superfluous liquid from the manure tanks, but these stimulants are not absolutely necessary where fair loam forms the staple. When operating upon the trees all strong roots should be raised to a horizontal position near the surface or severed, to cut off their connection with a bad subsoil. The bottom should then be made good and well rammed if not cemented preparatory to the restoration of the drainage. The root bed, not necessarily the best of the compost, if dry should be very firmly rammed to check a downward tendency on the part of the young roots, also to secure uniform moisture by the slow, but sure passage of water. Upon this bed all the carefully trimmed roots of course must be laid, and an upward growth being desirable the remainder of the trench may be filled in with the best of the compost.

BUSH FRUITS.—The planting of Raspberries, Currants, and Gooseberries may still be followed up provided the ground is dry enough to work without becoming pasty. The Raspberry likes a deep, rich, moist soil, through which water passes freely and does not become stagnant. In warm dry gardens the stools may be planted on the level, the most suitable position being a flat border best calculated to hold moisture in dry seasons. Here they should be well mulched and receive plenty of water when swelling their fruit and throwing up young canes, otherwise the first will be small and dry, the canes weak and puny. On heavy soils where the canes grow very strong and do not always ripen properly, this delicious fruit well repays special preparation. The ground, in the first instance, should be thoroughly drained and trenched deeply, plenty of burnt earth and garden refuse, leaf mould, road scrapings and the like being worked into it to ameliorate the texture. Then instead of planting upon the block system, the ground should be thrown up into ridges running from north to south and not less than 6 feet apart if more than one row is contemplated. Long single rows, however, are best, as each side receives an equal share of sun and light, and the canes get thoroughly ripened. Upon the worst of all soils, a cold stiff clay, the growth of excellent crops of fruit is possible and may be accomplished in the following manner. Having set out the ground as for a Scotch Celery bed, say 3 feet in width and running from north to south, throw out a trench two good spits in depth, lay the top spit on one side and remove the other. Put in 6 inches of rubble for drainage and make the trench the receptacle for refuse from the potting bench—the frame ground and other matter which usually goes to the rubbish heap—return the top soil, fork in light manure, sand, burnt earth, or dry road scrapings, and leave the ridge to settle. Early in the autumn plant the canes singly 1 foot apart and 1 foot or 18 inches above the ordinary ground level.

CURRANTS AND GOOSEBERRIES.—In gardens subject to caterpillars, now is the time to make a raid upon the larvae. If leafless, the bushes, in the first instance, may be pruned and well syringed with soapsuds. All old mulching and loose soil beneath the branches must then be removed, the latter to the depth of 2 inches or 3 inches, especially about the stems, where the larvae are likely to be most plentiful. Dress heavily the bushes and the whole of the ground with quicklime, replace the old soil with fresh compost, making it very firm, and mulch with short stable manure. Repeat the syringing occasionally through the winter, and, if plentiful, give the roots a good soaking with the soapsuds. Watch the trees in the spring, and dredge with lime if necessary.

PROPAGATION.—Plants raised from cuttings of Currants and Gooseberries put in now are infinitely superior to others struck in the spring. The reason is not far to seek: the sap at the present time is going down, and the ground being warm, the callus is at once formed; whereas, even as early as March the sap is rising, many of the cuttings rot, and those which grow are more or less weakened—first, by bleeding, and second, by an enforced growth before the callus is formed. Years ago gardeners deferred the pruning of their bushes until the bullfinches had done with them, and then picked up a few of the most promising pieces of wood for cuttings; but now, anxious to make the fruit garden trim and neat, the go-a-head man prunes in the autumn, nets his bushes, and treats his cuttings as the Rose grower treats his Rose cuttings. Stout, well-ripened pieces, a foot in length, taken off with a heel, disbudded two-thirds of their lower length, and firmly inserted in light rich soil, will be well callused by March. Ninety per cent. will grow, and the young plants, having roots to support them, will be fit for transplanting the following autumn.

W. C.

Peach Sea Eagle.—This I see is noted as being the latest Peach on the open walls at Gunnersbury House, and it is a very good kind, but I like the old Late Admirable quite as well, or better, as it is even later than Sea Eagle in ripening,

and bears finer and more highly coloured fruit. Here we have had some Late Admirable very large and have only (Oct. 8) just finished gathering, and the fruit has been of good flavour. To come in just before the old kind, there is no Peach, in my opinion, equal to the Walburton Admirable, which closely resembles the Noblesse, the best of all Peaches. To have this variety, the Walburton, or indeed any of the late sorts good, they must be planted on a south or south-east wall, so as to get as much sun as possible, and if under a glass coping, so much the better for the perfect ripening of the fruit and the keeping it safe from wet weather.—S. D.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

—I must premise that the circumstances of soil and climate at Belvoir are not very favourable to Peach culture, the natural soil being clay, while extensive woods in the neighbourhood induce an amount of atmospheric humidity not congenial to the habits of the Peach. The best early Peach grown on a south wall is Hale's Early; it ripens in August, and is excellent in quality. The later sorts under similar circumstances are Galande, Sulmstead, Bellegarde, Grosse Mignonne, and Noblesse, all developing good quality in fair seasons. In the case of trees grown out of doors, deficiency of ripening heat and the occurrence of heavy rain just preceding the period of maturity in the fruit are causes that induce deterioration of flavour, and in the case of those grown under glass, injudicious watering would have the same effect. As far as my experience goes, the Plum is the best stock for Peaches in this part of England. I have tried Peaches on their own roots and on Almond stocks; both failed in the cold and wet seasons to which we are subject. Royal George Peach exhibits so great a disposition to suffer from mildew, that I am disposed to think that the Plum stock is unsuited to this otherwise excellent Peach. For the last eight or ten years outdoor culture has been successful. I attribute a good deal of this to the preparation of the borders, and to the free use of granite chips and dust.—WM. INGRAM, *Belvoir*.

—I believe for flavour there are few to surpass the good old Royal George. Hale's Early also with me is a good flavoured second early, closely following Alexander, which is, I think, the best early Peach, good alike in flavour and appearance. It is, however, a very vigorous grower, and here there is some difficulty in keeping it in a fruitful state. I believe that overcropping and red spider are the main causes of inferior flavour in Peaches. I have frequently noticed, when a tree has been overcropped or infested with spider, that the greater part of the fruit falls prematurely. They may pass off fairly well with the public, but are certainly not fit for a gentleman's table, as there is very little but skin and stone. Depend upon it, there is nothing got by overcropping. Outdoor culture in this district is very rarely attempted. I do not say that a crop may not occasionally be had, but considering that, first of all, there must be a good wall with a south aspect, and that a good house can be erected for so little money, comparatively speaking, "the game is scarcely worth the candle." Even an unheated house is a very great boon in

this northern county, where we get so little summer. However, there is at least one garden near us where fair crops are obtained almost annually, but the surroundings are highly favourable.—W. JENKINS, *Aldin Grange, Durham*.

—Of Peaches grown inside, the best for flavour are Royal George, Early Grosse Mignonne, and Noblesse. Bellegarde is also a fine coloured Peach of good flavour. Princess of Wales is a fine, large, good-looking Peach, but deficient in flavour. Early Louise and Early Beatrice are also grown, but are of poor flavour. Peaches will not grow without protection in this district; the foliage blisters so badly in spring that the trees soon die out and none are grown.—A. CHALMERS, *Terregles, Dumfries*.

—Noblesse, Royal George, and Violette Hâtive are the best flavoured Peaches that I know, but are not quite so large as some of the newer kinds. Peaches sent to market are generally gathered before they are ripe, as they travel better, but not being finished they cannot have the flavour of fruit gathered fresh from the tree—that is the cause to which I would ascribe want of flavour. I cannot give a decided opinion of the stock best suited for Peaches, but the general fault is that the stock does not grow with the same vigour as the tree. Outdoor culture of the Peach in this district is not a success.—THOMAS BLAIR, *Shrubland Park, Suffolk*.

—With regard to Peaches, I find the best for flavour are the following, and these in the order in which they are named: Noblesse, Violette Hâtive, Royal George, Bellegarde, Walburton Admirable, Barrington. The one great fault with Royal George is its liability to mildew, and trees of it seldom escape. So far as my experience goes, those mentioned above are superior to any of the newer kinds, but one or two of these are valuable for their early ripening, and the most precocious in this respect is Alexander, which is a very good Peach. In anything like fair seasons Peaches do well on open walls in East Anglia, but they require close attention to keep them free from aphid and to secure firm wood. This can only be done by timely thinning of the young shoots, and dusting with tobacco powder till the garden engine can be brought into play.—J. SHEPPARD, *Woolverstone Park, Ipswich*.

—The best Peaches for flavour, to my thinking, are Royal George, Noblesse, Bellegarde, Grosse Mignonne, Walburton Admirable, and Stirling Castle. Of new kinds, Alexander, Waterloo, Hale's Early, and Early Silver are good. The flavour of these is good, and being very early they are invaluable. Most varieties do best on the Mussel stock, though some sorts will not grow upon it. The attempt to grow varieties on stocks which do not suit them will cause disease, &c. The cause of the inferior flavour so often found in market Peaches, to my mind, is because they are gathered a long time before they become ripe. In this district Peach growing outdoors is becoming a failure.—A. ROCHE, *Cossey Park, Norwich*.

—I find the best Peaches for flavour to be Royal George and Hale's Early, with a good word for Noblesse for size and quality. I would attribute the cause of inferior flavour in market Peaches to gathering the fruit before it is thoroughly matured. The difficulty to contend with would be the sending to market when in a thoroughly mature state. If some of your numerous correspondents would give their experience of what they have proved to be the most successful form of packing, it would prove of inestimable value to many of your readers.—D. RHIND, *Moy Hall, Inverness-shire*.

—The best Peaches for flavour are Noblesse, Grosse Mignonne, Royal George, Bellegarde, Violette Hâtive. Few match, none exceed the old varieties. Early Grosse Mignonne, Alexandra Noblesse, Rivers' Early York, and Princess of Wales are among the best early varieties. Early picking before ripe to bear the journey better and keeping too long on show before sale impair the flavour. The Brompton stock seems better than the Peach or Almond, and is, in fact, generally used. Plum and Damson stocks are mostly credited with canker;

but the stocks used for Peaches are but little known or understood unless by the large growers of trees for sale. Outdoor cultivation is still general and fairly successful in East Anglia.—D. T. FISH, *Bury St. Edmunds*.

—Peaches do not succeed well despite every attention in protecting the trees. The varieties which do best here are Hale's Early and Dymond, which colour and swell to a good size. I consider the Plum stock to be the best for indoor and out. If our houses were adapted for them I should give the preference to standards, as the trees seem to make kinder growth and last longer. Why so many flavourless Peaches are to be found in the markets is no doubt due to overcropping, in many cases, to get quantity, as prices often are very low.—C. FLACK, *Cholmondeley Castle Gardens, Malpas*.

—With regard to Peaches in point of flavour I consider the following to be a good selection of the best: Hale's Early, Grosse Mignonne, Stirling Castle, Noblesse, Royal George, Bellegarde, Barrington, Late Admirable, Walburton Admirable. Speaking of the inferior flavour so often found in market Peaches, I consider it is to be attributed to the careless manner in which they are cultivated, especially on the approach of the ripening period. Secondly, the indiscriminate way in which they are gathered and packed and sent to market, together with the unsuitability of the material used in packing. Thirdly, the varieties cultivated not being always the best in point of flavour. Peaches in this district outside are a precarious crop, therefore not much cultivated, although there is an exception in a good old-fashioned garden adjoining here where good crops of Peaches are usually obtained. This place is well sheltered from all quarters and the wall is flued. Notably last year the trees on this wall carried a fine crop of fruit, though not very large. With regard to the merits of new varieties and various stocks I am not sufficiently acquainted to express an opinion.—J. J. CRAVEN, *Allerton Priory, Woolton, Liverpool*.

—My answer to your invitation for notes on the following points in Peach culture is as follows: Royal George, Noblesse, Grosse Mignonne best for flavour. I have had very little experience with the newer kinds of Peaches. Sea Eagle is a showy Peach, good bearer, and of a hardy constitution; a very good out-of-door Peach for late use; flavour not so fine as that of the above named. I believe that the want of flavour in market Peaches is caused by overcropping and gathering before the fruit is quite ripe. Plum stocks, especially for out-of-door culture, are the best. Canker in Peach trees proceeds from various causes. As in Apricots, the cause may be found to be the outcome of injudicious restriction of top-growth, and not giving at the same time due attention to the roots, which should be kept near to the surface, especially where a bad subsoil exists. The Peach stock, when planted on cold, wet soils, is conducive to canker and general bad health. Out-of-door Peaches are cultivated in most of the principal gardens in this district, and in most cases planted against south walls. Where the soil is naturally dry and warm, as in the gardens here, Peach trees succeed fairly well. At the same time, so much is dependent upon the seasons for the proper maturation of the wood, &c., and they being so variable, a crop of Peaches out of doors cannot be calculated upon with any degree of certainty. A good out-of-door Peach season is one that is fine and warm itself, it having been preceded by one of the same character.—JAS. GRAHAM, *Coldstream*.

—I have found none superior to Noblesse, Bellegarde, and Royal George. Of new kinds I have tasted none of more than second-rate quality, and inferior in every sense except size to the three named above. The causes of inferior flavour often found in market Peaches are overcropping, rank liquid manure and too copious supplies of it, especially towards the ripening period. But there are other causes not uncommon in private gardens, viz., supplies of water which do not reach the bottom roots, causing mildew, red spider, and unhealthy

foliage generally. I never have found the stock affect the health of the tree when the roots were properly treated. All have been alike. I have only seen disease and canker where the roots have found their way into sour, sodden soil, badly drained, or inert material, and canker is worst when growth is severely cut to keep the tree to a certain size while the roots are left in a gross condition. Outdoor culture generally is not successful in this district, but in some favoured positions where shelter, good loam and natural drainage exist, Peaches do fairly well. Extension training is most conducive to health on open walls.—M. TEMPLE, *Carron House, Stirlingshire*.

—Outdoor Peaches do not succeed well on the chalk hills of the Yorkshire wolds, being subject to canker and injury in spring from cold east winds and sea fogs. The kinds I grow are Hale's Early, Barrington, Grosse Mignonne, Noblesse, and Violette Hâtive. I prefer the Mussel Plum as the best stock for most kinds in this district. In the Peach houses for forcing I find Grosse Mignonne, Noblesse, Royal George, and Violette Hâtive can be depended upon as good croppers and fine flavoured varieties.—R. C. KINGSTON, *Brantingham Thorpe, Brough, East Yorkshire*.

—For flavour, Barrington, Royal George, and Exquisite are the best. Causes of inferior flavour may generally be attributed to the absence of sunshine and heat, and these grown for market only are too often heavily cropped, and thus produce fruit of inferior quality from lack of strength to properly mature it. Probably other causes may be found in the frequently seen system of growing too much wood and the exclusion of air and light. The land and climate are more responsible for the development of canker than any species of stocks. Outdoor culture in this district is not worth the risk.—T. LAMBERT, *Burton Constable, East Yorks*.

—The best Peaches for flavour are Noblesse and Royal George. Hale's Early is really the finest early, with good flavour. Bad flavour in market Peaches is to a great extent caused by their being pulled before they are perfectly ripe. My experience is that the last day or two on the tree, and also lying for a day on a shelf in a warm vinery, tend greatly to improve the quality. Outdoor culture of the Peach is very uncertain in this cold northern climate, although in some seasons fairly good fruit are obtained, principally from that most reliable of all Peaches, Royal George. Some of the newer varieties I am now trying, but cannot yet speak of them.—JAMES F. SMITH, *Cullen House, Cullen, N.B.*

—In reply to your queries about Peaches, the old varieties, Noblesse for example, are still unsurpassed for flavour. At their best, none of the newer kinds excel it, although many of them are of excellent flavour and produce much finer crops. Too early gathering before the Peach reaches maturity, a necessity with market growers, is the cause of much of the want of high flavour in market Peaches. Heavy cropping has also a share in the deficiency of flavour. Peaches to attain their finest flavour in this country must be thoroughly matured on the tree. The Mussel Plum stock suits our soil best. Disease does not trouble us, apart from the effects of bad seasons and severe winters, and the stock mentioned is the most effective against cold and wet. Outdoor culture is moderately successful in the most favourable situations, otherwise it is seldom successful, and never profitable from a market grower's point of view, and should never be attempted.—M. DUNN, *Dalkeith*.

—The best flavoured Peaches are Violette Hâtive, Royal George, Stirling Castle, Dr. Hogg, the last a very vigorous and free bearer. I have not tried any of the new varieties. All the Peach trees here are budded or grafted on the Plum. There are four trees upwards of sixty years of age, three of them in a house still healthy and bearing good crops; one of these has the usual swelling at the junction of scion and stock a foot in diameter, whilst the stock is only 5 inches in diameter. Some trees are be-

coming weaker annually, and will have to be thrown out. This is the fault of the stock, as some specimens of the same variety of Peach are healthy. Peaches are successful outside in this and other gardens in this locality. Early and midseason varieties are best. Prince of Wales and Sea Eagle fruit freely and are in great demand for the kitchen. Lord Palmerston and other strong-growing late varieties are useless outside.—GEORGE HARRIS, *Alnwick Castle Gardens*.

STOVE AND GREENHOUSE.

THE CAPE HONEYSUCKLE.

(TECOMA CAPENSIS.)

WHEN treated as an ordinary greenhouse climber, viz., planted in a border and shaded more or less during the summer, this *Tecoma* rarely flowers, though in all probability the plant will grow away freely enough. It certainly does not seem a likely subject to flower freely as a pot plant in the shape of little bushes, yet it can be done, and they are very attractive at this season. Messrs. Low and Co. have grown the plant in this way for some years, and they treat it somewhat after the manner of a *Bouvardia*, that is to say, the cuttings are struck early in the spring and the plants grown on during the summer, giving them towards the latter part a thorough ripening by exposure to air and sunshine. They do not require a large amount of root space, otherwise the plants will grow away freely without flowering. This *Tecoma* is pretty generally known, but its flowers are by no means so familiar; yet as a climber it will bloom freely if attention is paid to the thorough ripening of the wood. The flowers, which are borne in clusters on the points of the shoots, are in colour and shape a good deal like those of *Eschynanthus grandiflorus*. Cuttings of this *Tecoma* strike readily during the spring, and the plants will thrive in any good potting compost. Another most beautiful species of *Tecoma* is *T. jasminoides*, yet it is also shy flowering, no doubt owing to the fact that the wood needs to be thoroughly ripened in order to ensure a display of bloom. I once saw a specimen which through neglect flowered most profusely. The plant in question was trained up a pillar supporting the roof of a greenhouse, and allowed to extend some distance along the roof. Owing to changes the lights were taken off the house during the summer months, and beyond an occasional watering the plant received no attention whatever. In the autumn the lights were replaced, and soon after the plant flowered most profusely. The flowers of this are white, with a reddish throat, and in shape much like those of a *Gloxinia*. The very dark green pinnate foliage is most ornamental, while the plant will under greenhouse treatment grow away freely. This last remark will also apply to *T. stans*, which is commonly cultivated throughout the Tropics, but very seldom met with here. The Australian *T. australis* requires a temperature above that of an ordinary greenhouse, or it will not often flower. In this species the flowers are white, tinged more or less with rose and purple. It is a very old plant in gardens, but is not generally cultivated. A hardy species of *Tecoma* is the Trumpet Flower (*T. radicans*), which in August and September is one of the showiest climbers we have in our gardens, as it flowers during these two months. It is a free-growing subject, and on a rough wall will attach itself thereto by means of roots pushed out of the stems after the manner of Ivy. On a sunny wall it will usually flower freely, but more particularly if the summer is hot and dry, as the wood then gets thoroughly ripened. The funnel-shaped blossoms are borne in good-sized clusters, their colour being a rather peculiar shade of red. This species is deciduous, and it can be increased to almost any extent by means of cuttings of the roots, which, however roughly they may be chopped up, will grow if at all favourably situated. This is a native of North America, while a second species, which is hardy in many parts of England, comes from Japan. This is *T. grandiflora*.

flora, which is much stouter growing than the last, for the long flexible shoots remind one when devoid of foliage of Vine canes. The flowers of this are borne about the same time as those of *T. radicans*, which they much resemble, the principal difference being that those of *grandiflora* are rather shorter in the tube, of a brighter colour, and arranged in a looser manner than those of the other. This may be grown as a standard where the summer is sufficiently hot to ripen the wood in the open, and in this manner the long flexible branches when terminated by clusters of flowers render it a very striking subject. T.

WORK IN PLANT HOUSES.

STOVE.—*EUPHORBIA JACQUINIEFLORA*.—There is no kind of stove plant that will give such a long succession of flowers suitable for cutting during the winter and early spring as this *Euphorbia*. To do justice to it, it must, from the time the cuttings are struck, be pushed on in a brisk heat all through the summer and autumn. In addition, the plants must have manurial stimulants to an extent that the majority of winter blooming subjects do not require. The limited amount of roots that the plant naturally makes coupled with their somewhat delicate character necessitates the use of small pots, consequent on which, the soil, even when well enriched to begin with, soon becomes too far exhausted to sustain the growth. Where a night temperature of 65° can be maintained with a proportionate rise in the daytime, they will keep on growing freely. The nearer the tops of the plants are kept to the roof the better. As the tops extend the pots should be lowered so as to give sufficient head-room to keep the points of the shoots from touching the glass.

EUPHORBIA SPLENDENS.—When grown in an ordinary stove temperature, this *Euphorbia* will keep on blooming all the year round. The brilliant coloured flowers when arranged with others of lighter hue in small specimen glasses or in button-holes are very effective; the dash of crimson-violet that is in them takes away the objectionable glare of ordinary red flowers. This *Euphorbia* may be used with advantage for training round a pillar, covering a wall, or training against the glass at the end of a stove. The more light it gets the better it will bloom. Like *E. jacquiniflora*, it is a spare rooter and does best when not over-potted, neither does it require shifting so often as some things provided that the drainage is kept right and a moderate amount of assistance is given by surface dressings of concentrated manure. The plant is far better worth a place than many of the comparatively useless things that have supplanted it.

APHELANDRAS.—Plants of the brilliant-coloured late summer flowering *A. cristata* will last for many years if well treated. One of the chief causes of the specimens dying off is keeping them too long in conservatories or other cool houses when they are in bloom. Now when the flowering will be about over the plants should at once be moved to the stove and have their tops cut back. The current season's shoots should be shortened to within one or two joints of the base from whence they spring. Young examples raised from cuttings last year and now consisting of only a single shoot should be headed back to within 6 inches or 7 inches of the collar; if left higher the future specimens will have a leggy appearance. They should have an ordinary stove temperature from now up to the end of the year; by this means they will break and form short shoots that will make vigorous growth next summer. It is better to defer potting until the spring. Before heading the plants down the roots should be let get drier than at ordinary times, and they must not be too moist all through the winter.

APHELANDRA AURANTIACA ROEHLI.—When struck from cuttings during the spring and early in summer beautiful little flowering plants that will bloom in 4-inch or 6-inch pots may be had and, will come in through the winter or spring, sooner or later according to the amount of heat they are kept in.

ÆSCHYNANTHUS.—The late-flowering sorts, such as *Æ. grandiflorus* and *Æ. splendidus*, will in most cases have now done blooming, and should at once be cut back. It is better to head the shoots in now than leave it until spring, as if the latter time is chosen the young growth which will be made in the interim will have to be sacrificed. In the case of these plants, as of all others that have their tops much reduced at this season, it is necessary to prepare them by allowing the soil to get into a half-dry state. Without this the roots are almost certain to perish. If any increase of the stock is required, cuttings may be made of the shoots that are removed. Any portion of the current summer's growth will strike, though the leading ends, consisting of about three joints each, make the best cuttings, as plants propagated from them usually grow away the quickest. Cuttings made from the lower part of the shoots may be reduced to two joints. Put five or six together in a 4-inch or 5-inch pot. Drain the pots and half-fill them with a mixture of sand and peat, using sand alone for the top. Keep the material moist, and stand them in an ordinary stove temperature; cover with propagating glasses, giving a little air daily. It is not necessary to keep the glasses down so close now as earlier in the season, when the weather was brighter and hotter. During the winter keep the cuttings in a stove temperature; in spring move the little plants just as they have been struck, without separating them, into 6-inch or 7-inch pots. If they are wanted to flower next summer, the points must not be stopped.

ABUTILONS.—The varieties of these plants now in cultivation are much more manageable in their growth than the tall, straggling sorts that preceded them, being more easily induced to form bushy specimens. *Abutilons* are naturally such free flowerers that they will continue to bloom so long as they have sufficient warmth to keep them growing alike in winter as in summer. Plants that have been grown during the summer with the object of flowering through the coming winter, and have accordingly had their shoots stopped two or three times, will now be bushy specimens, with their pots well filled with roots. They should have manure water once in ten days; this should be continued during the winter. Avoid giving it too strong, or the flower-buds will be likely to fall off instead of open. A temperature of 55° in the night will keep the growth moving sufficiently to maintain their flowering. Decided colours, such as the white, the yellow, and the red-flowered sorts, are the most desirable, especially when the flowers are wanted for using in a cut state. *Abutilons* are best adapted to this purpose, as the plants do not carry enough bloom at a time to make them as attractive as some things. Old examples that have been flowering all through the spring and summer will be getting more or less bare at the bottom. If they are wanted to bloom again next summer, it will be advisable to cut them well in; the branches may be shortened down to within a few joints of where they spring from. Keep the roots drier from now up to when the growth begins to move freely in spring, at which time they will require partially shaking out and putting into new soil. Treated in this way, *Abutilons* will last many years, and as old plants will produce more flowers than young ones, it is well where there is room enough to accommodate them to retain them.

HYACINTHS.—The small Roman varieties are preferable for cut flowers to the large bloomed sorts; consequently more of them may be potted, as if put in now they will be in bloom before the earliest of the large ones. Another portion of the stock of these should be potted; it is not necessary to give them so much room as they are sometimes supposed to require; 5-inch or 6-inch pots are large enough for the biggest bulbs; where room is an object two bulbs may be put into the larger of the pots named. An impression sometimes seems to exist that the flowering of these plants almost wholly depends on the strength and condition of the bulbs, so that it matters little what the soil is like that they are potted in. Good bulbs that are old enough to enable them to produce large spikes

of bloom, and that have had their season's growth well matured are essential. But with roots that come up to this standard it is also necessary to use good rich soil, or the best results cannot be expected. Good, free, turfy loam, with a liberal addition of rotten manure and sand more or less as the nature of the loam requires it, forms a suitable compost.

NARCISSUS.—More bulbs of the early Paper-white *Narcissus* should also be now potted with others of the later bunch-flowered varieties to follow in blooming. These may have pots a little larger than those used for *Hyacinths*, especially in the case of the strongest growing sorts of *Narcissi*. Three of them may be put into each pot. One of the most beautiful and useful of all is *N. poeticus ornatus*; it is naturally an early bloomer when grown out of doors and allowed to come in of its own accord. This early-flowering disposition admits of its being forced proportionately early. It may be had in bloom early in the new year. Some of the *Daffodils*, both the single and double varieties, may also now be potted. The use of these bulbs for flowering in pots is more economical than in the case of *Hyacinths*, as if fairly treated after they have bloomed, *Narcissi* will be little worse for growing outside; whereas *Hyacinths*, even when all that is possible in the way of attention is given them, are not worth much after they have been forced.

TULIPS.—More early *Tulips* should be potted. The single *Van Thols* are still the best for early work; they are just as well put thickly into shallow boxes as if potted, for when the flowers are about to open they can be put into pots without the removal interfering with their further progress. One of the advantages of starting these *Tulips* in boxes is that when they are potted each pot can be filled with plants that are just alike in the height of their flowers and in the time of their opening.

SCILLAS, *SNOWDROPS*, AND *CROCUSES* should also now be potted. The *Scillas* and the *Snowdrops* look very well mixed—a bulb of the former in the centre of the pots to five or six of the *Snowdrops*. In this way both will flower at the same time. All the bulbs under notice should be plunged in coal ashes or Cocoa fibre; the former is preferable, as it does not hold so much water in very wet weather as the fibre. In all cases a sufficient body of the material must be put under the pots to keep out worms, and enough of it over the top to prevent the bulbs rising out of the soil; this particularly applies to the *Hyacinths* that are necessarily not put so deep into the pots as the others.

HOUSING PLANTS.—Any flowering or fine-leaved subjects that have been located for a time in conservatories, greenhouses, halls, or rooms should now be moved into houses or pits where they will have the necessary amount of warmth. One of the most beautiful of all *Palms*, *Cocos Weddelliana*, will bear a lower temperature both in summer and winter than it was supposed to be able to do. But there should be no attempt to keep the plant later than the present time where the heat during the night is not from 45° to 50°.

ERYTHRINA CRISTA-GALLI.—This fine greenhouse plant will last for an indefinite time, and keep on increasing in size and also in the quantity of bloom it produces, provided it gets the little attention needful to keep it in health. All that it requires during the winter when it is at rest is keeping out of the reach of frost, with the soil more inclined to a dry than a wet state. As soon as the tops are decayed they may be cut down to within a few inches of the collar. The pots can be placed under a greenhouse stage if care is taken not to put them too near the hot-water pipes, and where the water that is given to other things standing above does not reach the fleshy roots.

T. B.

Calceolaria Burbidgei.—This hybrid *Calceolaria* is valuable where plants in flower have to be supplied all the year round, as it blooms from the latter part of August onwards. It is a hybrid between the strong-growing herbaceous species *Pavoni*, whose blossoms are of a pale yellow tint, and the

small shrubby *C. deflexa*, with flowers of a richer hue. This last was distributed under the very appropriate name of *C. fuchsifolia*, for the dark green foliage bears a great resemblance to that of a *Fuchsia*. It, however, possesses one drawback, as in many cases it does not succeed in a satisfactory manner, so that the idea of crossing it with the vigorous *C. Pavoni* was a happy one, and quite justified by the results. *C. Burbidgei* is in general appearance and constitution about midway between its parents.—H. P.

Æschynanthuses.—A very bright feature at this time of the year is furnished by some flowering specimens of the different *Æschynanthuses*, most of which are seen to the best advantage when treated as basket plants, growing on a rustic wall, secured to a dead Tree Fern stem, or some similar position. One of the very best is *Æ. Lobbianus*,

this way three or four times a day during the summer they will derive very great benefit. Where walls are lined with peat and planted with Ferns, Begonias, and similar subjects, the different species of *Æschynanthus* are well suited for the same purpose, as they will grow and flower freely so treated.—T.

TREES AND SHRUBS.

THE CHILI PINE.

(*ARAUCARIA IMBRICATA*.)

ALTHOUGH this remarkable Conifer is not an especial favourite with all planters, no one can deny that a good specimen is grand in the extreme. Most decidedly a formal, if not a geo-

Tortworth, and scores of other places throughout Britain, there exists no reason why they should not excel their distant relatives on the western slopes of the Andes. In the northernmost portion of its habitat, only on the higher slopes of the Andes, and always in close proximity to the snow-line, it is said to form a belt of forest at an elevation of from 1500 feet to 2000 feet immediately below it. Further south it descends to a lower elevation, its area gradually widening until it approaches the ocean at its southern limit. Whether Menzies obtained his cones and young plants from the highest or lowest altitudes is doubtful, but one fact is certain: the trees were presented to Sir Joseph Banks, who planted one in his own garden and sent the others to the Royal Gardens



Araucaria imbricata in Taymouth Castle Gardens. Engraved for THE GARDEN from a photograph sent by the Rev. J. B. Mackenzie.

which has rather small deep green foliage, long slender branches, and clusters of deep, but bright red blossoms, which spring from dark purple cup-shaped calyces, and, like all the other members of the genus, retain their beauty for a considerable period. *Æ. fulgens*, with more pointed leaves and scarlet flowers, is another desirable species, while yet a third is furnished by *Æ. grandiflorus*. This last is of more erect habit than the two preceding, and may be grown as a bushy specimen in a pot, when it is a valuable autumn-flowering stove plant. Under natural conditions most, if not all the members of the genus are epiphytes, and consequently under cultivation they need but a small amount of compost around their roots, the principal item in their successful culture being thorough drainage, a potting soil principally composed of peat and Sphagnum, a liberal amount of water at all seasons, and the temperature of a stove. In suspended pots or baskets they may be generally watered by means of the syringe, and if wetted in

metrical tree, of rather slow growth in this country, and liable to be browned by very severe frost, it is easy to understand why planters who prefer the massing system of arrangement at one time fought shy of it, especially in the midlands, where in 1860 some very fine specimens lost all their lower branches, and many of the persistent leaves carry the marks of the memorable frost to this day. Very few trees, however, were killed, and as those which escaped injury have made noble specimens, the prejudice which at one time existed has long since disappeared. Introduced in 1796 by Mr. Archibald Menzies, who accompanied Captain Vancouver as botanist to the coast of Chili, the *Araucaria* has now been in this country close upon one hundred years, and, judging from the rate at which perfect specimens are growing at Dropmore, Bicton,

at Kew. One of the Kew plants still survives, and is therefore the oldest, but by no means the largest and best *Araucaria* in Britain. Numerous importations of seeds were received from time to time, but whether they were infertile or the peculiar mode of raising young plants was imperfectly understood, the tree remained extremely scarce through the first half of the present century, the grafter presumably having failed in the attempt to find a suitable stock for it.

In 1844 the indefatigable collector, William Lobb, penetrated the *Araucaria* forests, and succeeded in bringing home to the Messrs. Veitch the first large supply of good seeds, from which nearly all the fine specimens in this country originated. Planters prior to Lobb's introductions had been sadly handicapped by the baneful practice of growing all the choice

Conifers in pots, not inaptly termed death traps, whereby the roots were coiled into masses of solid wood, destined at no distant date to aid the frost of 1860-1 in destroying thousands of already crippled trees. The father of British Pineta, the late Mr. James Veitch, was first in the field as a discarder of pots, and it is more than probable that the beautiful specimens planted at Taymouth Castle, Perthshire, and forming the accompanying engraving, have grown unfettered from the day they left the seed pan. Be this as it may, the death-roll amongst Araucarias and other choice Conifers has been very small since 1861, and conditions favourable to success being so well understood, the intelligent planter may now introduce the Araucaria quite as freely as he would the Japanese gems or the Californian giants. But what are these conditions? For the primary conditions we must go to the home of the Araucaria, or rather we must be guided by information from the reliable collectors who have braved every danger for our benefit. After telling us the strangeness of the aspect of these trees is increased by the hedgehog-like globular cones placed at the extremities of the branches, they say, like the Firs and Pines, their roots spread near, and at the surface of the ground, and on the declivities of the mountains, creeping over the bare rocks and broken slopes like gigantic serpents. From this information, those who run may read the fact that our first business is to get rid of stagnant water, at the same time not forgetting that the rainfall and the rush of snow water in the Andes keep the roots constantly moist. We must not starve our specimens on hard-baked lawns from which every blade of Grass is removed for the sake of neatness. If we would have fine, full and perfect specimens we must drain thoroughly, then to compensate for the diminished supply of rain we must give them a good root-run in generous loam, we must top-dress with the same, and whilst giving the heads of the trees full exposure to sun, air, and light, we must in some way prevent rapid evaporation, especially in hot, dry seasons. A rather high and open situation being more conducive to progress than a low and damp one, this is not an easy matter, especially where the rainfall is light, but it may be effected in the following manner, as practised by the accomplished planter, the Earl Ducie, at Tortworth. There his lordship has foregone the closely shaven turf, substituting for it an uneven root covering of loose sandstone, and his best specimens, although not the largest, are equal to the finest in the kingdom. Loose stones, by no means unsightly, whilst absorbing heat and keeping in moisture, form a clean, pleasing bed for the branches recumbent upon them, and last, but not least, they offer facilities for giving copious supplies of water in dry seasons. The tree in its mode of growth is quite as remarkable as it is in appearance, for whilst all other healthy Conifers commence and perfect their leaders in the course of our temperate summer, the Araucaria takes two summers to complete a single whorl of shoots and start a fresh leader. Invariably the trunks are straight, and the branches are in whorls, generally of five; the leaves are spirally arranged around them, also round the stems, and being persistent they remain firmly attached for a great number of years. Both pollen and ovule-bearing catkins are produced at the extremities of the upper branches, the former falling as soon as the pollen is shed, the latter, 6 inches to 9 inches in diameter, remaining to mature their seeds, which they do at the end of the second year. The fertile cones on this account are some distance back upon the branches when

they shed their seeds, which are Almond-shaped, an inch in length, and edible. For many years the Araucarias were considered diocious, but this idea has been exploded by trees at Bicton and other places producing male and female catkins, not only on the same tree, but on the same branch; consequently the supposition that the two distinct forms of growth—close and compact, elongated and candelabra-like—were, the first female, the second male, may now be converted into the fact that the Araucaria is capable of producing fertile seeds and numerous sub-varieties. As a timber tree the Araucaria has not had time to develop its good qualities in this country. In Chili, however, it is extensively used. The heartwood, which is yellowish white, hard, fibrous, and beautifully veined, is capable of taking a high polish.

There are six other species of Araucaria grown in this country, viz., *A. Bidwilli*, *A. braziliensis*, *A. Cooki*, *A. Cunninghami*, *A. excelsa*, and *A. Rulei*, but being natives of Australia and Brazil, they are too tender for our climate. As conservatory, winter garden, and terrace plants, grown in pots and tubs and sheltered in winter, they are invaluable.

The Rev. J. B. Mackenzie, who sent the photograph from which the annexed engraving was made, writes thus about the plants figured:—

The Araucarias at Taymouth Castle Gardens have done well, and are still in a most thriving condition. They seem, if the soil is right, to endure any amount of cold, as they resisted undamaged the severe frosts (5° under zero) of nine years ago. The soil is a light loam, deep and dry, and seems to suit them well. The water oozing from the hill behind prevents them becoming too dry. A few small shrubs, as shown in the illustration, seem to heighten the effect of solemn grandeur aimed at. W. C.

SHORT NOTE.—TREES AND SHRUBS.

Quercus pedunculata.—Can any reader of THE GARDEN give any information about *Quercus pedunculata*? If rare, and where a native of?—R. C.

The Tansy-leaved Thorn (*Cratægus tanacetifolia*).—This Thorn flowers very late, and in the autumn it is noticeable for its large fruits. It is a very stiff-growing tree, quite devoid of any graceful character whatever, but its distinct appearance renders it interesting at all seasons, for during the summer the deeply cut, peculiar greyish-green foliage is very different from that of the other Thorns, while in winter the ashen-grey bark is a distinctive feature. This Thorn is a native of Asia Minor, and has long been known in this country, but it is now seldom planted, though the fact that good specimens are occasionally met with in old-fashioned gardens would seem to indicate that it was at one time held in greater esteem than at present. It is also especially interesting as being the only species of *Cratægus* that has been illustrated by means of a coloured plate, which appeared in THE GARDEN, Dec. 19, 1885.—T.

Common Tupelo Tree (*Nyssa multiflora*).—This, the Tupelo of the United States, is one of the first of our hardy trees to take on its rich autumn colouring. The Liquidambar, on the other hand, is much later, for as a rule its leaves do not assume their richest garb till those of the Tupelo are past. The Tupelo is a native of a considerable tract of country in North America, being mostly found in moist spots, which it prefers in this country, yet it may succeed fairly well in dry soils. The rate of progress is much less, but the decaying leaves are, perhaps, even more brightly coloured than where a greater amount of moisture is to be found in the soil. It grows from 15 feet to 20 feet in height, though it may be sometimes met with taller than that. The Tupelo is very rarely seen, unless in some old-fashioned gardens, but it is still well worth the attention of planters by reason of its brilliant autumn display. Though

many trees and shrubs are planted for the sake of their flowers, the gorgeous autumn colouring that some assume is, generally speaking, little recognised, yet in some seasons they furnish a prolonged display. The colour that the Tupelo assumes is a rich bright crimson, yet there are others furnishing different shades of red, yellow, orange, and brown. This *Nyssa*, like many other North American trees, was introduced into this country during the early part of the last century.—T.

MARKET GARDEN NOTES.

THE copious rains that have fallen of late, although they delayed work for a few days, will be of immense benefit, not only to green vegetable crops, but especially to fruit trees that are now plumping up the buds and ripening the wood for next year's crops, neither of which can go on satisfactorily if the roots are dry. In this locality the surface soon dries after rain, and already the work of preparing for winter is being pushed on rapidly. The crops needing special attention now are

CABBAGES, that are being put out in immense quantities and under very favourable circumstances, as both plants and soil are in excellent condition. Soot is applied liberally to this crop, as it not only acts as a stimulant, but wards off slugs and other pests. Marketing the crops of nice young Cabbages that were put out at midsummer is now going on briskly, and large quantities of red pickling Cabbages are being cleared off, as should severe weather set in early, they split and decay. This crop requires a good soil; some growers make a speciality of it.

CAULIFLOWERS are being put out under cloches and handlights, also in cold frames and in sheltered spots close to walls. Nine plants is the usual number under a handlight, and these are reduced to two or three in spring by transplanting a portion on to warm borders.

LETTUCE AND ENDIVE are claiming more attention now, as there is the pricking out of small plants into cold frames and under the shelter of walls to stand the winter, while larger ones that are required for use in winter are being lifted and planted where shelter can be readily applied to them. The crops of the hardest kinds of Lettuces, such as Bath Cos and the hardy Cabbage kinds, that are sown thinly to mature where they are sown are being thinned out and the soil stirred amongst them to get them well hardened before winter sets in.

CELEBY is now being sent to market in quantity and of excellent quality, the white varieties being most largely grown for early crops, and the red for late ones.

CAULIFLOWER AUTUMN GIANT is now in fine condition, and great quantities are being marketed. This variety is very valuable, and great pains are taken with it, as a succession from September until near Christmas can be had. The plants are raised by some growers in autumn, as in the case of the Early London, and planted out in March or April in rows 3 feet apart each way. They thus get full exposure, and produce heads that cannot be equalled by those in close walled-in gardens. Spring-sown plants, put out before they get crowded in the seed beds, are treated to plenty of space, and produce a succession of fine solid heads.

POTATOES of the late sorts, such as Magnum Bonum and Champion, are being lifted now, and as a rule are yielding fine crops, but in this locality the chief reliance is placed on early planted and early lifted supplies.

WHITE TURNIPS are now in great request and in excellent condition from the open fields. This crop evidently delights in fresh soil, for however fine Turnips may be grown in rich garden soil, the mildness of flavour and tender flesh seem to belong to the field-grown ones, and as soon as Runner Beans and Marrows get cut off by frost the Turnips sell freely in any quantity.

TOMATOES.—The remnant of the outdoor crop has just been cut and placed under glass to ripen, as the slight frosts and heavy rains cause the fruits to crack or rot. We have cut many bunches of over two pounds each.

FRUIT.—The gathering of late Apples and Pears is now being completed, as the gales of wind and slight frosts at night are not favourable to the ripening fruit. As far as this locality is concerned, we have no reason to complain of the quantity or quality of the crops, or of what is perhaps of more consequence from a market grower's point of view, viz., the price that is obtainable in our local markets. Planting of fruit trees seems likely to be carried on briskly again this season; the soil is now in excellent condition, having been well moistened by recent rains.

FLOWERS are every year increasing in favour with market growers, and the majority of those who live within a few miles of large towns grow them more or less as intermediate crops either amongst their fruit trees or in rotation with vegetable crops. One of the crops generally grown is the single blue Violets of The Czar type; these are obtained from young plants put out about 1 foot apart on rich, well-cultivated soil, as early in spring as possible. Chrysanthemums, also largely grown, either in pots or in the open ground, are lifted with good balls of earth at this time of year and replanted in glasshouses from which crops of Cucumbers or Tomatoes have just been cleared. The blooms generally sell freely as soon as the outdoor flowers are cut off by frosts.

Gosport.

JAMES GROOM.

SOCIETIES AND EXHIBITIONS.

CRYSTAL PALACE FRUIT SHOW.

THE exhibition of hardy fruit on Oct. 10, 11, and 12 at the Crystal Palace was a surprise, not from any novel arrangements in the show itself, but from the even quality and rich colours of the fruit. This is a miserable year for the fruit crops, as the reports that have recently been published in *THE GARDEN* prove, but there is plenty of colour, thanks to the summer-like September which ripened up the wood and gave a finishing touch to the hanging fruits. Such an exhibition as that at the Crystal Palace, although the best fruit counties in England were represented, is misleading, not to say injurious. A few of the collections shown, and those unfortunately that won prizes, contained fruits grown in an orchard house, as anyone with a practised eye could easily discern. Fruits absolutely without blemish are not produced in the open air in England, and it is misleading to the public to stage them in collections of hardy fruit. It should be compulsory to state where the fruits are grown, whether under glass or otherwise, and it is manifestly unfair to permit orchard-house grown fruit to compete with that from the open cultivated under natural conditions. This difficulty could easily be overcome. There could be separate classes for orchard-house fruits if it is thought necessary to have them, which we do not, and classes for fruits grown on cordon, espalier, or standard trees. Then we should have a fair competition, and the public would not be misled by mere appearance. There is one other feature of the Crystal Palace show that has become monotonous from its constant repetition, and that is the collection of Gourds and Pumpkins. They make a show and have a passing interest to visitors who can admire the huge size of the Pumpkins and the quaint and various shapes of the Gourds, but beyond this they are of no value whatever. It would be far better to make additional fruit and vegetable classes or introduce variety and freshness by other features that would convey some real good. We are not such a Pumpkin-loving race as to justify three classes for them at a public exhibition.

Apples were remarkable for colour, especially such varieties as Cox's Pomona, and collections came from Devonshire, Kent, Hereford, Wiltshire, so that it is not one county alone that stands well for Apples. A very fine exhibit was that from the Maidstone Nursery of Messrs. G. Bunyard and Co., who showed excellent fruits, clean, large, and even, especially of such varieties as Worcester Pearmain, Small's Admirable, Yorkshire Beauty, Blenheim Orange, which was unusually good throughout the show, Dutch Mignonne, September Beauty, an

Apple not unlike Cox's Orange Pippin, and very highly coloured; Stone's Apple, Washington, rich yellow, flushed with red on the sunny side; Emperor Alexander, and Cox's Pomona. A beautiful collection, comprising only fruits from the open, was that from Mr. C. G. Sclater, Heavitree Bridge, Exeter, who had excellent samples of Cox's Pomona, Annie Elizabeth, Carlisle Codlin, Gravenstein, Cornish Aromatic, Court Pendu Plat, and Sowton Seedling, a large Apple in the way of Waltham Abbey Seedling, and said to be a good bearer and of excellent quality when cooked. The finest fruits in the exhibition were undoubtedly those of Mr. G. Woodward, gardener to Mr. L. R. Leigh, Barham Court, Maidstone, who was first for twenty-four dishes of Apples, all of which were typical of the varieties represented. We must mention Cox's Pomona, faultless for colour; Ribston Pippin, Stone's Apple, Belle Dubois, Washington, Calville Rouge, Mère de Ménage, and Lord Derby as the finest fruits of the several kinds we have seen this season, and not grown under glass. The second award went to Mr. A. Waterman, gardener to Mr. H. A. Brassey, Preston Hall, Aylesford, who had Gloria Mundi in true character. There was a class also for twelve dishes of Apples, in which Mr. S. H. Goodwin, Mereworth, Kent, was first, staging excellent fruits.

Pears were poor and colourless, even such fruits as usually show red cheeks being pale and rough. Messrs. T. Rivers and Sons, Sawbridgeworth, had a fine collection, in which were fruits of Doyenné du Comice, a Pear shown well by most growers, Emilie d'Heyst, and Gansel's Bergamot. This firm was placed first, and Mr. James Butler, gardener to Mr. A. J. Thomas, Sittingbourne, second. The best fruits came from Mr. Geo. Woodward, who was first for twelve dishes of Pears, and although there was not much competition in the classes for this fruit, his collection would have stood well, however severe the rivalry. The best fruits were those of Doyenné du Comice, Pitmaston Duchess, Beurré Diel, Beurré Superfin, General Todtleben, Beurré Hardy, and Duchesse d'Angoulême, most of them standard kinds.

There were several large miscellaneous collections. A splendid lot of fruit, both Apples and Pears, was exhibited by Messrs. J. Veitch and Sons, Chelsea. Good collections were staged by Messrs. J. Laing and Son, Forest Hill, Messrs. George Paul and Son, Cheshunt, Messrs. Cheal and Sons, Crawley, Mr. W. H. Frettingham, Beeston, Mr. John Peed, Streatham, and Messrs. T. Rivers and Son, who had a number of fruit trees in pots, to show the prolific bearing of such kinds as the Melon and Bismarck Apples and the Guigne de Winkler Cherry, a very fine fruited variety, of rich colour. A small pot tree of the Maringo Crab was as ornamental as the Siberian Crab in the shrubbery; it would be worth growing such trees for decoration alone. The same firm also had large brightly coloured fruits of the American Apple, King of Tompkins County. Mr. James Butler had a number of fruits of Louise Bonne of Jersey, a Pear he knows well how to grow. The fruits were as freely spotted and as high in colour as the Trout Pear.

This is a great year for vegetables, and the produce exhibited was exceptionally fine in both quality and variety. The best exhibit in the class for any number of vegetables to be arranged for effect was that from Mr. T. Beckett, Cole Hatch Farm, Amersham. The produce was that now in season, and excellent in quality. Mr. Waterman was second. As in the preceding class, so in that for twelve dishes there was a brisk competition. Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, was first with admirable specimens of Duke of Albany Pea, Snowball Turnip, Autumn Giant Cauliflower, and Lyon Leeks. There was a similar class for cottagers, whose produce was not a whit poorer than that from the better class of gardens. The Autumn Giant Cauliflowers were as clean and white as any we have seen this season.

There were special prizes offered by Messrs. James Carter and Co., High Holborn, Sutton and Sons, Reading, and J. Cheal and Sons, Crawley, for vegetables, and in all cases the competition was keen.

The classes for Gourds call for no comment, except that Mr. C. Osman, of the South Metropolitan District Schools, Sutton, who was first in both cases for collections, had interesting and varied types; but we hope we have seen enough of Gourds at the Crystal Palace for the next few years.

There were a few collections of flowers. Messrs. Hawkins and Bennett showed splendid flowers of the Chrysanthemum Mrs. Hawkins; and Messrs. John Laing and Sons showed tuberous Begonias, exquisitely arranged with Ferns. Messrs. Paul and Son exhibited hardy flowers in season; and Messrs. Cannell and Sons tuberous Begonias, Gourds, &c.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the general committee was held on Monday evening last at Anderton's Hotel, Fleet Street, Mr. E. C. Jukes occupying the chair. The honorary secretary gave in the report of the early September exhibition, and stated that the sum of £84 2s. had been paid for prize money and six medals awarded. Specimens of the society's medals, struck by Messrs. Restall, in silver and bronze were submitted for consideration, and as their offer was much below the charge made by the society's medallist for such work, it was resolved that Messrs. Restall should be instructed to supply them. Mr. Gilbey, a member of the general and floral committees, having tendered his resignation, his place was filled up on the former by Mr. Ironsides, and the latter by Mr. Boyce. Mr. G. Gordon formally announced the publication of the supplement to the society's official catalogue.

With regard to the provincial show at Hull, Mr. W. Holmes reported that he had been to Hull the previous week and concluded final arrangements for the carrying out of the show, the building in which it is to be held being capable of suitable adaptation for the purpose. In the Hull Society's schedule entries are required to be made seven days previously, but in the National only three are necessary; it has been settled between the societies that all entries made through Mr. Holmes shall be accepted if made in accordance with their rule. At the conference, papers will be read by Mr. Gordon and Mr. J. Wright, and the chair taken by Mr. E. C. Jukes. Exhibits of horticultural sundries will be allowed on similar terms to those at the Aquarium. Members of the National Society visiting Hull will find a room retained for their use at the Station Hotel during the duration of the show. It is expected that most of the members and friends will leave London by the 5.45 train the evening before the day appointed for the opening of the Hull show. Certificates will be awarded by those members of the floral committee who visit the show on the same lines as at an ordinary meeting of that committee. Several members of the society having been invited as judges at the Ghent Centenary show, it was resolved that they and any others subsequently invited should act as an official delegation from the National Chrysanthemum Society. As some anxiety was expressed on the subject of the music licence being withdrawn, it was announced that in any event the November exhibition of the National Chrysanthemum Society would not be affected by it, as the directors would keep the Aquarium open for other purposes. A dinner will be given to the members of the floral committee on Dec. 11. New members were elected, bringing the society's roll up to 626.

Gardening at night.—During the day I fuss and worry, watch and wait, and results come slowly. Bugs on the Potatoes, bugs on the Cucumbers, bugs on the Asparagus, worms on Currants and Corn and Tomatoes; drought on the hill, mud in the hollow; poor seed, poor plants, labour apparently wasted; this is often the record of the hours of sunshine. But exhilaration, as of intoxication, comes with lamplight. The catalogues, oh, the catalogues! Brilliant of scarlet and gold and green and blue; lovely women, running brooks, ever-verdant lawns! How the covers dazzle the eyes! How the pages disclose visions of fairy-lands and paradise! There are no failures here. Only buy, dear friends, buy!

You are "absolutely sure" to succeed. Here are the pictures! and right under them are the descriptions! And for the novice, here are the directions! Nothing can be easier. I have one of the butterfly catalogues before me. It is "grand," "superb," "charming," "magnificent." I started out to count the number of times the word "grand" occurs in its score and a half of pages, but I gave it up. I have not the time. And then the new things in some of these catalogues! One's head swims as he contemplates the power of the gardener to make new species—new species, mind you—out of the whole cloth, from a new bolt of entirely new design. And with what superb complacency does the writer use the Latin names, that we may never mistrust that some "superb new acquisition" is some old acquaintance or some common nuisance. Now and then a contributor to some garden journal explodes himself because these plantsmen do not give us the Latin names, so that we may know what they are talking about. And now they have done it! and I must buy *Euphorbia corollata*, "a truly beautiful flower," before I can know that it is the same individual whom I tried for two summers to expel from my flower garden! Or I must buy *Nepeta Glechoma*, "a new trailing plant," in order to find out that my new purchase is an old, old friend!—*American Garden*.

NOTES OF THE WEEK.

Strawberries in October.—On the 16th inst. I picked ripe Strawberries out in the open. The plants were growing on a bank on a south aspect. I hope to be able to pick some more in a few days.—G. B. BLUETT, *Fenton, Paignton, S. Devon*.

Bellis sylvestris is a plant that always commands attention from visitors. It has Erigeron-like leaves, each 3 inches or 4 inches long, and handsome flowers, each 1½ inches across on stems 9 inches high. It is a gigantic common Daisy, the flowers white, pink tipped, with yellow centre.—T. SMITH, *Newry*.

The Lion's-tail plant (*Leonotis Leonurus*).—I send you a bloom of an old, but not a very common plant, *Leonotis Leonurus*, which deserves, I think, to be better known. I am not sure if it has been figured in THE GARDEN, but it is almost worth a plate.—A. RAWSON, *Widenedmere*.

*A fine specimen; a coloured plate of this was given in THE GARDEN, April 25, 1885 (p. 368).—ED.

A fine *Sarracenia purpurea*.—There is growing by the side of a small pond, and only raised 3 inches or 4 inches above the water, at Dromolane House, near here, a specimen of the above which measures over 2 feet across, and has 135 fully developed pitchers. It has been planted about six years; there are many others, but this one is by far the best.—T. SMITH, *Newry*.

***Lilium speciosum* Krætzeri.**—I have grown this year thousands of bulbs of the different varieties of *L. speciosum*, both imported from Japan and procured from Holland, and of these all the rubrum and roseum class exceeded Krætzeri in height by more than a foot. This difference was very strongly marked where breadths of them were grown side by side and under exactly similar conditions.—H. P.

Pomegranate in fruit.—I have this day forwarded to you a small specimen fruit of Pomegranate, grown in one of the public pleasure grounds in Torquay. The shrubby lies between two public roads and directly adjoins them. There are no walls or other protection, and the tree has not had more care than other shrubs in the grounds.—JOSEPH HALL, *Torquay*.

*The fruit sent is not that of the Pomegranate, but of Maule's Quince (*Cydonia Maulei*).—ED.

Flowers from Yorkshire.—I send with this a few *Harpalum* flowers. The plant is yet green with thousands of buds and hundreds of flowers, though it began to have fine heads long before rigidum in August, and which has long since died quite down. You may also observe that, besides the flowers being of good colour, the ray florets are very full or semi-double, and the peculiar twist they take gives the head a distinct feature. This semi-double property has become more developed in the later flowers. We have twice had 5° of frost; still the plant is blooming. I know nothing of its origin, only that the plant has appeared by the side of H.

rigidum, and close by are eight or ten other *Sunflowers*.—J. WOOD.

Anthurium Laingi.—This beautiful *Anthurium* improves on acquaintance. A well-grown plant of it was shown by Sir Trevor Lawrence, Bt., at the last meeting of the Royal Horticultural Society, and there are several specimens of it in Messrs. Laing and Sons' nursery at Forest Hill. The spathe is, when well developed, of good length and width and pure white, a point of value, as we have no white-spathed *Anthurium* of such beauty. The plant is a robust grower, and should make a good specimen for exhibition. Messrs. Laing received the plants in a batch of *A. Andreanum* sent over from a Continental nursery. They are fortunate to have found such a prize.

Roscoeia purpurea.—If the writer of the note on the above plant in THE GARDEN of Oct. 12 (p. 332) will look back to THE GARDEN for Aug. 31, he will find that this flourishes remarkably well in Mr. Thompson's garden at Ipswich, so that Kew is not the only place where it is grown out of doors. Mr. Thompson had quite a large group in his garden. The plant was entirely new to me, and it struck me at once as being both a distinct and handsome thing. It is most interesting to learn from the recent note how this plant appears to accommodate itself to such varied treatment.—A. H.

Fortune's Saxifrage (*S. Fortunei*) and its near ally (*S. cortusaeifolia*) are both in full flower in the open at Kew. *S. Fortunei* is a splendid autumn plant, but probably its comparative tenderness in late autumn keeps it from becoming such a general favourite as it deserves. In mild autumns it usually flowers at its appointed time, but the chances are always against it, and when we do happen to have a severe frost before the end of October the flowers usually get destroyed. As a cool greenhouse plant it has few equals for autumn blooming, the deep green leaves and graceful loose panicles of white flowers being very attractive. A native of China.

Colchicum Parkinsoni, now in full bloom, is one of the loveliest of the Meadow Saffrons. It may be readily distinguished from its nearest ally, *C. variegatum* or *agrippinum*, by its larger flowers and deeper purple colour. It is as easy to grow as the common *C. autumnale*, though perhaps not so profuse in bloom or so quickly increased. It is, however, a very handsome addition to our autumn flowers and should be encouraged. *C. speciosum* is also a charming species and shows a tendency to variation in a very marked manner, especially in the first generation. The flowers are larger, the colour darker, and the general effect of the variously tinted seedlings was very marked.

Limnanthes Douglassi.—Although this charming annual does very well from spring-sown seed, it is always stronger, and gives less trouble by scattering the seed over the ground in the autumn. It is a native of the north-west coast of America, and may be classed as a hardy annual. It proves to be an excellent bee plant, and as it never fails to yield a great profusion of flowers, it can be thoroughly relied on by bee fanciers with a limited space. It forms dense tufts of pale green foliage, succulent and finely divided. The flowers, about the size of those of the Bluebell, are produced in abundance from the centre of the tuft, and have white striated petals with a deep yellow base. There is now a variety called *grandiflora* in the trade, with larger flowers and more intense yellow base.

Fruit culture.—Towards the fund which the Lord Mayor and the Fruiterers' Company are raising for the encouragement of fruit culture in this country the Duke of Westminster has contributed £50; the Baroness Burdett-Coutts, £50; the Earl of Dartmouth (first donation), £20; Mr. W. H. Smith, M.P., £20; the Duchess of Grafton, £5; Mr. F. Gorrington, £10 10s.; and Mr. R. P. Barrow, £5. Lord Dartmouth, in expressing his thorough approval of the object, says he shall be very glad if it shall be found possible to establish in different localities trial orchards and fruit gardens, so as to prove to the neighbourhoods what kinds of fruit

trees and plants best suit particular soils. He particularly hopes that the culture of the Tomato, which, though not strictly speaking a fruit, is, he believes, increasing in popularity and imported from foreign countries in large quantities, may not be lost sight of in connexion with the movement.

Aster cordifolius.—The cordifolius group of Michaelmas Daisies is very charming, and little wonder that one finds the various members of the group dubbed elegans in gardens, as the general habit, flowers, &c., are very elegant and beautiful. The earliest of the group to flower is *A. sagittifolius*; next comes cordifolius with its myriads of pale lilac flowers; then Drummondii, with larger flowers of a darker hue; and last, but not least, undulatus and its variety diversifolius. *Aster Lindleyanus*, a most lovely and graceful variety, also belongs to this group, and was first raised in this country from seed received from Labrador. It, however, seems to be entirely lost, unless hidden in some of our old English gardens. It has leaves somewhat like those of *A. cordifolius*, with a denser head, flowers twice the size, and of a pale lilac colour. Has any reader of THE GARDEN anything answering this description?

Geranium nepalense.—This heading of Mr. Buxton's note on page 334 might seem to suggest that *G. nepalense* and *G. Wallichianum* are identical. They are, however, very distinct. *G. nepalense* (Sweet's "Geraniaceæ," tab. 12, and Hooker's "Flora of British India," vol. i., p. 430) does not seem to be in cultivation, and to judge from Sweet's portrait and the descriptions of it, gardens do not suffer by its absence. I have grown *G. Wallichianum* for many years. It is a short-lived plant, and can be reproduced only from seed, which it ripens sparingly, so it continues rather scarce. The colour of the flowers varies from deep blue to several shades of pink. The plant flourishes at Kew, and in suitable soils and situations is fairly ornamental. Here it is often mistaken for *G. pratense*, but its habit is prostrate. I have measured my largest plant, three years old, and find it 8 feet across and more than 20 feet round. Plants of smaller dimensions are often more flowery.—C. WOLLEY DOD, *Edge Hall, Malpas*.

Scabby Potatoes.—Will you kindly inform me through THE GARDEN what is the cause of Potatoes being scabby, also what can be done to prevent it? Will lime stop it?—S. E. D. TURNER.

Preserving autumn leaves.—I shall feel much obliged if you could tell me how to preserve the autumnal leaves for winter decoration. I have tried pressing them, but without success. I think there must be some solution into which the leaves ought to be dipped to preserve the richness of the colour.—M. H.

Death of Mrs. B. S. Williams.—We hear with sincere regret of the death on the 10th inst. of the wife of Mr. B. S. Williams, Victoria Nurseries, Upper Holloway.

Death of Major A. F. Lendy occurred on October 10 at Riverside House, Sunbury-on-Thames. He was an ardent lover of Orchids, and his collection was large and rare, but was sold recently owing to his failing health. Major Lendy was in his sixty-fourth year.

BOOKS RECEIVED.

"Report of the Science and Art Museum, Dublin."
"Bulletin of Miscellaneous Information." No. 34. Royal Gardens, Kew.

"Manual of Orchidaceous Plants Cultivated Under Glass in Great Britain." Part 5, Masdevallias. James Veitch and Sons, Chelsea.

Names of plants.—*Curly*.—1, Winter Cherry (*Physalis Alkekengi*); 2, *Sedum Sieboldii* variegatum; 3, *Maranta* of some kind, but leaves too shrivelled to tell variety; 4, state where grown.—A. H. Marchant.
—Winter Cherry (*Physalis Alkekengi*).—H. A. L.
—*Calycanthus floridus*, Gibraltar Daisy (*Odontospermum maritimum*); the other is the Winter Cherry (*Physalis Alkekengi*).—R. Fycher.—Impossible to name from leaves only.—Seth Smith.—*Dendrobium formosum* giganteum.—J. Taylor.—*Cattleya Harrisoniana*.—Isaacson.—One of the large-leaved American *Magnolias*.—H. V. D. B. Fern. *Asplenium viviparum*. Please send better specimen of the other plant.

Name of fruit.—*Brien*.—The Peach was quite rotten.

WOODS & FORESTS.

TREES AND SHRUBS ON CLAY.

I HAVE lately had an opportunity of seeing the ability of a few trees and shrubs, not only to live, but to thrive well in pure clay. I do not mean the heavy, retentive soil of a stiff, stubborn, tenacious character, that often is designated clay, but the real, genuine yellow article, devoid of stones and without a particle of sand or anything in the shape of loam near it. The position was on the side of a hill, through which a road had been cut, after which the slopes thus formed had been trenched over, and at once planted with a variety of subjects such as are usually found at the present day in shrubberies. What was the intention or expectations of the planter as to the result of his work it would be difficult to guess.

At all events, very few of the trees and shrubs planted were able to live; common Laurels scarcely grew at all, and their leaves were almost the colour of those of the new yellow Dogwood; others consisted of Portugal Laurels, Aucubas, Bays, Berberis Aquifolium, B. Darwini, Evergreen Oaks, Arbutuses, Tree Box, Hollies, Cotoneaster Simonsi, C. microphylla, Hypericums, Spruce Firs, Cedars, Cypressess, Junipers, Yews, and Pinuses.

Amongst the whole of these and others there were none that thrived, except Thuja Lobbi, Cryptomeria elegans, and the double Furze (*Ulex europæus* fl.-pl.). The Thujas made shoots 18 inches long in a season, and evinced little dislike to the ungenial soil in which their roots were placed beyond carrying foliage of a somewhat paler tint than when grown on good ground. The Furze grew and appeared as healthy as if on a dry, loamy bank.

The Cryptomerias also made very fair headway, and their foliage all the year round was of so intense a reddish-purple hue as I have never seen approached, even in the autumn or winter, in any other place. So remarkable was this, that at first sight the trees looked as if they were dead. Could this tree be induced to assume this colour in company with others possessing the usual shades of green, where these latter succeeded well, it would be still more valuable for contrast than it now is.

It is scarcely necessary to say that it is by no means advisable to plant either trees or shrubs in such unkindly material as the above without its being first well aerated and some soil of a better description added to it; but it is something to know that there are a few plants that appear to thrive in defiance of the stubborn nature of the medium in which their roots are placed. I traced some of the roots of the Furze and they had penetrated straight down into the clay to a depth of 4 feet. X.

Seedling Cork trees.—Although the Cork tree does not, as a rule, produce many good acorns, yet in favourable seasons we get a few for planting. In their young state Cork trees require attention in the way of stopping strong side shoots that are rivalling the leader, for if left to their own habit of growth they appear more inclined to form a spreading many-headed bush than a fine single trunk. The beauty of many a specimen is marred through lack of a little judicious pruning during the early stages of growth.—J. G.

The Weeping Beech is undoubtedly one of the most remarkable of drooping trees. Its habit of growth is somewhat odd, but at the same time picturesque and beautiful. In a young state it is perhaps less attractive than other weeping trees, and it is too often grafted on a short stem, on which its true pendent habit is not seen to the best advantage, but when it is worked on a tall clean stem

and has attained mature age, a Weeping Beech is an object of great beauty, more particularly when in a suitable position and associated with trees of a light airy habit, such as the Birch and Willow. A Weeping Beech is one of the most persistent of weepers; its branches and even spray hang vertically one over the other in massive flakes or layers, giving the tree a distinct and singular appearance; and whether viewed in spring, when clothed with luxuriant pale green foliage, or in autumn, when it has assumed a warm brown colour, it forms a noble and picturesque object in the landscape. It is, perhaps, seen to the best advantage when planted on the verge of a stream, pond, or lake; but on a steep sloping bank in pleasure grounds, where ample room is given it, or on a rocky eminence in a wild ornamental wood, it forms a telling feature of great interest.

THE PLANTING SEASON.

The planting season is now at hand, and those who contemplate planting either on a large or small scale should lose no time in either sending their orders or personally visiting a public nursery with the view of choosing and selecting the plants which they require, in order to have them at hand as soon as they have matured their growth, and thus be enabled to take advantage of the long day to push forward planting as quickly as possible. As the securing of good plants is a matter of paramount importance in attaining success, it should never be neglected or lost sight of at the proper time. When the plants arrive from the nursery the bundles should be opened out to prevent heating and the plants laid in thinly. Here the young trees will be quite safe for several months, and may be removed and planted at discretion. There is no great risk of young deciduous plants heating although left in the bundles, but Pines and evergreen stuff are certain to heat if left for any great length of time. If once allowed to become heated they are sure to fail. Such plants should likewise be protected from the inroads of hares and rabbits, more especially during a time of hard frost and snow, and this I have done in a cheap and efficient manner by placing a quantity of Bramble and thorny scrub around the margin of the plants.

I have occasionally seen grave mistakes committed by commencing to plant trees on the open ground before it was prepared by fencing and draining where necessary, and it was only after considerable numbers of the plants had been cut over and the stems peeled by vermin that the neglect and urgent want of fencing became manifest. Again, I have seen damp and wet land planted with young trees where in the course of a short time about one-half of them perished through excess of moisture at the roots, while those that remained alive were so stunted in their growth that they did not recover until the ground was drained. In such a case it is not only the extra expense for plants and labour that we have to consider, but also the loss of time before the plantation becomes established.

Another point of importance in the formation of new plantations of any great extent is the laying off of roads and drives for the removal of timber and the convenience of sportsmen. As this can be done most advantageously when the ground is bare and its formation can be seen, the planter will be enabled to accomplish the work with ease and facility. These roads may be of different breadths according to the requirements of the situation, but they should always be broad enough to allow carts or other vehicles to pass each other with freedom. In the formation of such roads it is not absolutely necessary to be at any great expense, further than cutting a small drain or water channel along both the sides, and in cases where the ground in the centre of the road is flat or hollow, the material excavated from the drains should be used to raise the centre a few inches higher to induce the surface water to run into the side drains. It sometimes occurs that roads have to be formed through a piece of ground that is always in a wet state owing to the presence of water below the surface, and as the side drains under such conditions will not ren-

der the road dry and firm, a drain should be cut right along the centre of the road, and either a tile pipe laid along the bottom or a culvert made with stones to allow the water to escape. The drain should then be filled up with small stones, shingle, or rough gravel. It is seldom that this class of road requires to be macadamised, but loose bare places can often be much improved by sowing the seeds of some of the deep-rooting natural Grasses to bind the loose material on the surface.

J. B. WEBSTER.

The White Ash.—Apart from its probable value as a timber tree, the White Ash (*Fraxinus americana*) is a much more ornamental and striking tree than our native Ash. The large and handsome leaves with their distinctly whitish under surfaces and the vigorous growths place this North American tree in the first rank of ornamental trees for the park or pleasure grounds, as its timber places it, throughout the districts where it grows wild, in the first rank from a purely economic standpoint. It grows, moreover, as quickly and is quite as hardy as our common British Ash. The wood is light, tough, very strong and elastic, and is extensively employed in the manufacture of agricultural implements, carriages, oars, cabinet-work, &c. It attains a height of 60 feet to 80 feet, with a trunk 4 feet to 6 feet in diameter. It has grey furrowed bark and smooth grey branchlets, with rusty coloured buds.

The Black Poplar (*Populus nigra*).—This well-known tree is found in almost every part of the United Kingdom. Its leaves, which are 3 inches long by 2 inches broad, are almost triangular in form, thick and tough in texture, and grass-green in colour. It is a very rapid-growing tree, and in a rich fresh soil frequently rivals the Oak in size. The bark is ash-grey, but upon the branches and young trees it is of a light yellowish tint. The leaf-buds are sharp-pointed, thick and glutinous, and emit a strong balsamic odour when bruised. Bees are very fond of this tree, and a few specimens should always be planted in the immediate vicinity of gardens where bees are kept. The Black and White Poplars are also admirably adapted for nurse trees to young plantations and shrubberies, especially in the vicinity of towns. The Black Poplar is well adapted for planting in damp boggy soils, and it thrives exceedingly well upon the banks of rivers and lakes.

Reviving young trees.—When young trees have been out of the ground a few days, either in transit from the nursery or otherwise, and not properly cared for, the bark becomes shrunken, and although the roots may be in tolerably good condition, there is great danger that the tree may die after it is planted. This may be prevented by burying the trees wholly for a few days. To do this, dig a trench as wide as the tree is high, and about 8 inches deep at one end and 16 inches deep at the other, and long enough to hold all the trees to be buried, when laid in the trench, five or six trees on the top of one another. Place the trees in the trench with the roots at the deep end of it, laying them straight and packing them closely together, but do not pile them up above the level of the ground. Now cover the trees, tops, and roots with 12 inches to 15 inches of earth. If the ground be very dry, a few buckets of water should be slowly sprinkled over the soil after the trees are buried. In four or five days they must be taken out and transplanted immediately, being careful to cut back the tops. I have known trees thus buried when taken from the pit look as fresh as when dug at the nursery, and with proper care never knew one of them to die.—C. G.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

HENRY SHAW.

A TRUE PHILANTHROPIST IN THE GARDEN.

THIS man, who died at his home in St. Louis, Missouri, just as the eyelids of summer were closing down, deserves much more extended notice in the horticultural and gardening press than has been accorded as yet. Although nearly a month has now elapsed since his death, I cannot find even a line in any of the leading American periodicals of that class which regularly reach my desk. The daily press has very profusely chronicled his career and death, and pointed out valuable lessons drawn from his life, but the special mentors of the gardens and fields of his chosen land are silent. I send these lines to the land of his birth as a fragmentary tribute to his noble and unselfish life, the memory of which will go down through the ages of time as the sweet essence which always comes from good deeds.

Mr. Shaw was an Englishman by birth, but an American by adoption. He was born coeval with the present century and came to this country quite early in life, settling in St. Louis, where he has resided ever since. Little concerning his early life has found its way into print, Mr. Shaw being a very modest man, unpossessed of the resounding trumpet so commonly used by many Americans. He retired from active business pursuits at the age of forty, with an accumulation of this world's goods amounting it is said to £50,000. This was a goodly fortune in those days, it is true, but how many men would stop their insatiate race for gain at a time when they were best fitted for the contest? This, however, was exactly what Mr. Shaw did in 1840, when he began the best and noblest part of his life. Since that time we are told he added to his fortune by judicious investment only. He travelled abroad for about ten years, returning to St. Louis to spend the rest of his life. About this time his love of Nature began to assert itself. He took up the study of botany, and seemed to devote his entire time and ambition to the subject of plants and plant life. He founded what has since been known as the Missouri Botanical Garden, though for years it was called Shaw's Garden, a name it is never likely to outlive. It is doubtless among the finest, if not indeed the finest garden in America to-day, containing as it does every species of tree, flower, and plant that will grow in this country, with a most extensive collection of exotics. The arboretum and fruit gardens embrace all known varieties. Over a hundred gardeners are constantly employed in the beautiful park and grounds, and the place has long been the leading attraction of the city, bringing thousands to see it annually from far and near. In this garden Mr. Shaw has been spending the most of his large income for thirty years past, though not forgetting generous contributions to many benevolent objects. The garden also contains a large fire-proof building, which is devoted to a museum and a fine botanical library. Such has been the public reverence and esteem for this man's generous enterprise, that no police have been required to protect the place from thieves and marauders. Though kept as his private property during his life, it has always been open to visitors and freely devoted to their use. A massive register in the building shows how thor-

roughly the park was enjoyed by tourists. A large picture represents Mr. Shaw standing amid his flowers, where he could be seen any day in the year admiring their beauty more and studying their habits more closely as he grew older. He was among the first to plant whole beds of one species of flower. This beautiful garden he has now given to the city of St. Louis, and made ample provision for its maintenance and further improvement. His estate is valued at nearly £1,000,000, and the bulk of it is bequeathed to the city. Various charitable institutions also came in for a share. Tower Grove Park, a charming pleasure ground of 266 acres near the city, was also laid out and beautified by Mr. Shaw. This, too, was done for the city in which he lived, and when finished he gave it to the people.

Such is the mere recital of noble personal aspirations; consummated caprice, some have called it. If so, then it was a glorious caprice indeed which animated this man's life, and there is room in the world for the exercise of more like it.

The annals of philanthropy contain few examples of this nature. While Mr. Shaw devoted so much of his life and energy to the good of others, and accomplished so much in that direction in such a delightfully practical way, it is certain that he really enjoyed his own life and was fascinated in pursuing the course he had marked out for himself. Instances of this nature are so uncommon as to merit special record. Is it not another evidence of the wisdom in living close to Nature? She has sweet and noble influences, the aroma of which is nowhere else quite so fresh and potent as in the garden, field, and forest. It may, perhaps, be said of Mr. Shaw, and with truth, that he did not sacrifice his own pleasure and enjoyment. But even this is to his credit. He who can find a way to do good in this world without detracting from his own pleasure is wise. It is as much our duty to search for such methods of doing good as it is incumbent upon us to do good at all. Thus while living in the satisfaction that he was working for the welfare of his fellow-men he was daily enjoying the details of his own occupation in itself. The *New York Tribune* says, Mr. Shaw's life conveys some lessons which ought not to be lost upon this modern world of luxury and striving, and then the same paper very pertinently and properly adds:—

This was a career that abounded in gentle and humanising influences, and had the merit at the same time of originality. Mr. Shaw's life work was as distinctive as it was useful. What he gave to the community, which honours his memory so highly, was really a part of himself, the outgrowth of his tastes and studies, and it seems for that very reason something to be prized far more than the gift of a millionaire who endows a college or founds an orphan asylum merely by drawing a check. Mr. Shaw was certainly a philanthropist in the best sense of the word. He broadened and brightened the lives of thousands. He gave them unlimited opportunities for innocent pleasure and for instruction as well. He did all this without sensationalism, and must have derived from the work itself the highest intellectual satisfaction. He lived surrounded by the fruits of his labours, and conscious of the grateful appreciation of the community he had benefited to the ripe old age of eighty-nine, in the full possession of his faculties. It was a career to be envied by almost any man.

I wish I could send a photograph of his noble and kindly face that THE GARDEN might picture him to its readers. H. HENDRICKS.

Kingston, N. Y., U. S. A.

Aconitum Fischeri (californicum).—Here on deep and damp soil this Aconite, now in flower, is quite 5 feet high. It is not a striking plant, but,

on a closer view, the colour is soft and beautiful. A rather objectionable feature is that its leaves turn black quite early; in fact, before the stems are fully grown. A sharp frost which destroyed all the Dahlias and other tender things had not the least effect upon it.—T. SMITH.

PUBLIC GARDENS.

CHRYSANTHEMUMS IN THE PARKS.

It is a true indication of the popularity of a flower when it is grown in the London and country parks, and this is the case with the Chrysanthemum. In every park in London almost without exception this gay autumn flower is grown with a skill that is able to present it as perfectly as at the special exhibitions held throughout the length and breadth of the land. There are the greatest difficulties to fight against. In such a place as Southwark Park the atmosphere is as thick, dirty, and unwholesome for vegetable as for human life, yet here in a densely populated district and smoke-laden atmosphere Chrysanthemums are grown well, and give an opportunity to thousands of seeing the flower in its highest phase of beauty, in its delightful variety of expression. The house devoted to the Chrysanthemums is not so large as in some other parks, but quite sufficient for a large collection of the various types. The plants are well arranged, and show a vigour surprising under such conditions. There were good blooms open recently of such standard Anemone kinds as *Sœur Dorothee Souille*, the Japanese *Val d'Andorre*, *Fernand Feral*, and *Baronne de Prailly*, which carried several immense blooms of beautiful colour. The opening buds of other leading types show that the season will last well for another three weeks. Thousands in the most densely populated district of the metropolis are enabled to have a glimpse of the Chrysanthemum, not as a flower struggling for existence in a cracked pot on the window-sill or narrow forecourt garden, but as it is grown in its own native home and in the best gardens of the British Isles. That the public appreciate the efforts made to provide a feast of flowers when autumn frosts have spoilt the summer garden is shown by the thousands who each day, Sundays especially, visit the display. It would be unfair to compare such a park as Finsbury with Southwark. The two are placed differently. The one already described is in a dirty neighbourhood below high water mark and surrounded by houses; the other is placed on a breezy hill overlooking Hornsey. Finsbury Park has therefore natural advantages, an atmosphere that strengthens plant life, and makes the cultivation of such things as Chrysanthemums less difficult, though harder than in the pure air of the country. It is the finest exhibition in Finsbury Park we have seen for years, and that is saying much, as it has always been a public home of the great Japanese flower. The usual house is set apart for them, and the banks of plants are as fine as any of the groups we are accustomed to see at public exhibitions. The eye rests upon nothing but flowers, and a close examination reveals a choice variety of kinds, both new and old, each grown in the best possible way. Last week the old *L'Africaine*, a good crimson-coloured Japanese type, was as fine as we have seen it for years; and close by was *Gorgeous*, a Japanese variety that threatens to drive out the lighter coloured and now less useful *Peter the Great*. It is the most promising flower in its section of recent years. Of other Japanese varieties remarkably good blooms were those of *La Triomphante*, *Elaine*, *Comte de Germiny*, *M. Freeman*, *Joseph Mahood*, *Mlle. Lacroix*, the old purplish violet *Chinaman* or *Le Chinois*, *Avalanche*, the finest introduction of recent years; *Carew Underwood*, some blooms of it measuring 11 inches across; *Mons. Tarin*, and the rich orange-coloured *Flamme de Punch*. It would be impossible to enumerate all the varieties even worth mentioning, but such beautiful pompons as *Mlle. Elise Dordan*, the reflexed Japanese *Margot*, the golden yellow incurred *George Gleny*, and the Japanese *Anemone-flowered Fabian de Mediana*, sometimes

written Fabias de Maderanaz, were delightful, especially the last. This is a lovely flower when grown well, which it not often is, the long drooping guard florets forming a beautiful fringe. Several separate notes have appeared on varieties worth individual mention. If any evidence were wanted to show that there is a real love for flowers in the British public we may point to Battersea Park, where a large exhibition of the Chrysanthemum was recently opened for the first time. It is held in the large Palm house, which has been brightened up for the purpose. The plants are remarkably well grown for a first attempt, and exhibited so that they can be seen without discomfort, and legibly labelled. This is an important point. Unless the plants are correctly labelled, much of the interest of the exhibition is gone, and it certainly loses its educational value. Amateurs wishing to gather information with regard to the best kinds can now do so without asking any questions. The Japanese varieties are in good flower, but will be finer a week hence. Album plenum, the rich orange-red coloured *L'île des Plaisirs*, *Phœbus*, *Avalanche*, the old James Salter, Lady Selborne, *Gloire Lyonnaise*, *Henri Jacotot*, *Mme. C. Audiguer*, *M. Astorg*, *Fleur Parfait*, and *Mme. Chrétiën*, lilac-rose, with silvery reverse to the florets, are in true character, while the myriads of expanding buds on later varieties show the mass of bloom that may be expected in November.

There is a good show as usual in the Temple Gardens, and the varieties above mentioned are the most conspicuous. We hope it is only a rumour that this is the last year this exhibition will take place. It has become a time-honoured custom, and when Chrysanthemum culture was in its infancy, Samuel Broom created an interest in it by inaugurating the shows that have been held each season in the old Temple Gardens. Apart from interesting associations, it would be a misfortune to find next season the Temple Gardens gates closed against the Chrysanthemum, as the flower is now in its highest popularity, and the gardens are placed away from the busy streets, but sufficiently close to enable thousands of Londoners to have a glimpse of the most fashionable flower of the day. There might be some excuse for such a step if all interest in the flower was lost; but it is otherwise, and by the discontinuance of the Temple show, a bright and cheery spot in London in November will have gone.

Morrah Gardens, Penzance.—These gardens were recently opened by the Mayor of Penzance. They add much to the beauty of this southern watering-place.

Bandstand in Southwark Park.—An eyesore in this London park is a large bandstand, occupying a considerable space of ground facing the main entrance. In any position such a heavy, cumbersome structure is a disfigurement; more so placed in what should be one of the most beautiful spots in the park.

Ravenscourt Park is one of the prettiest parks in the suburbs of London, and the improvements so far made have not interfered with the beauty of the place, as things have been left much as they were in the time of Miss Scott, the late owner. It is 32 acres in extent and bordered on one side by a magnificent avenue of stately Elms, that leads up to the former residence, now the public library. Nowhere round London is there a grander avenue of Elms. The populous district of Hammersmith was sorely in need of this open space.

Gazania splendens is one of the showiest flowers used as an edging in the London parks, and it might be planted more in gardens. It is supposed to be a hybrid, but wherever its origin there is no question as to its brilliancy, the large bright orange flowers, like those of a magnified Marigold, resting on the silky leafage. It strikes readily from cuttings taken in July or August. Insert them in a warm frame to induce quick rooting. The best use to which it can be put is to edge large beds, as it quickly makes a broad band of trailing stems.

Mutilation of shrubs.—This is the season for shrub and tree-mutilation, so vigorously carried out in our London parks and gardens. The annual clipping and shortening of trees and shrubs is an evil that shows little signs of abatement, though the victims themselves are a standing reproof

against such unnatural treatment. In the Embankment Gardens especially the shears and knife do terrible work, just for the sake of keeping too thickly planted banks of shrubs in a certain circle of their own. The folly of too thick planting is not confined to the Embankment Gardens. Every park is alike; it is impossible for the plants to grow, stifled, confined and annually clipped. Conifers with other shrubs encroaching on every side struggle for existence in their unhappy surroundings, and yet such a barbarous practice can easily be avoided by planting differently, giving each plant, shrub or whatever it may be free scope to spread in its own natural way, so as to show off the beauty of its outline. There is need of a greater variety of shrubs, while now we have a repetition of such things as *Euonymus japonicus*, which will submit to pruning and other ill-treatment with apparent impunity. It was a relief to see the rich crimson-brown-tinted foliage of the *Liquidambar* in Finsbury Park. The eye could rest with pleasure on the changing leaves, that give a colour everyone heartily wishes we could see more of in London parks and gardens. There is another practice that should be stopped in the interests of plant life. It is the annual digging amongst the shrubs to make the place look clean for the winter. It requires but a moment's reflection to see the injury such a practice works; the tender fibres turned up with the uplifted soil tell a tale of destruction that eventually results in the straggling, unhealthy growth of our hardiest and most vigorous shrubs, yet this tree and shrub murder continues unchecked.

TREES AND SHRUBS.

THE SPANISH SAVIN.

(*JUNIPERUS SABINA TAMARISCIFOLIA*.)

AMONGST the whole range of Conifers, I question much whether for a beautiful pleasing foliage tint the Spanish Savin has an equal. One must see healthy, well-developed specimens, and then the silvery green which pervades the whole plant is strikingly distinct and beautiful.

Rather an interesting experiment was recently tried on a dry, sloping lawn, where no verdure could be got to do well, by planting it thickly with this Juniper. The plants were of small size when inserted in the ground, and placed at a distance of 2½ feet apart each way. They were pressed close to the ground at the time of planting, and during the growing season a heavy roller was passed over them once and sometimes twice a week. This had the desired effect of making the plants keep close to the ground, and as any bare patches were quickly filled up with young plants the whole surface presented in an unusually short space of time a perfect sheet of the richest verdure. The novel idea was certainly a great success, for no Grass could be got to grow for any length of time on that arid piece of lawn, and it is now one of the most charming bits of greenery that occur on that well-planted property. It seems almost surprising how quickly the Junipers took to the place, the young plants, which were certainly the best that could be procured, spreading about and interlacing their branch tips with each other and so forming a shrub carpet—an idea as novel as it was valuable.

For ornamental planting the Spanish Savin is far more valuable than the commonly cultivated kind, as it is of neater growth and the tint of the foliage is far brighter. Then it is of dwarfer growth, rarely rising more than 15 inches in height, and that, too, when left to its own free will. For rock planting or for covering a dry sloping bank it is undoubtedly the best Conifer we have, and can well hold its own with the double-flowered dwarf Gorse, which is so frequently used for the same purpose.

Some unusually wide-spreading plants of the common Savin growing on a well-kept Kentish lawn showed me how useful a Juniper, either this or the Spanish form, is for imparting a distinct tint of green to the surroundings. A silvery foliaged Indian Cedar, whose weeping branch-tips reached nearly to the ground, was surrounded with plants of the Spanish Savin, and certainly a more beautiful piece of Conifer arrangement I have not seen for some time, the bluish green of the Savins against the silvery-toned Cedar being most distinct and agreeable.

The variegated Savin (*J. sabina variegata*), with its chequered golden foliage, is no ornament to any lawn, unless, indeed, it be used under very unusual conditions. As we generally see it, we are reminded of plants in the smoke and filth of the metropolis.

There are many uses to which the Savins may be put, for the coarser growing typical plant makes a capital underwood in not too closely-planted woods, while for an edging to rides and drives it is about as valuable a subject as could well be chosen. Then the procumbent branches root freely enough, so that a dense, far-spreading mass is only brought out by patience, and as cuttings root with great freedom, a stock of young plants can soon be got up if desired. Close woodlands are, however, not the place for the Savins, for they like an open spot and a stirring blast. They are far from particular as to soil, but, like other plants, have their likes and dislikes, and certainly prefer light, rocky *débris*.

There are great differences in plants of the Savin, some being of a dull, unattractive hue, while others are remarkably bright. Others, again, have a straggling habit of growth, and require careful management to keep them in bounds; while the most desirable is that of neat, but not too stiff habit, and whose foliage is of the brightest green. Such a variety should be propagated to the exclusion of the less desirable kinds, and so a stock of the best and most ornamental for lawn and park planting got up. The Savins are all perfectly hardy, and fitted for planting on very exposed and wind-swept grounds.

A. D. WEBSTER.

THE LINDENS FOR CITY PLANTING.

THIS is the first warm summer we have had for many years. Grapes ripened before the month of August, and Rye was harvested before the end of June; and, in places where the rains have not failed, vegetation is extraordinarily rich and luxuriant. I have never seen the Ash and the Oak more brilliantly decked with green. But there is a reverse to the medal. In the streets and public squares of Berlin, the Lindens, one of their chief attractions, present the sombre spectacle of a premature autumn. Their foliage, browned and withered by the heat of the sun, is already falling. The tree which has proved itself best adapted for city cultivation—the tree so delightful for the richness of its verdure and its bloom in spring and early summer—seems no longer able to play its part in great centres of population. Yet is it wise to banish the Linden from our cities and substitute everywhere the Elm, as some suggest? Let us consider the question a little.

Many people—I may say most people—know of but one Linden. Among us the most common and most widely cultivated is *Tilia intermedia* (DC.), commonly known as the Dutch Linden, since the Holland nurseries supply it in abundance. It possesses every good quality of the genus, but is extremely susceptible to heat. Even artificial watering fails to preserve its greenness. The same is true of *Tilia platyphylla* (Scop.). Each of these species has a period of extreme beauty, lasting some months, which is followed by one of melan-

choly decadence. This again towards the autumn gives place to a partial re-leaving, never, however, as in the case of the Horse Chestnut, carried to the point of a second blossoming within the year.

For its ornamental qualities *T. ulmifolia*, so common in its wild state in the north of Germany, is superior to its congeners. It has not their fine flowers and foliage and the growth is inferior, but it resists heat and drought better. To be convinced of this I have only to look out of my window upon Leipzig Square, where stand the noblest Lindens of Berlin. The leaves of this species are of a bluish tint. Looking at a single specimen, almost lost among a crowd of its neighbours, I am forced to concede to it a superiority in some respects. This particular specimen has also lost some of its leaves, but it is not an eyesore like most of the others around it, which, besides suffering from drought, have been preyed upon for two years by voracious caterpillars (*Bombyx dispar*, *Daschyra pudibunda*, and a third species whose name I do not know). I remember having noticed similar ravages among the trees in 1883, when, as early as the beginning of July, a long drought caused the blossoms of the Dutch Linden to fall in such quantities that they were swept away in heaps. The proper remedy for this trouble is not found in the substitution of another tree for the Linden, but in the employment in future plantations of a Linden different from the species now generally planted.

The species I recommend is the Crimean Linden (*T. dasystyla* = *T. euchlora*, K. Koch). Little known as a wild tree, it began to find its way into Germany about twenty years ago. It grows rapidly. Its top while young assumes a broad pyramidal form. The stout texture of its leaves and their glossy surface seem to have predestined it for intramural plantations. The specimens which have come under my notice have remained unharmed, while other Lindens have suffered severely. It would be advisable to make a trial of the Crimean Linden in America, where its advantages would probably be even more apparent than they are here.

The beauty of all Lindens is great and incontestable. In the case of the Crimean Linden, this beauty is heightened by the lustre of the leaves, which resemble those of the Beech. It also has the advantage of blooming as late as the last week in July. The tree must attain a considerable age before it blooms, which it did in Berlin for the first time in 1873. My trees at Scharfenberg are fruiting well this year, and we shall have an abundance of seed.

We have here also some specimens of a variety of *Tilia platyphylla*, which is remarkable for the yellow colour of its young branches and buds, a peculiarity which disappears in summer, but is very noticeable in winter and early spring. This is the variety known as *aurea*. I mention it here because I have learned something as to its origin. It was discovered before 1829 in a forest at Alsace, near the outskirts of Bollwiller, by M. Baumann, who also first distributed it.—C. BOLLE, in *Garden and Forest*.

Prunus Pissardi.—I cannot help contrasting the bright crimson hue of the leaves of *Prunus Pissardi* with those of the Purple Beech, now dying away to that kind of lifeless bronzy hue peculiar to it in the autumn. The leaves of the former hold to their colour all through the season, and remain on the tree till the middle of November. Then it appears to be perfectly hardy; it flowers in spring with great profusion; it will force well, and can be had in flower at Christmas; and it will come on into bloom in a cold house in early spring. It is a plant I strongly recommend for growing in pots to decorate the forecourt garden during summer, and then to bloom in an ordinary greenhouse in spring. My own plant, though unassisted in any way by fire-heat during the winter, bloomed very freely indeed in the spring, and was an object of great beauty.—R. D.

Road scrapings.—These are used now pretty generally, hence their importance. Roads are made of very different material in different places, and the gardener knows very well that some plants are

injured, and even killed, by some soils. The quantity of iron and lime in the minerals employed on roads in many districts would render the scrapings quite unfit for hardy Heaths, Rhododendrons, and other plants that could be named, but we rarely see any advice given or precautions taken in their use. All road scrapings are not alike, and it is necessary to exercise a little care as to how and what purpose they shall be turned in the garden. I have often observed that road scrapings have been used in the place of sand for potting alpine. What wonder, then, that some things fail when the material has come from a limestone or ironstone road. Imagine Gentians, Androsaces, some Primulas, Sedums, Podophyllums, Cypripediums, &c., being potted in such stuff! They can only die. Within a radius of four miles of Leeds we have roads made of at least four distinct minerals from a gardener's point of view. I refer only to the macadamised roads, and only the scrapings from one class (the less used ones, made of sandstone) could be employed safely and indiscriminately in flower culture. I have watched the results and tried experiments for some years in this direction, and I am persuaded that road scrapings, though most useful, are only reliably so when used with judgment. Just one word on a kindred matter. Street sweepings from large towns, where the streets are paved and run in with pitch and tar, are not an unmixt good. Both in very warm and frosty weather the pitch and tar expand and come off in, relatively speaking, large quantities, and then the sweepings are not fit for anything. They may not be amiss for farm crops, but I would not use them at all amongst flower-beds.—J. WOOD.

NOTES OF THE WEEK.

Strawberries in the open.—I enclose you a Strawberry picked to-day from a bed of *Grosse Sucrée*. My boys had eaten several when they brought me the enclosed.—JAMES WADDELL, *Shenley House, Bletchley*.

* * A fully developed fruit of this favourite sort.—Ed.

Sophronitis grandiflora coccinea.—Among the numerous plants of the showy *S. grandiflora* in bloom with Mr. Bull is a form named *coccinea*. It has larger flowers than the type, and of a decided scarlet, very bright and telling.

Lycaste Skinneri alba.—We have few white-flowered Orchids of such purity and beauty as this. Several plants of it are in bloom with Mr. Bull, all good forms, with large, massive, pure white flowers, except for a little yellow at the back of the lip. It is still uncommon.

Aster hybridus nanus.—I fully expect the time will come when we shall have a race of dwarf Starworts. The pretty *A. hybridus nanus* is now a charming mass of rosy colour, and only 6 inches high. *A. diffusus* var. *pendulus* promises to be a very useful late variety, and is now (Oct. 19) not showing colour, though crowded with buds.—T. SMITH, *Newry*.

Erigeron speciosus superbus.—This is a beautiful hardy plant for autumn flowering; indeed it blooms more or less the whole of the summer. It was, with the Michaelmas Daisies, in full beauty in Messrs. Barr & Son's ground at Footing last week. The flowers are much larger than those of the type and purple, the centre yellow. It will grow almost anywhere.

Orchids and the fog.—The increase of fogs will soon render Orchid growing in the near vicinity of London an impossibility. The destruction to the flowers annually is enormous, and in the case of seedling Orchids about to bloom for the first time the plants have to be taken to the country to expand the buds safely. This has been done in the winter by Messrs. J. Veitch and Sons, who, however, recently removed their seedling Orchids to Slough, where they will be safe from the harmful influences of London smoke.

The disaster on the Clyde.—An earnest appeal to Orchid lovers and growers is being made in aid of the widows and orphans of Mr. R. C. Fraser, gardener to Mr. R. B. White, Arddarroch; and Mr. W. Hall, the well-known Orchid commission agent, of Upper Tulse Hill Road, Brixton, who met with their deaths by drowning in the Clyde, on September 28, under circumstances which have already been made

known. It has been felt that the circumstances called for something more than mere sympathy, and this feeling has taken tangible form, in the formation of a committee to collect subscriptions in aid of a fund for the benefit of both families. To this fund Mr. White has generously contributed £50, independent of what he feels he ought to do for the families of the three men drowned, and it is hoped that all to whom this appeal is made will respond liberally. About £140 has been already collected, Baron Schroeder subscribing £20, Messrs. J. Veitch and Sons 15 guineas, and a like amount from Messrs. Protheroe and Morris.

Oncidium ornithorhynchum album is a charming creamy white form of this old Orchid, and was recently in flower with Mr. B. S. Williams in his Holloway Nursery. Except for colour, it is like the type, bearing the same profusion of graceful racemes of flowers, which have a strong aromatic fragrance.

Dendrobium formosum giganteum.—This is a beautiful Orchid when well grown, but it unfortunately goes back after two or three years' cultivation, instead of becoming more vigorous. A fine specimen, carrying thirty-one of the large white flowers, is in the Manor House Gardens, Gunnersbury, where Mr. Manning, the gardener, is getting together a good collection of Orchids.

Long names.—Here is a sample of long names for Chrysanthemums: *Souvenir de Mme. Blandinières*, *Mons. Charles Lebrosq*, *Anatole Cordonnier*, and *M. Pankoncke*. These are all new and promising varieties, but their unwieldy titles will crush them out of cultivation. Many of our best flowers would be more grown but for the length of name tacked to them when distributed. One or at most two simple names are quite sufficient.

Hymenocallis macrostephana.—A plant of this little-seen *Amaryllid* was shown by Mr. Wythes, Syon House Gardens, Isleworth, at the Royal Horticultural Society's meeting on Tuesday. Mr. Wythes grows it largely, as the large, richly scented, white flowers last well when cut, and are borne freely on the plant. It is grown in an intermediate temperature, and even when out of bloom is ornamental, by reason of the abundance of large Eucharis-like leaves.

United Horticultural Benefit Society.—The third annual dinner of this society was held at the Cannon Street Hotel on Wednesday, when about 150 members and friends were present. The chair was taken by Mr. N. Sherwood, who wished the society prosperity and strongly advised the formation of a convalescent fund in addition to the benefit and sick funds. He stated his willingness to contribute twenty-five guineas to help forward this object. Baron Schroeder became a honorary member, and altogether eighteen hon. members were enrolled, evidence of a great awakening in a society that has until now kept itself far too much in the background.

Orchids at Mr. Bull's.—There is a large display of Orchids for the time of year in Mr. Bull's Chelsea Nursery, comprising many good forms of *Odontoglossum Pescatorei* and the charming *O. Alexandræ*. Some large-flowered varieties of *Vanda cærulea* were in full beauty, but pale in colour, almost white, due doubtless to the murky atmosphere and an absence of sun. Other species blooming well were the brilliant little *Sophronitis grandiflora*, *Pleiones* in rich variety, *Cattleya aurea*, *C. maxima*, *Lycaste Skinneri alba*, *Oncidium ornithorhynchum*, *Odontoglossum grande*, *Oncidium tigrinum*, *Forbesi*, and the rich yellow *varicosum* Rogersi, besides a variety of other October-flowering species.

The blue Chrysanthemum.—I have been much interested by Mr. C. Harman Payne's notes on a possible blue Chrysanthemum. Judging only from my own observation of the general range of colour in different families of flowers, I should certainly be inclined to suppose that a blue, if it ever existed, or if it exists, would not be of the indicum or sinense group. But I am somewhat shaken in this opinion by the fact that I possess a very valuable little *koro* of Satsuma ware on which the blue Chrysanthemum of a true indicum type figures very largely. Now the Japanese artists of 100 or 150 years back did not (as far as I have noticed, and I possess a large and valuable collection of old Satsuma) draw on their imagination, as, alas! Europeans have done, for the colouring of their flowers, birds, &c. All seem to have been true to Nature, if not absolutely exact. I cannot imagine the old Jap putting in three distinctly blue Chrysanthem-

mums unless he had actually seen such, though of course he may have done so. I shall hope to exhibit the vase in question at the Royal Horticultural Society's Chrysanthemum conference at Chiswick on Nov. 5 and 6, together with an old Chrysanthemum bowl of the finest Satsuma, and even if the evidence of the vase fails to convert Mr. Harman Payne, I am sure of one thing, that if he be a lover of old Satsuma, he will say the vase itself was well worth the looking at.—W. WILKS, *Shirley Vicarage*.

Peach "Exquisite."—The information you have given to your readers to guide them in the selection and cultivation of the best Peaches is both interesting and instructive, but have not your correspondents confined their observations to the best kinds of fruit grown in their own collections? In only one instance have I seen any reference made to a most excellent mid-September Peach, "Exquisite." I can bear testimony to its being a noble Peach, of delicious flavour and of immense size, often 10½ inches round, and weighing 9½ ozs. or more. The flesh is yellow, rich and melting. I seldom see it named in the fruit catalogues. Its cultivation deserves more attention than it receives.—W. NEWTON, *Newark*.

Late Peaches.—We have gathered the last of our Peaches to-day (October 22). The crop, all outdoors, has, on the whole, been very fair and the fruit of good flavour. I have weighed four of this last gathering (Walburton Admirable) and find them 1½ lbs. good (6 ozs. each). I enclose a sample, but fear the flavour may not be so good now, as we have had so little sun lately and so much cold rain. Still the fruit is presentable, considering its lateness. The trees are looking very well, free from blight and the wood well ripened. The varieties that do best with us are Royal George, Noblesse, Violette Hâtive, Dr. Hogg, and Grosse Mignonne; of the last mentioned we have had fruit over 8 ozs. weight. We are 600 feet above the sea, and on the borders of Exmoor, and the climate very different from that of South Devon.—R. M., *Hams-lade, North Devon*.

The Fruiterers' Company.—The Master, Wardens, and Court of the Fruiterers' Company recently waited on the Lord Mayor at the Mansion House, and admitted him to the freedom and Livery of their guild and to membership of their Court in recognition of the laudable efforts he had initiated for the improvement of fruit culture throughout the country. The Master (Mr. R. S. Mason) mentioned that in the long history of the guild there was no previous instance of a person being admitted in one day to the freedom, Livery, and Court of the Company, and they intended the Lord Mayor's admission as a personal compliment to him in grateful appreciation of his great interest in fruit culture. The Lord Mayor thanked the Company for the honour they had paid him, and said it was his firm belief that fruit farming and the cultivation of orchards might be profitably revived throughout the country, and that instead of importing so much of our fruit from foreign countries it might be grown here, with profit to the farmer and with advantage to the public. At all events, he would spare no effort, both now and when he left office, in throwing his heart into making the movement a success.

An old Pear tree.—The late storm, Oct. 7, has finally crushed a very old Pear tree which has flourished in and the produce of which paid the rent of an old orchard and market garden which has been in the possession of one family for three generations. The orchard and garden are only two acres in extent, just outside the north boundary wall of the Phoenix Park. The tree referred to is said to be 300 years old. It is the old Catherine variety. The stem, not yet cut down although the top is clean broken off, measures 6 feet in girth at 2 feet up. For many years an average of £15 was realised for the annual crop of this tree, and in the old days of Donnybrook Fair the large sum of £22 has been taken for one year's fruit. Being somewhat inclined to doubt the accuracy of the age stated, I have looked up the old authorities at hand as to the origin of the variety, and find that the Catherine Pear must have been a popular fruit at

the time of Parkinson, 1628. It is mentioned in Mawe's "Universal Gardener and Botanist" as a sort of second quality. Mawe and Abercrombie in their "Gardener's Daily Assistant" do not include it in their list of select sorts, 1794. In Martin's "Miller's Dictionary" it is spoken of as "an old sort still grown for market use because it comes in early, but it is a poor fruit." Forsyth enumerates seventy-five varieties, but evidently does not think the Catherine worth including in his list, although it must have been known to him. He does name "King's Catherine" in a supplementary list which may be a synonym. On the whole, I think it may be safely taken as a fact that this ancient tree was 300 years old. A tree now standing in the same orchard, a graft from the old parent, is evidently 100 years old. I may mention that the present proprietor is fifty years of age; his father, the former occupant, died at about eighty years of age, and his grandfather, who also rented the orchard, died at the age of ninety years. In this orchard there are numerous old and prolific trees of old-fashioned varieties of Apples, which annually give a good account of themselves in the Dublin market, and the present occupant is increasing the numbers of these by grafting and getting them on their own roots, as he finds modern varieties, such as Ecklinville and Warner's King, do not thrive like the old sorts and are very subject to canker.—W. D., *Phoenix Park*.

Siberian Dogwood (*Cornus sibirica*).—This is the season of the year when the garden is made tidy for the winter. The leafless stems of herbaceous plants are cleared off without one thought of the beauty they give by the rich brown or crimson colours of the wood, and in the case of this Dogwood it is just at this season when the ruddy glow of its crimson stems gives life and colour to the garden scenery. There is a bed of it near the principal entrance to the Royal Gardens, Kew. At a distance it looks like a bed of some scarlet Lobelia, but a closer view reveals the leafless stems intensely brilliant in their winter dress. The Siberian Dogwood is worth planting for winter effect alone, like the Cardinal Willow, about which there was much discussion in the pages of THE GARDEN at the beginning of this year.

October Roses.—I was looking at the Roses to-day (October 19), and admiring the quantity of bloom still upon the plants. The buds upon Anna Ollivier are as plentiful now as in June, but many of them can never open, as they will not be far enough advanced by the time severe frost is upon us. What would such a Rose as this do in a warmer climate? I am inclined to think it would scarcely rest at all. Mme. Lambard is always good in autumn, and there are now open blooms of matchless form and purity of colour, and even Perle des Jardins, full and double as it is, has managed to open fine flowers in spite of the drenching rains. Upon Niphetos hang frail, delicate blossoms, and their drooping habit now favours the opening of the flowers, as they throw off the rain. Souvenir d'un Ami has quite a heavy crop of round rosy buds which will keep opening for another week or two, and, unless the weather is very sharp, flowers of Gloire de Dijon may be had until Christmas. Two days ago I cut a bloom of Catherine Mermet that would have figured well in an exhibition box. Grace Darling and Viscountess Folkestone have quite heavy crops of buds which surely, though perhaps slowly, are opening into fine flowers. To praise Souvenir de la Malmaison is almost superfluous, as it is always good and especially so in autumn, but it is wrong to suppose, as some do, that this is the only good autumn Rose we have, for other kinds grown in quantity will prove valuable in late autumn. The monthly Roses are as yet full of buds and flowers. Among this section there is now great variety and some very fine kinds, yet it can hardly be denied that monthly Roses are greatly neglected in gardens. One that is good at present is Lemesle. The habit of growth is sturdy and vigorous, the shoots are clothed with glossy leaves, and the flowers, which are borne erect upon stout stalks, are of fine form and substance. In colour when first opening they are

somewhat like those of the old pink monthly, but there is a dash of warm rose in the flower which increases and gradually runs through the entire bloom till it assumes quite a novel and charming hue.—A. H.

Trailing Hyssop (*Hyssopus officinalis* var. *decumbens*) is a great improvement on the old garden form, and is useful alike in the rockery or flower border. It grows very rapidly, is of a trailing or decumbent habit, roots freely as it creeps along, and attaches itself to the rough stones like Ivy. It is very hardy and a most useful plant, seeing it is in full flower now. The leaves are dark green like those of the ordinary form, the flowers larger, white, and produced in the greatest abundance. It may be increased by division, or simply by lifting pieces of the stems. It thrives well in shady places, and should prove useful for out-of-the-way spots where little else will grow.

The American Cranberry (*Vaccinium macrocarpon*).—The fruit of this in large jars was one of the prominent exhibits in the Canadian section of the late American exhibition. Under ordinary cultivation, as we have it, the berries are small, though brightly coloured, but under the rich treatment given it by cultivators in Canada and elsewhere, it has increased from a small to a large, handsome fruit, acid to the taste, and largely used for sauce. It makes a charming rockery plant, forming quite a picturesque feature with its long, twiggy, straggling stems, covered with small egg-shaped, blunt, and somewhat glaucous leaves. In the autumn, when the berries begin to colour, it is highly ornamental, and continues so right through the winter months. It does well in peaty soil, in bogs, &c., but is always most picturesque and shows to best advantage creeping over boulders, &c., on the rockery.

Odontoglossum grande and Vanda cærulea.—Seeing very frequent notices of late in your paper of Orchids grown by Mr. Measures and Mr. Tautz, I venture to send you, per parcels post, a spike of *Odontoglossum grande* with seven flowers upon it, and also a bloom of a plant of *Vanda cærulea*. I do not think that either of the above named gentlemen will have a better-flowered spike of the former, or a much better variety of the latter named plant. The bloom of the *Vanda* is one of five produced on one raceme of a small plant with five pairs of leaves. I have another plant of *Odontoglossum grande* with thirteen bulbs which has produced two spikes, each of which had six flowers, so that it would seem not quite so uncommon, as the writer of the article in your last week's issue would suppose, to have as many as six flowers on a spike, and as he has heard of seven, he will probably now be convinced that it is quite possible for that number to be produced.—W. C. ATKINSON, *St. Ann's Road, Aigburth, Liverpool*.

* * A very fine raceme of *O. grande* with seven flowers, and an excellent form of *Vanda cærulea*, larger and much deeper in colour than usual, the sepals and petals beautifully veined with blue on a pale ground.—Ed.

Cattleya Dominiana.—Flowers of this variety come to hand from Mr. Cypher, gardener to Mrs. Studd, the Royal Crescent, Bath. I am particularly pleased to see flowers of this again, not having seen any for some time. Although not a strikingly remarkable flower, it is always welcome for its associations. It is one of the earliest seedlings raised by Mr. Dominy in the Exeter nurseries of the Messrs. Veitch, being a cross between *C. maxima* and *C. intermedia*. It was, I believe, one of the very first hybrid Orchids I ever saw, and certainly the first hybrid *Cattleya*. The sepals and petals are soft rosy lilac, the petals broadest and waved at the margins, the lip three-lobed side lobes large, front lobe beautifully frilled round the edge, purplish lilac in front with deeper veins. It is not a very showy flower, but valuable for the season at which it blooms, and I trust it will be a long time before it is cast aside by growers. It is, moreover, a plant which thrives under somewhat cooler treatment than the majority of the genus. There are several varieties of this plant, but the one before me is the original one.—W.

EYDON HALL.

EYDON HALL, built about 120 years ago, is the property of Viscount Valentia. Col. Cartwright, who has occupied it for the last twenty-five years, takes a great interest in the place. It is picturesquely situated, and commands a beautiful prospect of the adjacent country. It is situated 10 miles from each of the following towns, Banbury, Brackley, Daventry, and Towcester, and is built of native stone, except the four columns seen in the illustration, which are of Bath stone. It is a very substantial building, containing commodious rooms throughout. It is situated only a few hundred yards from the high road (on the west side), from which it is entirely hidden by well-wooded plantations, except at one point, where a pretty view of it is to be had. The hall is approached by two entrances, one from the village (Eydon) on the north-east

so to obviate this a bed was formed, the soil taken out and replaced with peat which was obtained from Hampshire. In this some of Mr. Waterer's choice varieties of Rhododendrons were planted, and they grow and flower splendidly. Among the Rhododendrons some *Lilium auratum* were planted, and they have been undisturbed for several years. The bulbs grow very strongly and flower profusely every year.

There are several charming vistas, or gigantic arches, formed by lofty trees. The principal ones are from the steps, shown in the illustration, another at right angles to this, which has a charming effect when the sun is setting. Laurels are quite a feature here, there being about 10 acres of them as undergrowth in the plantations; they grow most luxuriantly, but are kept in excellent order by pruning them every year; this is done with a knife which gives

house are two fine specimens of *Magnolia conspicua*, which flower freely every spring. The flower-beds are planted in autumn with spring-blooming plants and bulbs. For summer bedding tuberous-rooted Begonias have been extensively used this year, and they have done splendidly, being a perfect blaze of bloom all the summer, and are now (October 3) little the worse. Pelargoniums compare very unfavourably with these, as the frequent heavy showers we have had have spoilt their flowers, while those of the Begonias seemed brighter and fresher after every shower. The kitchen and fruit gardens are a short distance from the hall on the north-west side, and are surrounded by a brick wall. The principal walks are turf, which have a nice appearance when neatly kept. In the fruit houses, Grapes, Peaches, and Nectarines are well done. For greenhouse decoration tuberous-rooted Begonias



Eydon Hall, Byfield, Northampton. Engraved for THE GARDEN from a photograph sent by Miss Dryden.

side, the other from the highway on the west side. The park, though not an extensive one, is thickly studded with fine Oak, Elm, Beech, and Ash trees. The lawn is on the south side of the mansion, and is judiciously dotted with trees, shrubs, and flower-beds placed in suitable positions. Conifers are not numerous, but mention might be made of a very fine *Cedrus Libani* nearly 70 feet high, a *Cedrus Deodara* 60 feet, a *Cryptomeria japonica* 60 feet, a *Sequoia sempervirens* 65 feet, and the *Araucaria imbricata*, seen in the illustration, which is 45 feet. There is also a *Wellingtonia gigantea* over 60 feet, but this has, unfortunately, lost its lower branches through being planted in too close proximity to other large-growing trees. There are also very good specimen trees of variegated Elm, Horse Chestnut, and Oak. Rhododendrons will not thrive in the soil here,

them a more natural appearance than if they were clipped.

The flower garden proper is on the south-east side of the hall, and is composed of beds of geometrical design, many of which have an edging of stone; others are cut out in the turf. A portion of this garden is sunk some 4 feet lower than the other part, and is laid out in the Italian style, the beds being planted with Roses and hardy perennials in variety too numerous to mention here. On the north side of this garden is a large orangery—a portion of which is shown in the illustration—which contains some fine Orange and Citron trees, also some large Camellias. One plant of *C. alba plena*, 11 feet by 8 feet, is in perfect health, and produces hundreds of its snow-white flowers every year; while a specimen of *C. imbricata* measures 13 feet by 7 feet. On the outside front of this

lias are largely and well grown. Noticeable is a splendid lot of double Primulas for winter blooming, amongst which Marchioness of Exeter is an especial favourite. Chrysanthemums are also largely grown. In the plant stoves nice plants of the usual kinds for table and house decoration were seen. Mr. Hughes—who has had charge of these gardens for the last thirteen years—has gained considerable reputation as a Potato grower and raiser. Mr. Hughes has a batch of seedling Potatoes, raised in 1887, possessing excellent table and tremendous cropping qualities, twelve roots having produced a bushel of fine Potatoes, which is equal to 5 bushels to the row of 22 yards long; these were raised three years ago.

Balls of vegetable material.—A friend has forwarded me the accompanying balls of vegetable

matter which he got up with his landing net from the bottom of a shallow part of a lake in South Uist, Scotland. He says that nobody has ever been able to say what they are, but I do not know whether there can be any real difficulty in determining their character. If I were to make a rough guess, I should say that they may, perhaps, be formed of some aquatic vegetable growth of the kind which is called "tangle," pieces of which became detached, and were formed by the rolling action of currents into their present shape. Two or three miles to the east of Marseilles the shore is literally covered with brown balls, originating, I believe, in the manner just described. But it is thirty years or more since I was at the spot, and I do not at this moment recollect what was the material of which the balls in question were constituted. Perhaps you may be able to pronounce upon those which I transmit to you.—T. W. ERLE.

* * Mr. Erle's explanation is the correct one; similar round balls have often been described. Sometimes they are formed in country roads after violent and prolonged storms and floods of rain. In clay districts, spherical balls of clay are often formed by the sea and by rivers, and more rarely by storms of rain inland. Spherical balls of rolled London clay and Grass have been described in *Nature*, by Mr. Worthington Smith, from the ancient river sands of the Thames, now four miles north of the river.—W. G. SMITH.

CHRYSANTHEMUMS.

E. MOLYNEUX.

SEASONABLE NOTES.

Now that all the plants are under cover and after having been placed where they are to flower, a little time spent in giving the last touch to the arrangement of the flower-buds, so that they may be made secure from accident, will be necessary. The length of the flowering season is so short after all the time required to cultivate the plants, that it behoves one to make the most of whatever show of blooms there is. The tallest plants being arranged at the back and the dwarfest in front, they do not interfere with each other, and in this manner all the blooms can be seen at a glance, and they can also be easily examined individually, while by spreading out the branches as much as space will admit each bud gets its full share of light and air. Those varieties which have weak peduncles will need support, or the increasing weight of the buds and flowers afterwards will often break the peduncles 2 inches or 3 inches below the bud. This is annoying, and might have been prevented by a little forethought. Small stakes cut from builders' laths into lengths of about 6 inches or 8 inches according to the length of the peduncle are the most suitable, as they are more easily fastened to the plant than round ones. About 3 inches should be allowed below the junction, so that the support may be tied to the stem among the leaves. The point of the stake should fit underneath the bud, and with a single tie, not too tight to prevent the stalk from swelling, the bloom is made secure and any accident avoided in this way. Some varieties, such as Novelty, Princess Beatrice, Mrs. W. Shipman, are more liable to suffer in this way than others, and even Princess of Wales will sometimes snap off just above the leaves. All dead and decaying leaves should be picked off as fast as they appear. Where some of the varieties were allowed to remain outdoors after the buds commenced to show colour and even to unfold their petals, a few of the flowers may now show signs of damping. These should be removed at once, as they are liable to cause those nearest to damp also. Any watering required should be done in the morning, so that the paths and floors may become quite dry before the house is partly closed at night. It is seldom that the plants require water more than once a day and in many cases not even this. The pots being placed closely together, air does not pass among them freely, neither does the sun shine on them. During favourable weather air should be liberally admitted both night and day while the blooms are developing. In

damp or foggy weather less air may be admitted, and the hot-water pipes should be warmed during the day when air can be freely given to prevent the moisture becoming stagnant.

Earwigs will now have to be closely watched, or they will quickly cause irreparable damage to the petals, especially of the incurved blooms. Earwigs appear to eat the surface of the petals of these varieties more than they do those of the Japanese kinds. The best traps are still Broad Bean stems, cut into lengths of from 1 foot to 2 feet. These thrust in amongst the foliage and laid on the tops of the pots afford ready hiding places to the earwigs, and from which they can be easily dislodged. After dark they should be searched for with a light, when they may be caught feeding on the florets of the blooms. They must be caught quickly, as upon the least movement of the plant they will secrete themselves among the petals of the flower, and are not at all easy to discover again. When the plants are standing in vineries or Peach houses, where the borders have been mulched with manure during the summer, this, when it becomes dry, affords a capital harbour for woodlice, for which hand-picking is the only remedy that I know of. This year, caterpillars, about 1 inch long and light brown in colour, are troublesome. They coil themselves up among the petals of the flowers and appear to eat their way out, and thus disfigure the bloom. Upon the slightest signs of damaged petals lying about, search must be made for these intruders. Slugs often disfigure the flowers by crawling over the petals, and in some cases they eat them. Traces of slugs may be seen during the daytime, and if searched for the next night they are almost sure to be caught, as they generally visit this particular spot on two successive nights. In stubborn cases of their non-appearance, the second night lay on the top of the pot some bran, which will serve as a bait, when they can be caught after dark.

Many varieties are expanding their flowers this year much earlier than is usual or necessary, owing possibly to the spell of hot weather in the summer and again during the early part of September. Many cultivators are concerned as to how such early blooms can be retarded or kept when developed until the time arrives for their being used at the various exhibitions which they were grown for. Growers of large collections of plants always have this difficulty to contend with. They generally arrange all the early varieties or plants that usually flower in November in one house by themselves, where the plants can be kept cool. Where a small number of plants is cultivated, and perhaps only one house exists to store them in, the plan previously described cannot be followed, because sun is necessary to those plants which are either not just right as to date or too late, and need pushing on to unfold their blooms in time. Instead then of shading the roof entirely, the blooms which are early must be shaded separately by laying on them sheets of soft tissue paper, which will serve the purpose needed and will not injure them. This method will take up more time perhaps, but those persons who wish to excel in Chrysanthemum culture must not mind that.

Some plants may be in a backward state owing to the late formation of their buds, and these should be placed in one house by themselves. If a special house cannot be had, place the plants at one end of a house where they can be kept warmer. By manipulating the ventilators so as to reduce the quantity of air at that end of the house, the late plants may be forwarded a good deal, and with the assistance of sulphate of ammonia applied to the roots freely a quicker growth is assured. Much activity will now have to be displayed where many plants are grown for specimens, bushes, or dwarf cut-down plants for grouping, in the matter of the final staking and tying out of the shoots to obtain and preserve the desired form the plants shall have when in bloom. Those for specimens of circular form, with slightly rounded heads, so objectionable to some persons on account of their stiff appearance, but admired by many as examples of cultural skill, will shortly need their final tying and staking of the branches. Thin stakes made

from split bamboo canes make the best supports, and if painted of a colour resembling the branches and leaves they will be the least obtrusive. Secure the branches carefully to the stakes, leaving space for the peduncles to swell, as they thicken considerably at this stage. The plants should be arranged as near the glass as possible, so that the growths should not be drawn up weakly. Remove all flower-buds but one on each shoot; this should be the centre one in all cases, as it always produces the finest flowers. Allow plenty of space between each plant to preserve the foliage as fresh as possible. Bush plants will need staking finally now that the buds are formed. Place a stake to each main stem of the taller growing varieties; those of a naturally dwarf kind will do if one stake be placed in the centre of the plant, and all the branches tied separately, yet loosely to it. Where a mass of flowers is preferred to a fewer larger ones there should be no disbudding, and the stems will be clothed with flowers in abundance, but where a few plants are required with larger blooms, remove at once all buds except the centre one. For supporting the flowers and branches of the dwarf cut-down plants, thin wire stakes are better than laths or Hazel rods, as they are less prominent, and for forming exhibition groups this is what is wanted.

Side or lateral growths are still being freely made on some plants, those of the Queen type being the most troublesome in this respect. Remove these growths as fast as they are seen, as they weaken the plants, and only tend to interfere with the foliage and prevent the admission of light and air.

Chrysanthemum hedges.—I quite agree with "E. M.'s" remarks respecting the adaptability of Mme. Desgrange as a hedge plant. I have here a long border 60 yards in length, facing a portion of the fruit houses, planted with Mme. Desgrange and G. Wermig as a back line, with Pentstemons, Asters, and various annuals in front. The situation being a southern one and well sheltered, I usually cut Chrysanthemums from early in August onwards until sharp frosts occur. The effect during the early portion of September was grand. The plants were mostly struck from cuttings in December, 1887, planted out in April, and have remained there since, and, beyond getting a good dressing of farm-yard manure annually, receive no other than ordinary attention. They are planted from 2 feet to 3 feet apart, and each plant was carrying something like 300 flowers. Their usefulness at this season of the year no one will dispute, flowering as they do at the time of harvest festivals, &c., when large quantities of flowers are required.—J. J. CRAVEN, *Allerton Priory, Liverpool*.

Chrysanthemum Mme. C. Desgrange.—Mr. W. Piercy, in his reference to the above in his paper read before the National Chrysanthemum Society and published in *THE GARDEN*, Oct. 5 (p. 320), appears to have some doubts as to its origin, though pointing to Mr. Robert Parker as its discoverer in the summer of 1879. This variety was, I think, growing in the Exotic Nurseries in 1873-74. It is rather odd, too, that if this plant was only discovered in 1879 it should appear in Mr. Parker's spring catalogue of 1880, which was published in February of that year. While several varieties of early flowering Chrysanthemums appear among the specialities of that season, the variety Mme. C. Desgrange is only accorded a place among the general collection, without a word about it, not even its colour. I think its introduction must have been years before this, whether the year 1879 has to be associated with its re-introduction or not. I have a faint recollection that my late father had this very plant twenty years ago trained to a wooden fence with other summer-flowering varieties. It existed in the nursery of Mr. Felton, of Birmingham, prior to 1879, and was believed to have been brought by that gentleman from the Continent. When these nurseries were taken over by Hans Niemand, and under the management of Mr. W. Spinks, a quantity of unnamed Chrysanthemums was found in a neglected state, and Mr. Spinks knowing that it was a custom with Mr. Felton to visit Continental nurseries and bring home really

good things, cherished the Chrysanthemums and flowered them, Mme. C. Desgrange being among the lot. At that time, however, Mr. Spinks having no name for his plant called it "Maize;" it proved, however, to be no other than Mme. C. Desgrange. It would be interesting to know from what source the Welsh lady referred to by Mr. Piercy obtained it, or how long she had been possessed of it, and whether she grew it under its present name. Seeing that it is undoubtedly the parent of a most valuable section of early flowering Chrysanthemums, it would be well if authentic information respecting its origin was forthcoming.—J.

** Mr. Spinks, several years ago, sent to the Royal Horticultural Society's Gardens, Chiswick, some plants of this under the name of "Maize." These on being grown and compared proved to be Mme. C. Desgrange, as our correspondent says.—Ed.

SHORT NOTES.—CHRYSANTHEMUMS.

Amy Furze is a beautiful variety when well grown. It was raised in 1886, and has large, full flowers tinged with pink, the centre pale yellow. A handsome type of the Japanese reflexed class.

Mrs. Hawkins.—We consider this a magnificent variety, the flowers richer in colour than those of G. Wernig, from which it is a sport, broad, full and spreading. A bloom of it we have kept fresh for a fortnight, expanding more fully each day.

Pourpre is a Japanese variety, remarkable for the lustrous shading of its magenta-lake coloured flowers. They are of good form, full, and handsome. A plant of it in the Finsbury Park collection shows what a striking thing it is when well grown.

Alexander Dufour is a decorative Japanese variety, remarkable for the intense richness of its magenta-lake-coloured flowers. It is of a purely self hue, as deep and lustrous as the sapphire colour in many of the Auriculas. It is one of the best things for colour in the Temple show.

Gorgeous is a richly coloured Japanese variety, and likely to be grown in preference to Peter the Great, which it resembles. It is of a rich yellow colour, broad, full, and with a fine petal. There were some excellent blooms of it in Mr. Stevens' nursery the other day.

Mlle. Elise Dordan.—This is a beautiful pom-pom variety, one of Délaux's acquisitions. It is as conspicuous for the perfect globular shape of the flower as for its lovely soft pink colour. It is very neat, almost too much so, early, and very free. It is blooming well in the Finsbury Park collection.

Jeanne Marty, the Japanese Anemone variety introduced by Anduguier in 1886, and therefore not new, is a distinct and bold flower. The centre is well built, broad, and rich lilac, the drooping guard florets being of a paler shade of the same colour. It has already become one of the best of its class.

W. Holmes, the best of the early Japanese reflexed varieties, is flowering unusually well everywhere. There were large masses of it in the nursery of Mr. G. Stevens, Putney, the other day. The flower has a full, handsome form, and rich chestnut-crimson petals, tipped with gold. It was raised by M. Délaux in 1886, and rapidly became a favourite.

Elsie—This is a charming reflexed flower, not large, which is an advantage, but of medium size, and of the softest yellow colour, approaching primrose. It was certificated in 1887 by the National Chrysanthemum Society, and last year by the Royal Horticultural Society. When overgrown it becomes coarse, ragged, and practically colourless, the florets losing their charming curve.

L'Africaine.—The best blooms we have seen of this Japanese variety were at Finsbury Park recently. It was raised by Délaux and appeared under the name of George Gordon in 1882. It is a globular-shaped flower, the petals pointed, spreading and deep maroon-crimson, the reverse rich yellow. When well grown it is a handsome flower.

Peter the Great is gradually falling out of cultivation, as it is now surpassed in its line of colour by such varieties as Gorgeous. It has been a favourite for many years, as it is as long ago as 1875 that Major Carey raised it. Japanese types have a less chance of remaining long in cultivation than the incurved kinds, which are raised in fewer numbers.

Chrysanthemum Avalanche.—One more season's growth has proved the good opinion formed of it last season. The habit is all that can be desired, being

sturdy, dwarf, even when allowed to grow away at will, without resorting to the topping of the shoots or main stem. At the present time the blooms are very early, many being partly expanded. These promise to be of good quality, and well they might when the size and strength of the peduncles are taken into consideration. The blooms are pure white and of good substance.—E. M.

WATERING CHRYSANTHEMUMS.

It is a noteworthy fact that some Chrysanthemums require more water than others to bring them to a high degree of excellence. I do not know any that so acutely feel neglect in watering as the Teck family. The several varieties of it as well as the typical form must have the closest attention during July and August, or they get a check which is not perceived till later on, and nothing can then remedy the mischief. Some plants standing where they were not quite so well attended to as was needful during July are worth but little at the present time. Plants of various other kinds standing with them, and consisting mainly of robust-habited varieties such as Ethel, grandiflorum, Boule de Neige, &c., recovered when they got good attention again, but even with them it could easily be seen how variously the rather stinted supply of water had affected them. Princess of Teck has a curious way of turning its leaves upside down when it has had a check of any kind, and they never again quite recover their normal appearance. When this occurs the appearance of the plants is quite spoiled, and the quality of the blooms is injuriously affected. This and its varieties are therefore kinds that cannot be grown in the rough-and-ready fashion that is sometimes practised by those who have not time or inclination to pay strict attention to all cultural details. In marked contrast to this is the late blooming Boule de Neige, which has really wonderful powers of resistance to neglectful treatment. A few plants that had been cut down in the usual way after blooming and having furnished a lot of cuttings were set in the open air in May. They were not shifted, and sometimes they got so dry that they looked half dead. Then, thinking they might be wanted, I gave them a top-dressing, and they were watered regularly. They are now very good plants, that will apparently carry several dozen marketable blooms. The great majority of Chrysanthemums with such treatment would have lost nearly all their foliage and produced no bloom worth speaking of. There is, I think, but little doubt that whoever aims at anything like perfection in Chrysanthemum culture must study the peculiarities of each variety in watering as in all other cultural details. The critical time for Chrysanthemums and when they are most liable to sustain an irreparable injury is during July and August, and especially when the plants have become more or less root-bound. The trying period of the day is from ten in the morning until three in the afternoon. In the fierce glare of a noonday sun it does not suffice that plants growing freely and that have the pots tolerably well filled with roots should be moist; the soil must be downright wet during the burning heat of the day. A good soaking about 10 a.m. and another at 3 p.m. will keep the foliage in a healthy condition.

J. C. B.

Chrysanthemum Samuel Henshaw.—This Chrysanthemum, which is now attracting a considerable amount of attention as an early-flowering variety, is of American origin, having been sent to this country in 1885, so that it is not such a novelty as might be supposed from the fact that this is the first year it has been grown to any extent. It was, I believe, first described as an incurved flower, as also was another early-flowering variety (Mrs. J. R. Pitcher), which is now pretty generally distributed throughout this country. Besides these two, we received many other varieties the same year, the most notable of them being gloriosum (now grown everywhere), Mrs. William Mencke, Snowstorm, Syringa, Golden Prince, Moonlight, Gorgeous, and Mrs. C. W. Wheeler. Should the variety Samuel Henshaw turn out to be as

valuable as is anticipated by some, it will be another instance of a plant whose merits were overlooked when it was first sent out. Other instances are the now justly popular double-flowered zonal Pelargonium F. P. Raspail, which was put into commerce some years before it was generally grown, and the Chrysanthemum Mme. Desgrange, that was almost lost until accidentally discovered in an out-of-the-way place, and yet now is grown by everyone.—H. P.

Cut-down plants.—The advantage of cutting down a certain number of plants for decoration is seen by the vigorous specimens in Messrs. Laing and Sons' nursery at Forest Hill. There are several plants of the variety Avalanche in the fullest health and vigour, clothed to the base with rich green foliage, and each stem carrying a bloom. Though the flowers are not so large as those on specimens grown expressly for show, they are of good size, full, and bold. The practice is to strike the cuttings in the usual way, and about the end of May or beginning of June, cut the plants down to within a few inches of the pot. This results in a number of strong lateral growths which should be thinned out to three or four shoots. The Chrysanthemums are then transferred to their flowering pots, and grown on in the usual way, each shoot carrying only one flower. The advantage of these dwarf, neat healthy plants over the tall ungainly specimens that need a ladder to reach the top is immense. It is a practice that amateurs, or those who do not wish to grow for exhibition, should adopt. The plants in the Forest Hill nursery are not more than 2 feet in height.

Chrysanthemum Mrs. Alpheus Hardy.—In reply to "H. P." (p. 320), if the blooms are equal to the foliage and habit of growth there will not be much to complain of, as the foliage is with me very fine and the habit of the plant sturdy. It is too soon yet to speak of the flowers, as I received my plants late, and being a new sort such a demand had to be met, that the young plants had been pushed on in more heat than was good for them. Even under these conditions I feel sure that if the blooms come up to the published description, it will be a very desirable introduction. We shall probably find it much better next year than this. As all Chrysanthemum growers know that anything like forcing in the early stages is against fine blooms in autumn, I do not think much of this will be necessary next year to meet the demand, as the plants send up ground suckers very freely.—J. GROOM, Gosport.

—From inquiries made, and from my own experience, I fear we shall not see much of this highly-praised variety this season. My plants of this sort are miserable in the extreme, the growth is bad, the leaves very small, while the prospect of buds, let alone blooms, is most remote, not a vestige being visible. I only know of one grower who has a prospect of seeing this variety in good condition. Most growers do not seem to have been able to get any growth into the plants, let alone buds. This, I fear, is the result of over-propagation, so that next year it may be possible to determine the value of this Chrysanthemum, as growers will be able to start at the proper time with cuttings of their own growth.—E. M.

Plants on walls.—Plants for covering walls, and in this way giving a supply of late blooms, are now freely set with flower-buds, which need attention in the matter of thinning if larger blooms are required. This is quite a matter for individual consideration, although I think it well to point out the means required to have blooms of different sizes. The plants on our wall are not nearly so tall as in some past seasons, owing probably to the recent hot weather, as at that time the plants were not supplied so freely with moisture as was necessary. Beyond the dwarf character of the plants, they look very well, being well furnished with branches and healthy leaves. The points of the shoots must be nailed to the wall for the last time, so that the leaves will have time to right themselves before the flowers begin to unfold. The shoots will be laid in so as to come under the wall coping, which unfortunately is much too scanty to

thoroughly protect the buds and blooms from rains. If this could be effectually done frosts would not injure the flowers nearly so much and they would last considerably longer in bloom. Anyhow, a capital show is produced annually, and the flowers are much admired after the bulk of the indoor plants are past their best. Those on the wall invariably last till the second week in December, the quantities of small flowers then produced forming an agreeable change after the eye has feasted so long on the large blooms inside. The colours of these outside blooms always appear especially bright.—M.

NAMING THE PLANTS.

THIS is often done in such a manner as to cause much confusion when the flowering season comes round, as the wrong naming of the varieties often causes the owner of such plants to be disqualified. The dealers in these plants are frequently blamed for supplying wrong-named sorts when really they are quite innocent. Such mistakes occur in this way. A person exhibits a stand of blooms at a show, some of them named wrongly, and a visitor perhaps with no knowledge of the varieties other than seeing them there for the first time is struck with their beauty, takes down the names as there given, orders the same kinds from a nurseryman, who sends the correct kinds. When the plants flower quite a different variety is presented; hence the trouble caused by the simple act of wrong naming. Nothing is so annoying as growing carefully for eleven months plants which are supposed to be some particular kind and then to find them perhaps worthless. Then is the time when a knowledge of the varieties by their leaves, habit of growth and colour of the stem comes useful. I have always endeavoured to point out the advantages gained by studying this phase of Chrysanthemum culture as a means of preventing disappointment. Two instances of wrong naming lately came under my notice when visiting a garden where Chrysanthemums are largely grown. The gardener had adopted the plan of growing a good number of plants of each well-known variety in preference to so many sorts about which a doubt as to their quality was entertained. One batch of plants named *Venus* was really *Eve* or *Mabel Ward*, both being of the same habit of growth. In another case *Isabella Bott* was growing in the place where *Sir Stafford Carey* ought to have been. Now a knowledge of the varieties by the habit of growth, formation and colour of their leaves would have prevented mistakes of this kind, because the error could have been noticed during the early stages of growth in time to have replaced the plants with others of the true sorts required, and thus have prevented disappointment. This is, I think, a sufficient reason why a study of the leaves and growth of Chrysanthemums by those who are specially interested in their cultivation is time well spent. To make my meaning clear to the inexperienced I will cite one or two instances whereby the learner may be able with a very little study to become acquainted with the different varieties from a study of their leaves. *Eve* has green stems which eventually turn pale brown; the leaves are round, not so deeply cut as those of some sorts, and generally pale green in colour. The leaf-stalks are short, giving the plant a sturdy upright habit of growth. *Isabella Bott* has dark coloured stems, the leaves have a drooping appearance at the points, are deeply cut and have long leaf-stalks, the plant on the whole presenting a lanky look. *Sir Stafford Carey* has the darkest skinned stems of any variety that I know. The leaves are very deep green, not large, but much serrated. Two instances in the Japanese section will suffice to show what a vast variation there is in the formation of the leaves of different varieties. *Grandiflorum* is perhaps the most striking of all, having peculiar traits in its appearance; the leaves are thick and heavy in substance, drooping much, with very prominent midribs; generally the leaves of this variety are dense green in colour, and very early in the autumn assume a bronzy hue. *Mme. C. Audiguier* is a very tall-growing variety, with small leaves, which have a drooping tendency.

This sort generally grows from 4 feet to 5 feet high before making its first natural break, and very often the full height reaches 12 feet before the buds from which are expected the best blooms form. The wonder is how such thin stems and poor looking leaves can produce such magnificent blooms as does this sort when seen at its best. Some persons may not at the first glance consider it necessary to take the trouble to derive a knowledge of the Chrysanthemum even in this way; to them all varieties are alike, but a very short study and a consideration of the advantages gained will convince the most sceptical that a knowledge of the varieties by the leaves is advantageous. E.

FERNS.

W. H. GOWER.

ADIANTUM CURVATUM.

I HAVE just received a frond of this Fern from S. Milne, Edinburgh, for a name. Your specimen is *Adiantum curvatum*, and I am sorry I cannot compliment you upon the condition of the specimen sent. As I have not seen this plant in a happy state for a long time, I will offer a few words of advice as to its management. *A. curvatum* is an evergreen Fern from Brazil, grows some 18 inches or 2 feet high, and may be considered one of the very handsomest species of the Maiden-hairs. It resembles in the divisions of its fronds and its general habit *A. pedatum*, from North America, more than any other kind that I can remember, but one seldom sees it in such rich health as the last-named plant. But why is this? it may be asked. It is nothing new to say that Ferns like shade, but this is a plant which enjoys a greater amount of shade than any other Fern that I know, and it cannot be made at all presentable unless it has shade. As generally seen its pinules are deformed, some entirely wanting, and the general contour rusty and dirty-looking, not at all of the bright, although light green appearance its fronds have when the plant is in full health and vigour. Another peculiarity of this species is that it likes a great deal of water, and the soil should be somewhat stony and of a dry nature. This I consider a very curious feature in the habits of a Fern, but it is such treatment which produces fine and handsome specimens, and not such a miserable one as that now before me. It is a plant that has been in cultivation in this country about fifty years, and it appears to be catalogued by most of the London nurserymen, but very few will send you the right plant if ordered; indeed, the plant is rare, and cannot at all times be procured. The fronds are forked, produced from a creeping rhizome, the pinnæ being each some 6 inches to a foot in length and about 3 inches across, the final divisions or pinnules about 1½ inches long and bright light green in colour. The sori are also almost always confined to the under edge of the upper side of the pinnule, being very rarely seen upon the lower side, although upon some rare occasions they may be found just turning on the under side. This species belongs to a family noted for their beauty, and this plant takes rank as one of the very prettiest of them all. It requires an abundance of heat both in summer and winter and not much soil about its roots; indeed, a large plant may be grown in a moderately sized pot.

Hemitelia Smithi.—In many gardens the large amount of room which the commoner Tree Ferns, like *Dicksonia antarctica* and *Cyathea medullaris*, in a few years require is an effectual bar to their admission. The effect, however, which healthy Tree Ferns produce in a group of plants is so marked that if possible room should be made

for them. It may be useful, therefore, to draw attention to this New Zealand species, which is not so generally known in gardens as it ought to be, but whose beauty, and especially its slow growing habit, make it of great value. Specimens with stems about 2 feet high, the spread of the fronds being about the same, are perhaps the most useful. Several examples may be seen in the temperate house at Kew, the cool, moist atmosphere of which appears to exactly suit them. The light green of the foliage contrasts well with the black fibrous stem. Any greenhouse where the temperature is kept above 40° in winter would do for this Fern. It should be potted in peat and kept moist at all times.

MANUFACTURE OF DISTILLED PERFUMES AND ESSENTIAL OILS IN SOUTH FRANCE.

THE distillation of essential oils from various species of wild plants, such as Lavender, Thyme, Fennel, &c., is an important industry in South-eastern France. It is described in a recent report from the American Consul at Marseilles. The region of aromatic plants is a mountainous country about 100 miles in length by 50 in breadth, which includes part of the Department of Drôme, Vaucluse, Var, Basses-Alpes, and the Alpes Maritimes. It lies at some distance from the coast, Nyons, the centre of the distilling industry, being in the valley of the river Aigues, which is the northern limit of the Olive in Eastern France. The most useful plants are Lavender, wild Thyme, Rosemary, Rue, Sage, and Fennel, which last grows along the margins of mountain streams. Of these by far the most important is the Lavender (*Lavandula vera*), which grows so profusely that the summer winds carry the perfume far over the hot plains below. The harvest enlists a large share of the peasant population; and so profuse is the supply, that in good seasons the people who gather and sell Lavender to the distillers, at prices ranging from 5 francs to 8 francs per 100 kilogrammes, are able to earn thereby as much as 4s. a day, wages that are considered munificent in a country of scant employment and ill-requited labour. The distillation of Lavender on an industrial scale was begun more than a century ago in the neighbourhood of Grasse, which is still the principal mart of production and commerce for the finer perfumes of cultivated flowers; but during recent years the business has extended inland and westward until Drôme, the most westerly department of the district, now produces 66,000 of the 125,000 lbs. of oil of Lavender manufactured in the country. In many places Lavender, Rosemary, Thyme, and the other aromatic plants are distilled by farmers and small operators in the villages and communes. The harvest of Lavender begins about the 1st of July and continues until the end of September. The best results, both as to quantity and quality are obtained by distillation of the first plants in the seasons of blossoming, but as these are available only during one quarter of the year, the Lavender is dried like hay, and furnishes material for distillation during nine or ten months. The same is true of Aspic (*Lavandula Spica*), which is known as "garden Lavender," but all are, like the true Lavender, at their best when in the season of full flower, which varies according to species from April until the end of summer. The practical process of distillation varies but slightly for all these varieties, and the same apparatus is often used successively for each kind of plant as its season of flowering and harvest arrives. Three hundred pounds of dried Lavender plants, or 220 lbs. of Aspic, are required to produce 1 lb. of essential oil. The refuse plants are dried and used as litter for stables and manure. In medicine it is employed as an excitant and tonic in the treatment of paralysis, hypochondria, and epilepsy. The oil of Aspic serves measurably for the same purposes, but is a coarser, ranker perfume, and much less valuable than the true Lavender, for which it is often substituted. All this class of essential oils, including those of Thyme, Rosemary, and Fennel, vary greatly in grade and consequent value according to season of distillation, the skill and care with which the plants are selected, and the process of manufacture. The distillation of essential oils from wild aro-

matic plants, the manufacture of perfumes from cultivated flowers, and the preparation of preserved fruits by the process of crystallisation are three profitable industries peculiar to Southern France. They have been built up, each in its separate locality, and have become practically monopolies for no other apparent reason than that they were first successfully undertaken here, and the world of consumers is content to believe that original brands are best. The same is true of other things, notably liqueurs, such as Benedictine and Chartreuse.

STOVE AND GREENHOUSE.

PERSIAN CYCLAMENS.

UNDER proper treatment good flowering plants may be established within a year. As winter-

seed may now be sown as soon as convenient, and before sowing the seed it is a good plan to soak it for a day and a half or two days; the water may then be poured off and a little quite dry sand shaken among the seeds. The seed-pots may be prepared by filling them nearly full with any ordinary loamy compost, and then surfacing them over with a little finer soil, as loam, leaf-mould, and sand, sifted through a fine sieve. After spreading the seed evenly over the surface it may be lightly pressed in, but should not be covered with soil. A little fresh Sphagnum Moss may be used, and this should be cut up quite small, and just enough used to cover the surface. The seed-pots may be placed in the close propagating pit, but should be removed as soon as the young plants appear, or if the pots are placed in a more exposed position, they

potted only moderately firm, and the crowns of the corms kept above the surface. During the winter the plants may be kept in an intermediate temperature, and they succeed best on a moist bottom, but should be in a light open position, and as close to the glass as possible. They should be ready for potting into 4½-inch pots early in June, and some of the most vigorous earlier than this. Those potted in June may be at once placed in cold pits or frames, or if on a hotbed that is nearly spent they will then get a good start. After the first week or so, plenty of air should be given, and later on when the nights are warm the lights may be taken off altogether, and will only be required to protect the plants from storms or to provide a little shade during the hottest part of the day. A little extra shading may be necessary if the weather is very bright. Shading should be avoided as much as possible, however, and always taken off early. Cyclamens do not make much foliage early in the season, but after the weather begins to get a little cooler the leaves come up very quickly. The plants should have plenty of room, so that the air can pass through them. This is a very important point, especially after the flower-buds begin to form; if crowded the buds will remain dormant and eventually damp off. Watering must always be carefully attended to, and after the pots are well filled with roots, some liquid manure may be used, or a little fertilising matter be given occasionally. Cyclamens are subject to aphides, thrips, &c., and suffer very much if these pests are allowed to get established. On the first appearance of insects the plants should be thoroughly cleansed by smoking or dipping. It is not advisable to dip the plants after the flower-buds are formed. The difficulties of growing Cyclamens are more imaginary than real, and I believe failure is often caused by too much coddling and keeping the plants in too high a temperature, which not only weakens them, but is favourable to the most destructive kinds of insect pests. One more point must be considered: that is, the necessity of securing a good strain of seed. In saving seed, only those varieties of the best habit of growth and with the most distinctly coloured flowers should be selected; and if fertilised, the red kinds should not be crossed with the white varieties, or dull, indistinct colours will be the result. A.



A well-grown plant of *Cyclamen persicum*.

flowering plants Cyclamens need no recommendation, but unfortunately they are not grown so extensively as they deserve. The reason probably is that where only a limited number of plants are required they are grown amongst other things, and do not meet with exactly the treatment they require; but once let anyone grow only a few and give them fair treatment, a rich succession of bloom, which will continue nearly throughout the winter, will be the result. The

seedlings should be pricked off as soon as large enough to handle, and must be potted off singly when they have made about three or four leaves. The compost for growing Cyclamens in should consist largely of good mellow loam, some well-rotted leaf-mould, and a little sand or soot may be added. Use the soot very sparingly for the young plants, and more liberally for the later pottings. The plants should be

Lilium Wallichianum superbum.—This remarkably handsome Lily, noted in THE GARDEN (p. 324) as flowering in Messrs. Low's nursery at Clapton is surely worthy of specific rank, for it differs in so many particulars from the typical *L. Wallichianum* that its position as a variety of Wallich's Lily certainly needs reconsidering. In a previous article I indicated the great many points of difference that existed between the two, and suggested that the so-called superbum was really the Lily discovered by Wallich and named by him *ochroleucum*, an opinion that I still think to be the correct one. Briefly stated, the main points of difference between *L. Wallichianum* and its so-called variety *superbum* are—firstly, *L. Wallichianum* itself is a slender-growing plant, with long narrow leaves of a grass-green tint, and very thin in texture, while the flowers are long, pure white, with the exception of a greenish tinge on the exterior towards the base, and the segments are reflexed in a marked manner. On the other hand, the so-called *superbum* has a much stouter stem, the leaves also being shorter and more thickly arranged than in the other, while when young they are tinged with reddish brown. They also gradually become broader towards the top of the stem. The flowers, too, are different, those of *superbum* being more like those of *L. neilgherrense* than *L. Wallichianum*. They are borne three or four on a plant, the individual

flowers being about 9 inches long, and nearly as much in diameter when fully expanded. The colour is a kind of ochre-yellow in the interior of the tube, while the recurved portion is of a milk-white hue. Besides this the segments do not reflex to the same extent as in *L. Wallichianum*, and the three outer ones are tinged with purple on the exterior, especially if the plants have been exposed to full sunshine. In this Lily the anthers are brown, while in *L. neilgherrense* they are of a rich yellow tint. Another very marked feature which I did not observe on the plant exhibited by Messrs. Low early in the season, but which is present on all the later ones that have come under my observation, is the presence of small bulbils in the axils of the leaves towards the upper part of the stem, as in the Tiger Lily (*L. tigrinum*) and *L. bulbiferum*. I have never noticed this character in *L. Wallichianum*, nor in any other Himalayan Lily, and from the rapid progress made by the young bulbils while on the plant, this so-called superbum bids fair to succeed under cultivation better than the other Lilies from the same region.—P.

Fuchsias with white corollas.—The distinct and free-flowering *Fuchsia Frau Emma Topfer*, mentioned in *THE GARDEN*, Oct. 5 (p. 324), is a useful variety, the corolla, however, being very much tinged with pink, more so in fact than in any other of this section that I am acquainted with. For larger and bolder specimens a great favourite of mine is *Mme. Jules Chretien*, sent out several years ago, but still one of the very best. This is a free-branching kind, but somewhat upright in growth, while the flowers are large with a pure white corolla. Mrs. Short, somewhat in the way of Miss Lucy Finnis, is more robust in constitution than this last, and is therefore to be preferred. Of single-flowered forms there are many varieties to be met with, but I do not know any to surpass *Alexandra*, a very old kind, which every year flowers well in the greenhouse (No. 4) at Kew. It is such an old variety that at the present time I cannot find it in any trade list.—H. P.

Lilium nepalense.—This Lily is again flowering in more than one of our leading nurseries. It is really so distinct and beautiful, that one wonders how it could have escaped notice so long. Like another Indian Lily (*L. neilgherrense*), I do not think that we shall induce it to thrive for any great length of time in this country, though the beauty of its blossoms is such as to well repay any extra trouble that may be taken in its cultivation. It is essentially a greenhouse plant, for even if proof against the winter's frost, the flowers are borne so late in the season that they would be injured by the rough winds and heavy rains of autumn. There appears to be some difference in the colour of the blossoms, for of those I have seen some have the dark colouring of the central portion of the flower extending farther up the petals than others, while the deep tinted part also varies in hue. In addition to this the yellow or greenish-yellow of the recurved part of the petals shows a certain amount of variation.—H.

Begonia Adonis.—Just as the summer flowering *Begonias* are on the wane the blooms of this variety commence to expand, and under favourable conditions they will make a show for some time. This extremely useful variety is the result of crossing a *Begonia* belonging to the tuberous-rooted, large-flowered section with pollen from that beautiful hybrid variety John Heal. *B. Adonis* is in general appearance a good deal like one of the tuberous-rooted varieties, the blooms being almost 3 inches in diameter and of a bright pink colour. The flower-stems arch over gracefully, so that a specimen when in full bloom is most attractive. Where size of flower is looked upon as the principal object to be aimed at, this would be regarded as the finest of its section, yet the majority would, I think, give to the smaller-flowered John Heal the premier position. This variety, of which a coloured plate was given in *THE GARDEN* for March 9 of the present year, is one of which any raiser might well be proud. In appearance it is, as might be expected from its parentage, more nearly related to the curious peltate-leaved winter-flowering soco-

trana than *Adonis*. *B. John Heal* was obtained by crossing *B. socotrana* with the pollen of one of the tuberous-rooted class, and in general appearance is about midway between the two sections. In common with *B. socotrana*, these hybrids go to rest soon after the flowering season, and remain dormant till past midsummer, when they should be shaken out and repotted, after which they will grow away freely and commence flowering in September or October. Like so many members of the genus, these *Begonias* succeed best when treated as intermediate house plants.—H.

LAPAGERIAS AT NASH COURT.

THIS beautiful Kentish place has of late years been brought into prominence through the magnificent variety of *Lapageria rosea*, which bears its name and which is undoubtedly the finest form known in cultivation of this handsome greenhouse creeper. As regards colour and size of the flowers, I know of no other form of *Lapageria* approaching the Nash Court variety. It might be thought that superiority in both size and brightness of colour are due to cultivation, but although this is perfectly understood and equally well applied by Mr. Humphrey to both the varieties, it is evident that excellency of culture is not sufficient to produce such results. Besides the specimen of the above-named variety several other plants of *Lapageria rosea* and *L. alba* are planted in the same conservatory, the roof of which from August to November is entirely covered with masses of flowers of various shades of red and white. Very different, however, are the flowers of the ordinary form to those of the Nash Court variety, yet the plants are all growing in the same border and are all subjected to the same treatment, which, as the vigour of the plants and the abundance of flowers produced amply testify, is all that can be desired. Not only do all these plants exhibit a series of shoots gradually increasing in size, but their foliage is of greater substance than is generally the case, and the thin, wiry, small wood, which is so frequently noticed in *Lapagerias*, is conspicuous by its absence, the lateral shoots produced by these strong canes being themselves good-sized flowering wood, which never fails to produce an abundant crop of flowers of large dimensions, the majority of them measuring over 4 inches in length and with a brightness of colour varying according to the variety. To my inquiries respecting the thin wood which I failed to detect in any of his plants, Mr. Humphrey replied that every season after flowering the *Lapagerias* are subjected to hard pruning, by which all wood that has already borne flowers and that which, although strong enough to produce buds could only give small flowers, are mercilessly cut away. By this means the stronger shoots receive still additional vigour, and at the same time their lateral growths derive a greater benefit from exposure to the action of light and air which pass freely through them at all times.

Lapagerias are by many people supposed to be difficult to manage, but this must now be classed among the many erroneous notions and prejudices held in connection with plant cultivation, for, provided *Lapagerias* are kept cool, viz., 40° to 45° during the winter, and planted so that their thick, fleshy roots may frequently be flooded with water during the growing season and kept in a moist condition at all times, few, if any, flowering plants give less trouble and at the same time more satisfactory returns for the attention bestowed upon them. Plenty of ventilation and light with occasional syringings over the foliage is also very beneficial to them, while strong and direct sunlight must be carefully avoided. It is when grown under such conditions that a fair comparison can be established between the ordinary *Lapageria rosea* and the Nash Court variety, which, besides bearing much more handsome flowers, also produces them in greater abundance and is also of a more vigorous growth. S.

Thunbergia grandiflora.—There is a fine specimen of this vigorous climber in the Victoria house at Kew. It entirely clothes the rafters with its ample foliage, and bears at this season a number of

large delicately blue flowers. Those who have large greenhouses or conservatories should make a note of it. It was introduced from India as far back as 1820.

WORK IN PLANT HOUSES.

NEPENTHES.—By the introduction of new kinds of *Nepenthes* from the countries where they are indigenous, and the raising of new varieties by crossing the various species already in cultivation, there has been a large addition to the comparatively few sorts that for a long time were known. Amongst these are some of the finest coloured and largest pitcher kinds, of which it is not too much to say that they form a leading attraction in the most select collection of plants which it is possible to form. When grown in a warm stove temperature they are never quite at rest, but it is only in the latter part of spring and during the summer that the largest pitchers are produced. In the case of most of the sorts, when the shoots have attained a certain height the pitchers begin to come long and thin, and are devoid of the wing-like appendages which add so much to their appearance. When the plants have arrived at this state, it is best to head them down. If this is done now, they will make much better progress next year than if it is deferred until spring. When heading back is to be carried out, there must be no attempt at partially drying the soil by withholding water, in the way that is necessary with most things, as the roots require to be always thoroughly wet. The stems may be cut down to within 6 inches or 8 inches of the collar; let the leaves which the stems carry below the point of severance remain, as they will help the plants to break. In all probability, plants that are headed down in the manner advised will require repotting before another season's growth is made. The necessity for keeping the soil wet soon reduces the best fibrous material in which it is possible to grow the plants to a close soap-like consistency, in which the roots will not remain healthy. But it is not safe to repot now, as with the dormant season coming on, and consequently a lower temperature, there would not be so much chance of the roots beginning to move freely as there will be if the potting is left until warmer weather, with the use of more artificial heat, which will favour quicker growth. Cuttings should be made of the tops; each cutting will be more certain to make a plant if it consists of two joints. Retain the leaf that is attached to the upper joint entire, or if it cannot be conveniently enclosed under the propagating glass, reduce it to half its length. If removed altogether, the cuttings are less likely to strike. The material in which cuttings of *Nepenthes* are put must be of an open nature; a mixture of potsherds broken quite small and sand in proportion of two-thirds of the former to one of the latter will answer. Fill a large seed-pan with this and put the cuttings in about 3 inches apart. Keep them quite moist and covered with a propagating glass. If a bottom-heat of about 80° can be given them they will strike sooner. Cuttings put in at this time will be well rooted early in spring, when they must be put singly into 3-inch pots.

DIPLADENIAS.—Plants of the different varieties of *Dipladenia*, excepting the white Bolivian species, *D. boliviensis*, that have been prepared for cutting back, in the manner advised some weeks ago, by keeping the roots drier than ordinary, will now be in a condition to have their tops removed. If they have been treated in this way before, this year's shoots may be cut down to within two eyes of where they were shortened a year since. In place of waiting until the plants have again broken before repotting them, my own practice has been to repot at once as soon as the tops were removed. *Dipladenias* require to be repotted annually; if left in the same soil for a longer time than a year there is danger of its getting too far decomposed for the roots to remain healthy. If the potting is put off until the young shoots have started, the shaking out, which the roots in a great measure require, causes some of the growths to stop in a way that prevents their making further progress. On the other hand, if the old soil is got away, and the re

potting done at the same time that the tops are removed, there is no subsequent check; by this means all the branches may be depended upon to start; though by following this course the shoots will break weakly, there is still plenty of time for them to gain strength between now and the spring. In shaking out the plants it is necessary to be careful not to injure the tubers which are more like those of a small Dahlia than anything else. If bruised in any way, or they receive a wrench where they are attached to the collar, they generally rot away, and in this manner endanger the life of the plant.

PROPAGATING YOUNG STOCK OF DIPLADENIAS.—It is well to keep up a sufficient quantity of young plants; consequently cuttings may now be put in. Shoots of the current season's growth that have attained their full thickness, but that are still green in the bark, strike the best. They will grow from single eyes; but, except in the case of any variety that is scarce and it is necessary to make the most of the wood that is in right condition, it is better to have cuttings that consist of two joints. They may be put four or five together in 6-inch pots filled with sand and covered with propagating glasses or enclosed in a striking frame. Keep moist both at the roots and in the atmosphere. If a bottom heat of about 80° can be given them, the cuttings will root sooner, but they will do without this, provided the temperature ranges from 65° to 70° in the night.

CALADIUMS.—Where the natural decay of the leaves of these plants has been assisted in the way advised recently, the foliage will now be gone and the tubers will be in a condition of rest. They may either be wintered in the pots in which they have been grown or taken out of the soil and put in paper bags in dry sand. Whichever way is adopted they can be stored away anywhere where they will have a temperature of about 60°; they should not be kept much under this, or there will be danger of their decaying. The small *C. argyrites*, the leaves of which are so useful for mixing with cut flowers, may be easily kept fresh all the winter; all that is necessary is to keep the soil moist enough to prevent the foliage going off with the addition of an intermediate temperature. This pretty kind seems not to require so much warmth as most of the larger growing sorts.

ACHIMENES.—The plants which were brought into bloom in succession at the latter part of summer will now have lost their tops and gone to rest. Like the Caladiums, they may either be kept in the pots or put in sand in paper bags. A temperature of not less than 50° if quite free from damp will suffice for them until the time for again starting them.

GLOXINIAS.—The large tubers that flowered early in the season and which will now be at rest should be put away in their winter quarters. It sometimes happens that with the press of other work they are allowed to stand about in cool houses or in potting sheds after the weather has become colder than they like, and through which they suffer. A temperature such as advised for Achimenes will do for Gloxinias.

GLORIOSAS.—These distinct and handsome summer blooming plants will now also have died down, and should be put away for the winter. They usually do the best when let to remain in the pots where they have grown. They will do with a like amount of warmth that answers for Achimenes, or possibly a little less, but it is not well to stand a chance of losing them for want of a little more warmth.

CYCLAMENS.—Plants raised from seed sown about twelve months ago should by this time have got well established in 5-inch pots, and have attained a size that will enable them to flower well. To grow these plants well they require especial treatment, different from that which will answer for most things. The old-fashioned manner of proceeding was to sow the seeds in spring and keep them moving slowly through the summer with the general stock of greenhouse subjects. In this way no flowers worth taking into account were

produced before the plants were two years old or more. Now their treatment is better understood, and from the time the seed is sown, about the end of summer up to the time of their coming into flower, some fifteen or eighteen months later, the plants are kept a little warmer than ordinary greenhouse stock, with a slightly more humid atmosphere accompanied by careful shading during the spring and summer when the sun is powerful, yet with as much light as it is possible to give them by keeping them close to the glass. Managed in this way they attain double the size within the time that they would under the old system. No more shade will now be required. If a low house or pit is available with a bed of ashes that will hold a little moisture to stand them where the tops will be still near the glass, this is just what they like. If necessary, inverted pots may be used to raise them nearer the light. Old plants that were treated as advised during the summer and that were repotted after they had again begun to grow, should be managed like the younger stock, except that they will be kept a few degrees cooler. All the plants should be examined to see that they are free from aphides; if many of the plants are troubled with the parasite, it will be necessary to fumigate them with tobacco. Where only a few are affected dipping in tobacco water will be best. Seedlings that have been raised from seed sown in summer should be pricked off as soon as large enough to handle into pans or boxes filled with soil of a like description to that in which the seed was sown. It is well to carry out this work early before the seedlings are crowded too much in the seed-pan, for if the leaf-stalks get drawn to any extent it will do much harm to the plants. To further prevent this they should be kept through the winter close to the glass in a temperature of about 50° by night. With genial warmth of this description the plants will keep on growing so as to be in a condition for potting sooner. T. B.

SHORT NOTES.—STOVE AND GREENHOUSE

Impatiens Hawkeri.—This is very beautiful in the annexe to the Water Lily house at Kew. The plants are not in pots, but planted out in the border.

The old double white Chinese Primula.—To show to what extent this is grown for cut flowers, Mr. Stevens has over 2000 plants of it in his nursery at Putney. No double Primula is equal to this.

Primula obconica.—This fine perpetual flowering Primrose is well grown at Castle Hill, where a very high value is set upon it because of its free-blooming qualities, comparative hardiness, and adaptability to flower in warmth during the winter. The plants now in 6-inch pots and in a cold frame will soon go into a temperate house and bloom abundantly all the winter.—A.

Anthurium Andreanum.—A very fine spathed lot of these plants was shown at the Drill Hall, Westminster, last week from Sir Trevor Lawrence's garden, but I saw some less drawn and carrying much finer spathes at Castle Hill, Englefield Green, the other day. Mr. Swan has there a batch of seedlings of the Chatsworth strain, and whilst all were carrying fine and very brilliantly coloured spathes, one had shields measuring from shoulder to point 8 inches and 6 inches across. The spike also was short. This was, I think, the finest I have ever seen.—D.

Eulalia japonica variegata makes a charming plant for arranging amongst flowers or foliage in the conservatory. Young plants are best suited for this purpose. They should be divided and potted into 5-inch pots in early spring, growing them on in heat for a short time. When about a foot high they will be found most useful. The long Grass-like foliage, which is so beautifully striped, looks graceful when arranged amongst other plants. It is used in this way at Kew with good effect. *Eulalia japonica zebrina* is also a graceful pot plant, but it soon gets starved and the foliage turns yellow when grown in small pots under glass.

Carnation Dr. Raymond.—This is one of the best of the winter-flowering Carnations, and the fortunate raiser of it gave to the floricultural world a variety of great beauty and value. When held up to the light, the ground colour is vermilion-crimson, flushed on the petal edges with maroon, the petals slightly fringed, the flowers large and full, the petals

symmetrically laid upon each other, and it does not burst its calyx, a fault with many of the winter-flowering Carnations. Dr. Raymond is also a good grower, and produces its flowers on stems of fairly good length, and therefore well adapted for cutting from.—R. D.

FUCHSIAS IN AUTUMN.

With a little management it is as easy to have a good display of Fuchsias in autumn as during the summer months. To have plants in 4½-inch or 6-inch pots full of bloom at the present time, the cuttings should be put in early in May. By the latter end of August they will make nice bushy specimens, and can then be allowed to bloom, which they will do very freely up to November. The value of such plants is great during the autumn months. To bring them along quickly in the hot summer days it is necessary to pay great attention to watering. There is no soft-wooded flowering plant that is more easily checked by drought than a Fuchsia, and if once it becomes dry at the roots, it can never again be made to grow away freely. As soon as the roots begin to work round the sides of the pots the plants should get liquid manure or a top-dressing of some concentrated stimulant. A healthy growing atmosphere, too, must be maintained by frequent overhead sprinklings when the weather is hot and dry. Plants that have bloomed early in the season will do so again if they are shortened back and accorded the same generous treatment given to young ones. They will soon break, and will later on yield another crop of bloom but little inferior in quantity and quality to the first one. Some kinds indeed, more especially those having single, moderate-sized corollas, will bloom uninterruptedly with more or less freedom all through the summer if the feeding is never discontinued. The natural blooming period of the Fuchsia is often much shortened by starvation. The common practice is to feed well until the plants come into bloom. Market growers do no more than this, as they have no object in prolonging the flowering season, the plants passing out of their hands as soon as they are in a saleable condition. If those who grow their own plants will, however, continue to feed liberally, they will find that the blooming time will be considerably lengthened. The flowering shoot, instead of coming to a standstill, will continue to extend and form fresh buds. J. C. B.

The Earth Nut or Oil Nut (*Arachis hypogæa*).—I have several times tried to fruit this plant, but have not succeeded till this year. Even the seed or nuts sold at the grocers' germinate well enough, but they require very strong heat to bring them on. In it they become infested with red spider. These pests cling to it so tenaciously that it seems impossible to exterminate them. The plants receive a check and make but little progress afterwards. This year, however, I received from Messrs. Burpee, of Philadelphia, seed of a variety of much harder constitution which is largely grown in the cooler States, and is said by that firm to be "excellent for fattening pigs," which seems not unlikely, as the kernels are full of oil. It has the peculiar property of planting its own seeds. The flowers, yellow and insignificant, appear round the collar, and the pods as they grow force themselves into the soil. When ripe nothing is visible above ground but the stems, the pods being completely buried. I raised some seedlings in the spring and grew them on in heat. In May the pots were stood in a sunny frame where they have perfected their curious fruits. Enormous quantities of these "nuts" are exported from tropical countries, chiefly, I believe, from Africa, and the nut oil used by artists is one of the preparations extracted from them. They are also, I have been told, used in cookery.—J. M., Charmouth, Dorset.

Balsams.—A quantity of double Balsams in small pots carrying just one erect stem well covered with double flowers displays no special merit, but still they were somewhat unusual objects in October. These were shown at the Drill Hall on the 8th inst. from the Royal Horticultural Gardens. The strain was of the Parisian house of Vilmorin, but showed no merit over what we are familiar with in Balsams, and it is to be presumed that the

plants were regarded as novelties for the time of the year. Were strains of double Balsams from a score of home and foreign seed houses collected and sown it is probable that all would be nearly identical. We have a dozen really distinct and well defined colours or markings and several others not too distinct, but still enough to satisfy the seedsmen who give their appellations.—A.

Vallotas.—Old plants of the Scarborough Lily that have not been repotted for five years are blooming with great freedom. These root-bound specimens throw up the finest flower-spikes. Ever welcome as the brilliant blooms of this old inmate of our gardens are, they undoubtedly have a greater value from the middle of October than in early autumn, which under ordinary treatment is their time for blooming. During September there is yet much in the outdoor garden to admire, but towards the end of the following month but little brightness remains there, and the worth of anything that blooms freely under glass at that time is much appreciated. I generally manage to have some Vallotas in flower up to the middle of November, and the only way to get them then is to check their growth somewhat in summer. This may be done by putting them in a rather shady place in the open air from June to the middle of August, and giving no more water than will keep the foliage healthy. Then placed under glass and watered liberally with frequent doses of liquid manure, the plants will flower about a month after their natural time. The more liberally the plants are treated during the growing period the more rapidly they come along. The worst of it is the flowers do not last long in September; whereas a bloom will continue in fine beauty from a fortnight to three weeks, when it expands at the latter end of this month.—J. C. B.

ROSE GARDEN.

ROSES AT THE PARIS EXHIBITION.

THREE things strike one in regard to these. The first is their freshness, the second their enormous numbers, and the third the late date of their blooming. At home, unless in a few sheltered nooks and corners, or on warm or other walls, the bulk of our Roses are already considerably advanced in the sere and yellow leaf. Though cleaner than usual, and but little defoliated with the red rust, they can hardly be said to be later than usual. Even where late growth continues on the tops of the shoots, the leaves are mostly faded from their base. This is by no means a bad sign.

Exhibitors are numerous, and it would only divert attention from these main points were any attempt made to enumerate the names or numbers of the exhibitors. The two chief who have furnished the central grounds of the palace are Mons. Charles Verdier fils and Lévêque fils, of Sur-et-Seine. Each of these exhibitors was awarded the grand prize, and it would certainly have been an invidious task to have discriminated between them either in the freshness or numbers of their flowers.

As to number, the space occupied by each is the same, and it would be difficult to calculate the numbers employed in furnishing those long wide borders with verdure and beauty. The plants ranged from 18 inches to 1 yard apart. To give English growers an idea of the vast numbers of Roses exhibited by these two growers, it seemed almost as if the two Pauls and the Cants had transferred the wealth of their nurseries to the gardens of the Trocadero for the time being. The Roses were mostly standards, from 2½ feet to 3 feet high, flanked with a few dwarf Chinas, Fairies, and Teas.

Hence whatever the future of standard Roses in Britain may be, and it can hardly be doubted that we are getting our Roses back to earth with amazing rapidity at home, yet the life and growth of standards are assured in France and elsewhere on the Continent for many years to come. The stems of these Roses are also much finer, freer from excrescences, and smaller in circumference than the average standard of English nurseries and private

gardens. So marked and general is this difference, that the stock can hardly be that of our common Dog Rose.

However this may be, I trust the two distinguished rosarians whose names have been mentioned in the above hurried notes may inform us on these points through THE GARDEN. It is certain that neither the smaller size nor greater smoothness of the Roses detract from their health nor their freedom of flowering. On the contrary, the latter was after all the most marked characteristic and the most distinguishing merit. So marked were these, that at first sight it was difficult to realise that this bold mass of verdure and of colour was created solely by Roses in the first week of October. Of course, something must be attributed to superior climate, more perhaps to the large preponderance of Teas and Noisettes, and yet more to the maiden soil and fostering culture, as much as to the selection and liberal repetition of the freest blooming sorts. But when all these are discounted for what they are worth, there are probably other—to us unknown—influences brought to bear on these Roses which French growers may be good enough to elucidate and explain through your pages. Let me not be misunderstood. I have seen as fine free-flowering groups of Tea and other Roses as those that now so effectively embellish the grounds of the Palace of the Trocadero, but never such masses in such freshness and with so much bloom so late in the season with hardly a fading leaf, nor a symptom of the arrival of winter. Should the winter prove severe, it would be interesting to hear of how these fresh, green and growing Roses on its threshold passed through, and how many hostages to climate they left on its frozen pathway. D. T. F.

GOOD AUTUMN ROSES OTHER THAN TEAS.

GENERAL JACQUEMINOT.—Although this is one of our oldest Hybrid Perpetual varieties, it is still one of the very best, as it has all the points that go to make a good Rose. With some it has the character of being a bad doer, but this, I think, is owing to unsuitable stocks or ungenerous treatment, as under either of these conditions it is very subject to red rust. Some plants of this on their own roots are now (October 15) flowering well, and the fragrance of the blooms seems as pure and good as it is in summer. They have also grown well and far more vigorously than others of the same kind which are budded on the Brier, and these have not shown any autumn flowers.

LA FRANCE.—This very free-flowering Rose is at present covered with buds in different stages of development; unfortunately, however, good autumn flowers of it are scarce, as they cannot stand the heavy rains and fogs that we have been having. The petals rot before the flowers can open, and so a great wealth of bloom is lost unless the plants can be protected, but now and then a really good flower opens.

MRS. BOSANQUET.—This is a good bedding Rose, for, in common with most of the Chinas, it flowers early and more or less all through the summer with a certainty of a really good autumn bloom. It strikes freely from cuttings put in the open border about this time of the year. The flowers are large, for a China, with flesh-coloured shell-like petals, and are borne in clusters.

GLOIRE DES ROSOMANES is another Rose which is certain to flower well in autumn, and as it is only semi-double it does not hold the wet like many others do, so all the flowers come to perfection. It rivals General Jacqueminot in colour and scent, and the buds are perfect in form.

Livermere Park.

J. C. TALLACK.

A novel way of striking Roses.—Recently I was conversing with a policeman who is a Rose enthusiast, and he told me he had strong bushes of some of the best Hybrid Perpetuals upon their own roots that he had rooted himself in a way quite new to me. Having obtained a suitable shoot or several of them, they were placed in an ordinary bottle which contained some water, and this bottle was hung upon the wall of the house in a sunny

position and there left, water being supplied to make up the deficiency caused by evaporation. In this water, which often became very warm from the heat of the sun, the cuttings remained, and after a short period they callused, when they were taken out and dibbled into pots in the ordinary way, the formation of the roots soon taking place. The above plan was claimed as expeditious, as the cuttings callused much sooner in water than they did in the soil. Has any reader of THE GARDEN either heard of or tried the plan? It is known that many things root readily in water, and Oleanders are frequently propagated in that way, whilst some Sedum spectabile that I have lately had in a cut state had rooted freely long before the flowers faded. With the Roses, if the cutting is once nicely callused, success is almost a certainty, and if this needed state can be brought about by immersion of the base in water, we then have a simple and valuable aid to Rose propagation, because it is much easier to preserve alive a cutting placed in water than it is one in the soil during its early stage.—A. H.

GARDEN FLORA.

PLATE 724.

GRIFFINIAS.

(WITH A COLOURED PLATE OF G. HYACINTHINA.*)

THE plant represented in the plate is what is popularly known as the blue Amaryllis. Strictly speaking, it is neither blue nor an Amaryllis, but it is near enough to satisfy reasonable people. Lindley figured it in his *Botanical Register* (t. 163) as *Amaryllis hyacinthina*, so that nurserymen who stick to the old name are not far out, although when they describe the plant as "new, of great pro-



Griffinia Blumenavia.

mise," &c., they are wrong. The genus *Griffinia* was created by Ker, and it contains about half-a-dozen species, all of which have been in cultivation at some time or other. Herbert appears to have known three of them over fifty years ago. Mr. Baker, in his excellent handbook of *Amaryllideæ*, recently published, describes seven species. They are all natives of Brazil, and they are nearly allied to *Cyrtanthus*, *Gastronema* and *Lycoris*. They are dis-

* Drawn for THE GARDEN by Miss Agnes Barr from flowers grown in De Graaf Bros.' nursery, Leyden, Holland. Lithographed and printed by Guillaume Severeys.



tinguished botanically by their wide, stalked, reticulated leaves, their many-flowered umbels and free flower-segments, the three upper of which are broader than the three lower. The structure of the flowers suggests the possibility of a cross between them and *Nerine* rather than with the *Hippeastrums*, as some appear to think.

CULTURE.—Griffinias are called stove plants. They do not always thrive under cultivation, but where they do they are strikingly ornamental. Herbert states that in Brazil they are buried 8 inches deep in strong loam, the scape and leaves rising to the height of 2 feet; whereas in our stoves they rot when potted in strong soil. He recommends light peat and sand for them. But they thrive when planted in fibrous loam three parts, leaf-mould one part, and a good sprinkling of silver sand. The bulbs should be partly buried and the pots carefully drained. During winter the plants rest and require no water. They should be placed on a dry shelf in a warm or intermediate house and kept there until about March, when growth recommences and the flower-spikes push up. The plants ought to be at their best in May, though they do not appear to flower at any definite time under cultivation. They may be made to flower in winter by forcing, but the probable result of this is the sickening of the bulbs. The leaves are deciduous, new ones being developed along with the flower-spikes, as in the *Hippeastrums*. The plants require moderate supplies of moisture, both at the root and overhead, and a light position. They do not ripen seeds under cultivation, but may be propagated by means of offsets from the bulbs.

This is the ordinary method of cultivation adopted for Griffinias. On the other hand, I am told by Mr. Gumbleton that Mr. Woodall, of Scarborough, is very successful with these plants by growing them in a greenhouse temperature all the year round. His plants produce strong, many-flowered spikes annually, and make exceptionally vigorous growth. It is possible that Griffinias have failed in many gardens because they have been grown in a stove instead of in a greenhouse. Perhaps Mr. Woodall would kindly let us have his experience in the cultivation of Griffinias.

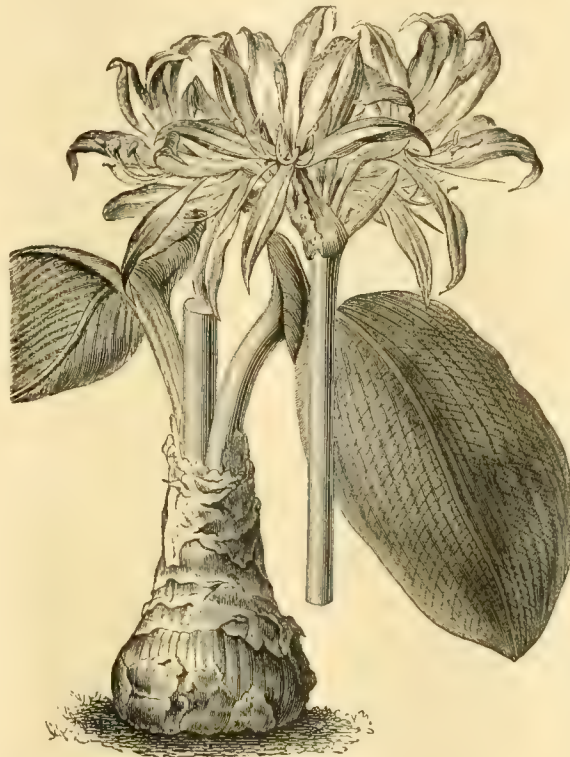
G. HYACINTHINA.—Bulb round, 2 inches to 3 inches in diameter, with a short neck; leaves 6 inches to 9 inches long, about one-third as broad, with a channelled stalk and an acute apex. Flower-spike from 1 foot to 2 feet high, slightly flattened, and bearing an umbel of from six to ten flowers, the character and colour of which are shown in the plate; the flowers last about a week.

G. BLUMENAVIA has bulbs similar to those of *G. hyacinthina*, but leaves only half as long. The flower-spike is less than a foot in length

and is usually eight-flowered, the flowers being 2 inches long and pale lilac, sometimes almost white. This plant was introduced by Dr. Blumenau in 1876 from Santa Catherina. It sometimes flowers in April, or even earlier.

G. ORNATA has large bulbs fully 4 inches in diameter, with a thick upright neck 4 inches long. The leaves are arching, 9 inches long, and the erect flower-scape is about 18 inches long. The umbel sometimes contains as many as twenty-four flowers, forming a head 8 inches through; each flower is about 3 inches long, and is coloured a delicate purplish-lilac, fading off to nearly white. Introduced from Rio in 1875 by Mr. Bull, and flowered by him in February.

G. DRYADES is distinguished by its firm leathery leaves, which are above a foot long, about half as broad, and bright green. The scape is 2 feet high and bears a head of about



Griffinia hyacinthina maxima.

ten flowers, which are 4 inches long and coloured purplish-lilac. This species was introduced by Mr. Wilson Saunders from South Brazil in 1868.

G. intermedia, **G. parviflora**, and **G. Liboniana** are small-flowered, and are scarcely worth describing here. W. W.

Glazed flower-pots.—I am glad to see attention called to these and to find those in use at Drumlanrig so well spoken of. At one time it was the general opinion that pots to be suitable for plant cultivation must be porous, but this opinion prevailed apparently without any reason, or was not formed from experience, and if so, the sooner gardeners' minds are disabused of the notion the better. In windows we often see plants in all sorts of vessels, and, taking into consideration the adverse circumstances under which the plants are placed, most of them show signs of rude health. This proves that porosity is not of such moment in the vessels for potting in as is generally supposed, and why should it be? as air in sufficient quantity for the roots can surely find its way through the surface of the soil, and it cannot be

required all down the sides of the pots. If these were glazed, how very much easier it would be to keep them clean, and what a time longer they would last, as glazing strengthens considerably, and if the pots cost a little more at first start, there would be a considerable saving in the end, not only in the durability, but in labour of washing, &c. Perhaps our potters who make garden ware will turn their attention to what has been said and give us all a chance of trying some of these pots.—S. D.

FRUIT GARDEN.

MELONS.

So much has been written from time to time on the subject of Melon culture that it seems almost superfluous to return to it. There is, however, not in all cases the certainty of securing a good crop, and one often hears the remark that the Melon is one of the most uncertain of fruits, and that a thoroughly good crop is the exception instead of the rule. Although the failures or partial failures of this crop may doubtless be attributed to various causes, I think they may often be traced to badly constructed houses, where the plants are at the outset so far removed from the glass as to cause the production of weak spindly growth, by no means suitable for securing full, even crops of fruit. Having a considerable demand for this particular fruit, I have for several seasons devoted to its culture two lean-to pits of seven lights each. Two crops are annually taken from each pit, and as each plant (one to a light) has an average of four fruits, I am able to cut rather over 100 fruits in the season extending from the end of May to the end of September. A narrow path just wide enough for working purposes runs along at the back inside the pits, with a 3-foot bed for the plants. For the earlier crops in either pit the usual mixture of manure and leaves built up to within 18 inches of the glass affords a nice bottom-heat (all we have) for starting the plants. When the necessary soil for planting is placed on the top of this bed the collar of the plant when in position is only about 1 foot from the glass, and the plants from the outset make fine sturdy growth. I do not believe in too great a night heat for Melons; 65° or even a trifle lower is a good minimum. Under these circumstances the foliage when well developed is naturally nearly all close up to the glass, and a very light shading of tiffany is sometimes necessary, but this may always be removed as soon as the leaves are dry, for directly this happens the plants are well able to stand against the rays of even a powerful sun. I do not think any particular soil is necessary for the successful culture of Melons. Ours are always grown (the local loam being very indifferent) in road sidings, a heap of which is carted in each winter, and which having been turned two or three times comes in admirably not only for Melons, but also for Tomatoes, Cucumbers, and the common greenhouse plants. I may mention that the bottom bed is not removed at all for the second batch of plants; all that I find necessary is to skim off a portion of the old soil, level down the remainder and replace with the required amount of fresh compost after giving the old soil, brick-work, lights, &c., a thorough scalding with boiling water to remove all trace of insect pests. The system of training adopted is to pinch out the top when the plant has attained a height of 6 inches and take up four or five leaders to each plant. I was a little bothered with canker the first season after adopting this particular method of culture, but the cause fortunately was soon apparent. The plants are kept within close bounds, very little more than 3 feet headway from where they are pinched, and being in very robust health they resented too close pinching and stopping. I have therefore left some shoots at each stopping to allow free working for the enormous amount of sap that must naturally be pumped up into the leaders, and I have not been bothered with canker since, except in a very slight degree towards the end of the season with a cold wet September. Hero of Lockinge is probably the

best all-round Melon in cultivation. It is, at any rate, the only reliable variety for our purpose, our command of heat not being great. For early spring work, this and William Tillery are grown for succession. The Hero is also a capital keeper, and is one of the few Melons which if cut at a half ripe stage will ripen up in the vinery or fruit room in a most satisfactory manner. I think the greatest caution should be shown in certificating new Melons. We have already so many first-class varieties that only something unique in point of flavour combined with good growing and setting qualities should pass muster with the committee.

Claremont.

E. BURRELL.

THE PLANTING OF FRUIT TREES.

PREPARATION OF THE SOIL.

NOTWITHSTANDING that we as a nation have been planting fruit trees more or less for five hundred years, it is still doubtful whether much of our preparation does not do more good than harm. Deep trenching and heavy manuring, for example, however useful for the cultivation of perfect vegetables, may hinder rather than help perfect fruit culture. And almost the same may be said of drainage on light loam and on the chalk or other porous subsoils. Our average rainfall is assuredly not excessive for supplying the wants of such hardy trees as Apples, Pears, Plums, Cherries, or for that matter Peaches, Nectarines, and Apricots. On the contrary, in some of the finest instances of abnormal successes in the cultivation of these semi-tropical fruits in the open air, the natural rainfall has not seldom been multiplied several fold. It is not the quantity of water that injures, but the water that becomes stagnant for lack of a rapid and ready exit. Given this, either through the natural porosity of the soil and underlying strata, or by means of artificial drains, all will be well.

Then as to the vexed question of depth of tilth, its importance has been greatly exaggerated from the era of 4-feet borders till now, when we have risen almost as near again to the surface. And even to-day not a few cultivators are in serious doubt whether we have reached the best minimum at 2 feet from the surface. And yet borders 2 feet deep are recommended in the last most authoritative utterances of our most learned societies and distinguished cultivators. But why 2 feet? or to put it otherwise, why should deeper tilth be needed to grow fruit than to grow timber? It may be said the fruit is an addition. With more truth it may be asserted the timber is an addition. Take two familiar examples, the Oak and the Beech, and note what a gross produce of acorns and mast they yield, as well as the amount of timber they produce in a term of years. The gross weight of these products is far greater than the gross weight of the fruit and timber of such fruit trees as Apples, Pears, Plums, Cherries, Peaches, &c.

Of course it may be contended that the productive force, the manufacturing capacities of the trees vary. They do; but making due allowance for this, it seems marvellous that forest trees produce so much on shallow soils, while so many fruit trees produce so little on deep ones. It staggers one to see such ponderous masses of Oak, Beech, Elm, or other timber towering up from the surface of soils so thin and poor, that they seldom exceed an average depth of from 3 inches to 6 inches. Perhaps it is hardly an exaggeration to add that the mean depth of our home plantations, parks, and forests that produce our native timber hardly exceeds 6 inches. And yet these trees have their annual crops of fruits, seeds, as well as their un-failing yield of timber.

These weighty facts may well make us pause before trenching our fairly good soils in order to realise permanent and profitable crops of hardy fruits. It is by no means obvious, on the face of it, why soils that grow Oaks and Beeches so well should not grow Apples and Pears equally successfully. Or even to choose plants of smaller stature, no one has ever yet advanced good reasons to show cause why soils that grow fine crops of wheat, Mangold, and Clover should not

also grow good Apples and Pears without either deeper trenching or further manuring. Fruit trees have been forced into bulk with manure and trenching, and further on forced into fertility or otherwise by the knife on their heads or their roots. Most of this is wholly unnatural, and consequently altogether injurious. With a little more time fertility would have been surely attained with the certainty of its remaining permanent, as in the case of our forest trees. Have fruit-growers generally observed how seldom these miss an annual increase of timber or a crop of seeds or fruits?

On many of our most fertile arable lands the tilth already averages from 8 inches to a foot. Planters this autumn might plant at least a portion of their fruit trees on these without any further or deeper preparation, and note the results. This would greatly reduce the first cost of planting, and should in any case the trees show signs of distress or of suffering for lack of food, nothing could be easier than to feed the roots on the surface, the safest, swiftest, and most economical place to feed them. Having, in fact, established the roots in shallow tilths—that is the warmest, most genial, and readiest accessible places—nothing can be easier than to increase their food supplies to any requisite extent through liberal liquid and solid manurial dressings on the surface.

But it must not be too readily assumed that such extra feeding is needful. Timber trees, as a rule, have none such, and yet their annual and ultimate products are prodigious. It is therefore quite probable that a foot deep border of good soil may keep Apples, Pears, Cherries, Plums in good health and full bearing for a quarter or half a century. Beyond that no fruit cultivator need trouble in this age of rapid propagation and advancing improvement. Few will care to deny that while excessively poor soils may have killed or starved thousands of hardy fruit trees, fat, deep borders have killed tens of thousands.

Some of the most fruitful orchards ever seen by me were planted on the steep sides of valleys with a soil averaging from 8 inches to 10 inches in depth. Time made it shallower rather than deeper, as the hill-sides were so steep that sediment was constantly being washed off the orchard surface to the side of the stream at the base. The trees, however, were remarkably healthy, the wood of medium strength, and the crops exceptionally heavy. Within a few miles of these orchards, on the flat were others in which sterility abounded, and canker did most of the pruning. Nothing can be simpler than top dressing either with loam or manure, for though stimulants are dangerous under or among the roots of fruit-bearing trees, they may prove exceedingly serviceable on the surface alike as a cooling mulch and as a sweet and nourishing food to increase the size and improve the quality of the fruits. Finally, plant food on the surface is at once helpful, strengthening and safe, but under or among the roots in a deep tilth it is fraught with danger and pregnant with disease.

D. T. F.

Stewing Pears.—It is surprising how stewing Pears are neglected, as one seldom sees a young tree planted, although the old ones continue year after year to give good crops without any trouble, for, as a rule, they are left to take care of themselves, and even in this condition surprise us by the size and quality of their fruits. The one great point to secure in fruits of this kind is size; therefore the trees ought to receive good culture, for, talk as we may about the season being good or bad, the trees cannot perfect the finest fruits if the roots never get any rich food, or the tops any attention in the way of pruning. I have lately seen many fine old trees in this locality loaded with fruit, which, although as hard as iron, sells readily at from 5s. to 7s. per bushel to sell again. As a good sized tree will produce several bushels, these Pears will certainly pay. They succeed well as tall orchard trees in Grass orchards; in fact some kinds do better in those than in any other way; but some of them deserve a wall and repay the use of it better than some choicer kinds of fruits. Samples of Uvedale's St. Germain when well grown will realise

a high price, as fruiterers buy them for their windows, as they are not only handsome, but last a long time in good condition, and always sell readily when other fruits get scarce. For the orchard, Verulam or Black Worcester is one of the best that can be planted, and Catillac and Bellissime d'Hiver are the best for garden culture, as they fruit freely in a younger state than some other kinds, and the trees may be kept of moderate size for many years if grafted on the Quince.—J. G., *Hants.*

REDUCTION OF VARIETIES OF APPLES.

I FEAR the aspirations given utterance to by some writers in favour of a large reduction of our very redundant Apple lists are not likely to meet with acceptance. If Mr. Coleman or any other fruitist anxious to clip the wings of the Apple lists could check the rage for new or so-called new varieties, then some chance might present itself of reducing our Apple lists. But just as rapidly as conferences or other bodies of excision lop off the pronounced useless sorts and shorten the list somewhat, so assuredly will and do the nurserymen pile others on the top, probably faster than others are eliminated. Then it is one thing for a conference to run a pen figuratively through so many names and say, "These are not required," for in spite of that act the trees remain, the sorts remain, not a trader will refrain from growing them, not a grower of the kinds will grub up his trees in consequence if they are fairly productive, and yet all the while the nurserymen are piling Ossa on Pelion, for they are adding a dozen or a score of new or resuscitated kinds to our lists from year to year. The weakness of the decisions of Apple conferences is found in the fact that they have no legislative force. One may excise and another may elect, but no one can compel. How truly these traders are the culprits in this matter is evident enough. I visited the very extensive and splendid fruit nursery which the Messrs. Veitch and Sons have at Langley, near Slough, the other day. Going over the Apples, I found at least a score (probably there were more) varieties I had previously never heard of, and a good many also which have become familiar to us only within the past two or three years. The firm in gathering into the Langley net these diverse sorts from the ends of the earth almost, call it enterprise. I do not know what those anxious to cut down the redundant Apple lists of to-day may think, but I imagine they would regard this proceeding with anything but complacency. Worse still, I came across numerous small trees fruiting finely of those varieties specially condemned last year, I think, as worthless, Court of Wick and Downton Pippin, which does seem to be literally and obstinately flying in the face of the allied wisdom of the conference committee, notwithstanding the fact that at Langley the kinds are carrying capital crops of delicious fruits, the ideal of what dessert Apples should be. I anticipate a visit to any fruit nursery in the kingdom will reveal the same utter disregard of the behests of the Apple conference, and an anxiety to obtain every good, or apparently good, new or unknown Apple that may come in the way. Mr. Coleman, and those working with him, may console themselves with the reflection that if they cannot enforce they may at least advise, and if the foolish world will still pay no attention, then their hands at least are free from stain. It is, perhaps, particularly unfortunate for the cutting-down argument that some Apples reputedly useless have this blank season fruited freely when so many kinds have been barren. That fact serves to console some growers for seasons of unfruitfulness, because the fruiting when others of reputed quality fail is an act which like to charity may be said to cover many sins. Mother Apple on a big tree has for instance given me this year a splendid crop, the best since it was planted—twenty years ago. It was worth waiting for, and the tree may now live as long as I shall.

A. D.

Fruit tree raising in Scotland.—While in Scotland lately I saw that the raising of fruit trees was largely on the increase. It is now being more

regarded as a commercial industry than formerly, and some nurserymen, too, are giving the raising of fruit trees unwonted attention, and the striking exhibits of fruit they make at the principal shows, as well as the numbers of healthy young trees they can show to all who inspect the nurseries, cannot fail to make fruit growing popular. In the nurseries of one Edinburgh firm fruit trees are now raised to an extent unheard of in my first remembrance of them. All kinds receive attention. I was assured the demand is annually increasing. The young trees in the nursery in question are cultivated in the best style, and good crops are secured from them in such a young state, that those who plant them are encouraged and induced to extend their culture.—J. MUIR.

Strawberry Monseigneur Fournier.—This wonderful variety is not new. It was raised in Nantes many years ago by the celebrated amateur, M. Boisselot. It is, however, very scarce, the stock being in the hands of two or three market gardeners, who will not part with any plants on account of the high returns they get every year from the crop. It is the most distinct of all the large-fruited Strawberries; the leaves are few, large, dark green, stalks purplish, fruit generally conical, sometimes crested, very large, black-maroon colour, flesh very dark red, juicy and finely flavoured. The fruit finds a ready sale and fetches two or three times the price of that of other varieties. Runners are produced very sparingly. It is a second early variety and I have not yet tried it for forcing. Lucie (Boisselot) is also largely grown here. It is the most prolific and the latest of all the large-fruited Strawberries.—D. GUIHENEUF, *Nantes*.

Cordon Pears under glass.—More than once I have strongly advised the cultivation of choice Pears under glass, especially by horticulturists residing in localities unfavourable to the setting or perfect maturation of the fruit. Whether my remarks fell upon rich or stony ground, I have no means of judging, but this ignorance does not alter the fact that my notes were based upon more than one northern grower's perfect success. Another skilful cultivator, who does everything well, has been added to my list, as I gather from a short paragraph written by Mr. Muir (p. 348) that Mr. Thomson, of Drumlanrig, is not above giving cordon toys a place under glass. Orchard house trees, we have so often been told, will never lower the price of fruit in the market, and so much the better, as it is already too low to pay the grower. But Mr. Thomson's trees, like those which I have recommended, are not ordinary pot pets, requiring water twice a day in hot weather; they are true cordons planted out in the borders in his colossal Peach house; they never miss a crop; each fruit, exceeding the normal size, is perfect in appearance and quality, his selection, as one may readily suppose, including the cream of the choice dessert varieties. Cordons planted 2 feet apart and carrying forty-five fruits each must have presented a grand sight to the unfortunate southern growers who had the good fortune to see them, and some, let us hope, have returned home quite determined to follow the success, if not the advice of those who know the culture of Pears under glass is profitable. The northerners no doubt grow these fine Pears for home use, but, assuming that they may wish to sell to the middleman, such fruits weighing from 14 ozs. to 20 ozs. each should be worth 6d. each or nothing. I do not consider Baurré Diel one of our best dessert Pears, but when grown under glass its finest quality is brought out, independently of the fact that any gentleman may feel proud of the post of carving a single Pear that will give a quarter of a pound each to five persons. Winter Nells, Mr. Thomson's best variety, Josephine de Malines, Knight's Monarch, Glou Morcean, Doyenné du Comice, Baurré Superfin, Thompson's Pear, and Bergamote d'Esperen are equally prolific and so good, that those inclined to invest may safely devote a house to each variety. Their culture is simple enough, the principal points being an abundance of light, plenty of fresh air, good loamy soil on ample drainage, rich mulching, and copious supplies of water. Gentle fire-heat when the trees

are in flower is a great help, also when the fruit in unfavourable seasons is approaching ripeness. The best stock is the Quince, upon which the grafts should be attached very low, otherwise the trees must be planted injuriously deep to ensure the emission of roots from the base of the scion.—W. C.

WORK IN FRUIT HOUSES.

EARLY PEACHES.

ALTHOUGH the stripping of the earliest houses is not absolutely necessary, the wood being thoroughly ripe and the buds forward, many, I have no doubt, will have had the roof lights taken in for painting and repairs, a very important operation in garden economy. Every part of the inside borders having received a thorough soaking of soft rain water and the trees being quite leafless, the sooner the lights are restored the better, especially where the final pruning remains unfinished and an early start is contemplated. A good start with everything clean and in thorough order being more than half the battle, the trees in the first instance should be detached and allowed to fall away from the trellis. The latter may then be washed, or, better still, painted, particularly if red spider has been troublesome. The remainder of the structure, including the brickwork, must be cleansed, painted, and limewashed, and last, but not least, the heating apparatus must be put into good working order. Summer pruning having now become so general, knifework will consist merely of the removal of any faulty shoots overlooked when the leaves were upon them, a general dressing over, and, possibly in the old school, a little shortening. The trees, as a matter of course, will require most careful washing certainly once, and most likely twice where brown scale has gained a foothold. The buds, as I have remarked, being unusually prominent, the washing of the young shoots is an operation which should not be performed in a careless or hurried manner, but, on the contrary, provided with tepid soapy water and a closely docked paint brush, the operator, taking the shoots one by one upon the palm of his left hand, with the right should work his brush constantly and repeatedly outwards. In this way every scale upon the young wood may be loosened, a condition from which it cannot recover. In dealing with aged stems and branches, hard scrubbing brushes may be plied pretty freely, and then those who feel so disposed may apply their favourite dressing. Stiff loam, cow manure, a little soft soap, sulphur, and tobacco water go into the pot where the old-fashioned paint is adhered to; but Gishurst compound, 4 ozs. to 6 ozs. to the gallon of water, is quickly prepared, and most certainly it answers every purpose not only in the Peach house, but also in the vinery and Cherry house. A good lathering wash of Gishurst, the weakest strength will not hurt the blossom buds, but the paint should be confined to the old stems and branches. When the trees are quite dry, the main branches must be nicely balanced and laid quite straight, when tying of the fruit-bearing shoots may be pursued at leisure. In the performance of this part of the work we sometimes see the young shoots made as tight and straight as fiddle strings by pieces of matting attached to their points, by which they are strained to the wire next above them. The trees when finished no doubt look very nice, but it is a mechanical operation which cannot be too strongly condemned, for, independently of the unnatural strain placed upon the sap vessels the matting cuts the points, when gumming or the loss of the growth beyond is sure to follow. When tying is finished the house cannot be kept too cool and airy until the time arrives for starting; hence the advisability of excluding all pot plants which require fire-heat in frosty or damp weather.

Succession houses.—All pruning and cleansing operations in these must be followed up as opportunity serves, especially when the men cannot do much in the open air during wet or inclement weather. If any fresh trees of extra large size have been introduced they may be cleansed, thinned and the main branches trained, but tying in in detail and all shortening back should be deferred until

the buds begin to swell and new roots are plentiful and active. As each house is put into working order the border must be pointed up, watered if necessary, and top-dressed with fresh compost. Pure maiden loam, not too light, two-thirds, and old lime rubble one-third, make an excellent compost for vigorous young trees more likely to grow strong than weak, whilst for others of greater age a little bone dust may be added. Aged trees, again, which have been enervated by over or heavy cropping may be still more liberally dealt with, a good mulch of animal manure in some cases being absolutely necessary. Of two evils, however, it is better to err on the frugal side, as after the fruit is set it is much easier to feed than restrain too much vigour.

Late houses.—If root-lifting, root-pruning, or renovation remain in arrear, no time should be lost in pushing these operations forward. The work, if possible, should be finished before the leaves fall, but, better late than never, the roots may still be disturbed and fresh trees may be introduced, as there will be no attempt at forcing throughout the season. Indeed so accommodating is the Peach, that trees may be introduced with every chance of a good crop, although perhaps not quite so fine, when the buds are swelling. This, I say, may be done, but if possible all root-work should be performed early in the autumn. Weak and aged trees again may often be restored to a healthy and fruitful condition in the following manner. With steel forks remove all the surface soil quite down to the roots, water well with diluted liquid, then replace the old with fresh compost consisting of good loam, old lime rubble and bone dust. Make very firm by ramming; do not repeat the watering, but mulch well with short stable manure or old cow manure.

CHERRIES.

If the roof-lights are still in the paint room, no time should be lost in restoring them to their proper position, not that the trees will be at all injured by exposure to moderate frost, but days being short and rough weather at hand, this, like the early Peach house, will then offer comfortable employment when the elements are unpropitious. All trained trees should be detached, pruned, and washed, and when the house has been cleansed the work of tying in may be proceeded with. The painting of the young shoots is quite unnecessary, but black fly being troublesome, the spurs should be most carefully dressed with Gishurst or some other insecticide. Cherries, again, being subject to gumming, all faulty parts of the strongest branches and main stems should be neatly trimmed with a sharp, fine-bladed knife down to the healthy wood, and well filled up with a paste of stiff loam and fresh cow manure. The healing properties of this material are very great, and, provided it is applied in time, many indispensable branches may be preserved where otherwise they would require removal. This, of course, is what may be termed a local remedy for a troublesome disease, which may break out again where root-lifting and relaying in pure calcareous loam are neglected. Some varieties of Cherries are more subject than others to gumming, the principal cause being a too generous diet, especially of manure in deep cold borders. When the training of the trees is finished, the ventilators and doors may be kept wide open in mild weather, and on no account must tender plants be introduced when they are resting. The most suitable plant is the Strawberry, and this being subject to aphid, a plunge bath in strong soapsuds should always precede its introduction.

FIGS.

Forced trees having had such a fine time for ripening their wood and roots, they will now be in excellent condition for starting about the end of November, that is, where ripe fruit is wanted in April. Pot trees, as a rule, are most in favour, and for very early work they may be preferable to permanent trees trained upon trellises—not that the crops they produce are heavier, earlier, or better, but being portable, they can be moved or changed in the event of failure. Trees for starting at the time I have named must be thoroughly ripe, the spur-like points

well furnished with embryo figlets the size of small Peas, and they must be fairly root-bound, a condition which can be secured by reducing and repotting or giving a small shift very early in the autumn. If these points of quality are not present a very early start will be no gain, but a decided loss. Assuming, then, that a set of pot trees are still standing or lying at the foot of a south wall, where they have received very little water since the end of September, they should be taken into the potting shed, where the pots may be well scrubbed and the crocks examined. Every particle of the wood, young and old, must then be carefully washed with tepid soapy water, care being taken that the figlets are not scratched by the bristles of the brushes. If the presence of worms is suspected, a soaking of lime-water will dislodge them, but otherwise, after being well rammed with the potting-stick, the trees may remain without water until they are placed in position. Bottom-heat being an important factor, the pits should be deep enough to allow for the introduction of 2 feet of moist fermenting material, consisting of fresh harvested Oak or Beech leaves and a little stable manure. Light being equally essential, the heads must be kept well up to the glass by hoisting each pot upon a solid dry brick pedestal. Upon these the trees should now be placed without delay, moderately and repeatedly watered to get the balls into good condition by the time the fermenting material is introduced and the pit is closed for starting.

Anyone wishing to commence forcing may secure good pot trees at any of the leading nurseries, and considering that they will go on improving for a lifetime, I question if he can make a better investment.

Succession houses containing trees growing in confined borders or cubes of compost, with convenience for packing with fermenting leaves, should be cleansed and put in thorough working order. If carefully pruned immediately after the second crop was gathered, the trees will require very little if any cutting. The branches, nevertheless, must be let down and thoroughly washed preliminary to tying in again. Being so subject to mealy bug and two species of scale, either of the preceding being present, the wash should be pretty strong and once or twice repeated. If the wood is young and fresh, soap water or Gishurst compound 6 ozs. to the gallon should clear the trees; if old, rough in the bark and furnished with dead snags in which the pith has perished, all suspicious parts offering security to the enemy may be coated and stopped with pure Gishurst, or the whole of the old stems and branches may be painted with the gas tar mixture. Opinions differ as to the strength, but being very powerful, I may repeat that half a pint of tar to a peck of finely sifted loam, worked into a paste and thinned to the consistency of paint by the addition of hot water, will kill any insect and the trees will not suffer. When dressed and trained the house may be kept dry and cool until the time arrives for forcing. If the pot trees in front are going on well and succession is the object, a month may intervene, and then the roots must be thoroughly moistened prior to the introduction of the fermenting material.

Cold houses.—One or two bad seasons having told adversely upon open-air trees, cold houses or wall cases deserve extended attention. Trees in these structures do not give more than one full crop of fruit, but the introduction of 4-inch flow and return pipes will secure two, and then suitable quarters will be at command for Chrysanthemums from the middle of October up to January. The way to success in the management of these trees is annual root-pruning, the use of sound, but not over rich compost, thin training and roasting with sun-heat in the autumn. Walls already furnished with healthy trees may be cased in, or trees of great age may be lifted and removed with impunity. Lacking fire-heat, Fig cases cannot be kept too dry in winter, and then in order to make security quite certain the trees should be loosened and drawn down from the glass on the approach of severe weather. Brown Turkey is the best all-round variety. All the *Ischias* are good, and so is Negro

Largo. In fact any of the best sorts which do not ripen very late are well adapted for cold houses and wall cases.

WORK AMONGST HARDY FRUITS.

PLANTING.—Seldom have we had a finer autumn for planting, the heaviest soils having been dry enough to stand any amount of moving and treading without becoming adhesive. The trees, too, are well ripened, and although still carrying their foliage, they have been in the best possible condition for moving throughout the whole of the month of October. A great number of planters, no doubt, have taken time by the forelock, but those who were not prepared should push on to the end, as trees planted before the middle of November give very little trouble the following season. When trees in full leaf are transplanted they should be staked, mulched, and watered, when, if set with flower-buds, they will swell off fine fruit next autumn. Maidens, bushes, pyramids, and wall trees, of course, come first; orchard standards follow after. These, however, should not be kept out of the ground a day longer than is absolutely necessary, as it is better to heel them in until February than plant when the soil is wet and cold in December and January.

PRUNING may now be commenced and pushed forward with all speed, especially where the ground is heavy and liable to injury by treading in wet weather. Bush and wall Currants should be taken in hand first, and as these are so subject to caterpillar, the leaves and prunings should be cleared away and burned preparatory to the removal of the surface soil, syringing with soapsuds, and top-dressing.

PLUMS AND CHERRIES against walls also may be pruned and cleansed in order that the heavy part of the nailing in may be completed before we are overtaken by severe weather. A large amount of this chilling work must be performed in bad weather in the best regulated gardens, but a little forethought in arranging operations not unfrequently might tend to mutual advantage, as all gardeners must know work proceeds slowly and imperfectly when their assistants are too cold to feel the blow of a hammer on their frosted fingers. Old trees getting too long in the spur should be rather severely cut in, not only for the sake of appearance, but also to let in sun and air, as it is well known that these weak elongated spurs prevent the sun from striking the walls, a very important matter, whilst the fruit they produce is small, faulty in colour, and comparatively flavourless. Neglected trees cannot always be restored to respectability in one year, but the operation of cutting back may be performed by degrees, as there exists hardly a spur without a bud near its base, the best of all proofs that Nature is ready to lend her willing hand to the pruner. To these, then, all old spurs should be pruned, and although the crop the following year may be light, the quality will be improved, as the walls will absorb a great deal of sun-heat, and insects in their stronghold will be discomfited. Plums and Cherries should be completely detached, well washed and nailed in anew, or, lacking this attention, the trees and walls should be copiously drenched with soapsuds several times during the winter.

APRICOTS.—Years ago the pruning and nailing of Apricots were deferred until after the turn of the season, but being extremely frosty, weather often delayed the work until the sap commenced flowing and the buds were swelling, when close pruning was succeeded by bleeding. To escape this danger independently of getting work pushed forward, the best time to prune is just when the leaves are falling, for then the wounds heal before the trees are overtaken by severe weather. Prompt training is not absolutely necessary, but if possible the trees should be detached and washed and the walls thoroughly cleansed early in the autumn. Having so often recommended paints and washes both for trees and old walls, I will not repeat, but refer readers back to papers on the winter management of Peach trees. Apricots, like Plums and Cherries, soon run away into long untidy spurs,

whose principal use is the harbour of insects. These should be cut back to the single bud nearest the base so far as it can be found each winter, or in very long neglected trees the whole of the spurs, save one or two near the extremity of each leading branch, which should be left to draw the sap, the whole of them may be cut away at once, when a fresh set close at home will start the following season.

RASPBERRIES may be newly staked, thinned, and tied in, but not shortened, otherwise severe frost following snow and rain may get into the pith and damage the canes certainly down to the first bud, when spring shortening will be necessary. Although Raspberries do not often come in for cleansing, a wash with soapsuds may check the grub where this pest is troublesome. Top-dress well with light rich manure and keep the ground free from weeds, but forbid the use of fork or spade in the plantation. W. C.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

— Briefly touching upon your inquiries as to the Peach crops, I think if more care were taken in the selection of the stocks on which to graft Peaches and Apricots, we should see greater and better crops of these valuable fruits. Why not raise more seedlings and graft the Peaches and Apricots on their own stocks? The cause of the poor-ness of flavour in these fruits is, I think, often due to their being picked before they reach their maturity and therefore they lack their natural flavour. This evil can hardly be avoided in market fruit, as ripe fruit gets damaged in transmission, and consequently fails to attract the eye of the buyer.—WM. WHALLEY, *Addington Park, Croydon, Surrey.*

— Opinions will probably vary as to flavour in different varieties, soil and situation having much to do with it, but my selection would be Early York, Royal George, Crimson Galande, Princess of Wales, Magdala, Noblesse, Grosse Mignonne, Exquisite, A Bec, Barrington, and Salway. I do not think the newer varieties are, as a rule, equal to the old standard sorts, but some are very valuable on account of their extreme earliness, thus lengthening the outdoor Peach season considerably. I think there can be no doubt that the practice of gathering Peaches for market before becoming ripe detracts a good deal from the fine flavour of fruit gathered ripe from the tree, and it is equally certain that much of the early forced fruit is ripened in too close an atmosphere, plenty of air being indispensable to good flavour. This is not a good district for outdoor Peach culture, it being quite impossible to succeed on open walls without glass copings. With the aid of a good coping, however, good crops of useful fruit may be secured in ordinary seasons.—WM. POPE, *Highclere, Berks.*

— The twelve I think best are Alexander (very good and early, finer in flavour, and earlier than Early Beatrice), Hale's Early, Dagmar, Dymond, Crimson Galande, Magdalen, Royal George, Grosse Mignonne, Noblesse, Violette Hâtive, Stirling Castle, and Princess of Wales. I have not found much improvement in the flavour of the new kinds. Dagmar is a little earlier than Royal George, and

of a finer colour and the flavour is good. I prefer Princess of Wales to Barrington for a late Peach. Barrington is often inferior in flavour. The above twelve will give a succession. I think one of the causes of inferior quality arises from too hard forcing. Given good drainage, a good border, and plenty of water with gentle forcing, I believe Peaches would be much better in flavour. I leave a little top air on always night and day, and when commencing to colour a little also at the front. Peaches without protection in the shape of glass coping or Peach case will not do much in this district, the leaves are so apt to get blistered by the east winds in spring that the growth is stopped for the season, and the trees often present a sickly appearance. I have a *Violette Hâtive* on a south wall under coping doing very well, but without it the tree makes very weak wood.—F. CLATWORTHY, *Kiddington Hall Gardens, Woodstock.*

—Peaches are not grown in the open air here. The varieties mostly prized for flavour are *Noblesse*, *Stirling Castle*, and *Royal George*. Our trees here are all worked on the Plum, and have been planted well nigh forty years, and still continue vigorous and fruitful. When in England I had some trees worked on the Peach which bore excellent crops the third year. They were originally planted 15 feet apart, and allowed to extend without the use of the knife. The second year, early in November I had them lifted and placed 20 feet apart. When taken up, the roots were simply a mass of fibres, the result the following season being a good crop of fruit. My opinion at the time was that trees worked on the Peach were much more easily brought into bearing condition than those grafted on the Plum. The length of time that trees so worked remain in a good healthy bearing condition is a question which I hope some of your able correspondents will answer.—A. DEWAR, *Falkland Palace Gardens, Fife.*

—During my long experience I have not found anything better for quality and general excellence than *Royal George*, *Noblesse*, *Violette Hâtive*, *Early York*, and *Walburton Admirable*. Dr. Hogg is very good, but more liable to blister than any other variety I know. Most of the new Peaches are not equal in quality to those named. Princesses *Louise* and *Beatrice* have nothing to recommend them beyond being a very few days earlier than the old standard sorts, and are somewhat suspiciously like the old *Early Ann*. *Early Rivers*, from its almost invariable tendency to come with split stones, I consider useless. There are doubtless many good varieties among the new sorts of Peaches, but my impression is that these are far inferior to the old ones. Many years ago the *Mussel Plum* was generally used as a stock, and I find trees worked on that seldom produce suckers; whereas the stock that seems to be in use at present produces them too freely, to the detriment of the tree. I should attribute the inferior quality of Peaches sent to market to the necessity of gathering them before being quite ripe.—JAMES BELL, *Strathfieldsaye, Hants.*

—Amongst old varieties of Peaches *Noblesse* and *Royal George* are two of the best flavoured. The latest varieties rarely have a high flavour, although in point of appearance the fruit is generally fine. *Hale's Early* was our favourite in the open amongst newer sorts for some years, but it has been superseded by *Rivers' Alexander*. This variety is of medium size, exceedingly bright in colour, and the flavour is undoubtedly first-rate. This is one strong point in its favour; the other is that it is uncommonly early, as I gathered ripe fruit of it from an open south wall on July 20. In my opinion it is the best early open-air Peach. *Hale's Early* is a fine open-air Peach in all respects, only it is slightly deficient in flavour. If the same amount of attention was given to Peaches in the open as they receive under glass, their good properties would astonish their cultivators; and I am of opinion that Peaches in the open air do not receive the attention they merit.—J. MUIR, *Margam, S. Wales.*

—Peaches are not grown in the open air; under glass good crops all through. *Early Beatrice* and *Early Rivers* are considered to be of indifferent flavour; the former, in fact, is not worth room

under glass. The best flavoured Peaches are *Noblesse*, *Violette Hâtive*, *Dymond*, *Early Grosse Mignonne*, *Royal George*, and *Lord Palmerston*. I prefer free Peach stocks for indoor cultivation, with regular attention at the roots. The cause of so many complaints as to the flavour of Peaches bought in the market is largely attributed to premature gathering for the convenience of packing.—J. JAKES, *Waddesdon, Bucks.*

—The crop of Peaches outside is not an average one; the trees did not ripen their wood last year, and in many places the young wood was injured by the frost in the winter. Apricots do not do well here or in this neighbourhood. The trees are subject to gumming and are short lived. The best Peaches for flavour here are *Alexandra Noblesse*, and *Hale's Early*. The cause of inferior flavour in market Peaches is chiefly through the fruit being gathered before it is ripe, which must be done where it has to be sent any distance.—W. MOWBRAY, *Fulmer, Bucks.*

KITCHEN GARDEN.

CELERIAC.

THERE are very few experienced gardeners who have not in the course of their career grown a breadth of *Celeriac* or Turnip-rooted Celery, but how many of them can truthfully assert that they were successful in persuading the cooks to make good use of the produce. Owing probably to the leading cookery books omitting all mention of this vegetable it is thought of little value; whereas, if properly treated it forms a really good dish, and is suitable for either mixing in a salad or for flavouring soups. Especially ought it to be grown and utilised in places the owners of which insist upon having, or are well pleased if they obtain, a good variety of vegetables daily. It would really appear, however, that many more are becoming alive to this fact, for I have met with *Celeriac* in a



Apple-shaped *Celeriac* (one-sixth natural size).

greater number of gardens than ever before in one season, and there were more inquiries for plants from a distance than usual. We raised several hundred plants each of three distinct varieties, and all were either planted out or sent to those who wanted them. In common with Celery, *Celeriac* is within easy reach of all classes, the plants being raised and prepared for the open in much the same manner, while the only difference in subsequent treatment is that *Celeriac* should be grown on the level and not in trenches. It is not extra strong top growth that is needed, but rather fine, solid Turnip shaped bulbs, and these form the most surely when the tops and collar of the plants are well exposed to the light and air. Ours were

planted about 15 inches apart each way in succession to early Cauliflowers, and without any additional manuring or digging, the surface having been merely heavily hoed and cleaned. This firm, yet comparatively rich root-run is best calculated to promote a sturdy top-growth and the formation of better bulbs than is the case with the plants on looser, newly manured ground. In addition to being kept well supplied with water and the ground about them hoed occasionally, no other trouble is necessary beyond removing the smaller or lower leaves and any suckers that may form. Towards the end of October a portion of the crop will be lifted and stored in exactly the same way as Beetroot is treated—that is to say, the strongest leaves are trimmed off, the heart being preserved, and the roots stored in sand or fine soil. Those left in the open will have a ridge of soil drawn over the roots, and this, as a rule, will preserve them from frosts.

English catalogues generally only mention the common *Celeriac*, but there are three other distinct varieties to be found in Continental



Common or Turnip-rooted *Celeriac* (one-sixth natural size).

seed lists, and another will shortly be added. The common *Celeriac* is principally grown in this country, and is of moderately strong growth, the leaf-stalks being longer than those of the other varieties I have tried. It forms fairly large rough Turnip-shaped roots and can be more readily protected in the open ground than the dwarf-topped varieties. Properly cooked the quality is good. Large *Early Erfurt* is of quicker growth, but not so hardy. Large *Smooth Paris* attains a greater size, at least such appears to be the case judging from what I have seen of specimens shown alongside other varieties. The new Apple-shaped (*Vilmorin*) promises to be an improvement on the common or old form, as it is of sturdy habit and forms a medium-sized, well-rounded root or knob, and is fairly clear skinned. It is very tender and sweet when cooked. Large *Smooth Prague*, which I also received from Messrs. *Vilmorin*, is of remarkably compact growth and requires to be planted only 12 inches apart. The leaf-stalks assume a perfectly flat habit and a good sized root is formed. How far it will prove self-protecting remains to be seen, but it certainly looks like standing a severe frost well. So far I detect no material difference in point of quality, but each of the novelties is an undoubted improvement on the old form as far as the size and form of the solid root are concerned.

Our labourers are very fond of the roots of Celeriac in a raw state, but as a rule they would be more wholesome and quite as pleasant to the taste if boiled till tender, when they may be eaten either as a vegetable or be sliced up when cold in a mixed salad. Prior to being cooked the roots ought to be trimmed only and washed, being then placed direct into boiling water and there kept till a fork will pass easily through them. If pared and boiled whole in soup they flavour the latter and are much improved as a vegetable. Celeriac is particularly good when first boiled in clear water till tender, and afterwards pared and again gently boiled for a short time in stock. Those who may wish to ascertain what the flavour of Celeriac is like, but have not roots at their disposal, should experiment with the thick solid bases of the ordinary Celery, these forming a good dish when properly cooked and served. W. IGGULDEN.

Endive.—W. Iggulden (GARDEN, Sept. 28, p. 291) does well to advocate the growing of this for salad in England. The Moss Curled Endive is a very compact late sort, very hardy, but coarse, even when blanched. The Green Curled is the best of all Endives, and if a good stock is obtained no other varieties are needed, as it can be sown at all seasons. It is very finely curled, compact, early, finely flavoured, and requires very little tying to become well blanched. Louviers and Picpus are local varieties, which must be most carefully tried. Round Batavian, White Batavian (or Lettuce-leaved) are summer and autumn varieties, and must not be confounded with the Cornet (Batavian or Broad-leaved, as called by Mr. Iggulden), which is the true winter sort. If planted about the 1st of September and protected against October frosts, it must be taken up during November with a little ball of earth and stored quite thickly in a cellar in sand or dry earth. In this way it will keep for two months in fine condition. The outer leaves will perhaps decay a little, but the centre ones and the heart will be nicely blanched. It is a very tender and finely flavoured sort.—D. GUIHENEUF, *Nantes*.

Blanching Celery with brown paper.—When blanching Celery with brown paper, is it necessary to put the soil to the plants as well? Will not the heavy rains and frosts destroy the paper if not covered up?—AMATEUR.

* * Brown paper, unless of extra good quality and in several or not less than four folds, will not long withstand all weathers, but lasts sufficiently long to well blanch Celery for exhibition purposes. If enclosed by strips of canvas, no soil would be needed to preserve the paper, but the simplest plan is to bank the soil up round it, this making all sure. Two or three folds of good brown paper passed neatly round the stalks and properly secured will effectually exclude both soil and slugs from the hearts. The "Wortley" collars were made of superior brown paper and fastened with hooks and eyes. These proved both effective and durable, the soil not destroying them, though they were of no use a second time. Something of the kind ought to be available for amateurs and others, who would be glad of a cheap and simple means of excluding soil and slugs from the hearts of their Celery. When once the stalks are enclosed in brown paper or collars the soil can be expeditiously banked around them.—W. I.

Scab in Potatoes.—S. E. D. Turner propounds in relation to the cause of scab in Potatoes a query, the satisfactory reply to which has puzzled many in the past, and probably many others will be equally puzzled in the future. In some seasons scab is exceedingly prevalent, especially when hot and dry. In other seasons and in the same soil there is no evidence of scab. Lime in the soil has been charged with the production of scab; by others it has been assumed that its absence from the soil has been the cause. Insects, worms especially, have been charged with the production of scab, so have excessive wet and equally exceeding drought,

but the one fact which brings us nearer to a solution than any other of this odd problem is the undoubted appearance of scab more in hot dry seasons than in cool moist ones, especially when the growth is rapid. I believe there will be found close affinity between the check which plants and tubers receive when the weather is hot and dry and the production of scab. It has been assumed to be a fungus. That I hold to be nonsense. It has also been attributed to the action of the earthworms seeking for moisture when the earth is very dry. That theory will not pass muster either. Those engaged in the lifting of Potato tubers largely cannot fail to have often noticed that there are, while the skins are yet tender and thin, slight white mealy-looking eruptions or breakings out on the surface. The assumption is that during drought the tubers form more starch than can be utilised, and that these white mealy-looking patches are excess of starch being discharged, because it is being formed faster than it can be assimilated. Later when the tubers are fully developed and the granular eruptions have disappeared, the broken skins show excoriations which we term scab. As a rule these scabby Potatoes are of the best eating quality, some proof that starch is abundant in them.—A. D.

KITCHEN GARDEN NOTES.

THE ROOT CROPS.

ROOTS of all kinds, with the exception of late Turnips, are very plentiful this year, and if taken proper care of, the supply ought to last well through the winter, and, in some instances, till plants from the earliest sowings are available. We rarely lift and store large breadths of Jerusalem Artichokes, Salsafy, Scorzonera, and Parsnips, these keeping best where they are grown. When a severe frost is anticipated it is necessary to either lift and store a sufficient quantity of roots for use while the frost lasts, or else to heavily cover a portion of the crop with straw litter, this admitting of the ground being loosened at any time. Parsnips especially are sweeter and more tender when kept in the ground, shrivelling usually resulting when the roots are dug up and stored. Should the ground be needed early, or if it is requisite that it should be dug or trenched, then all the kinds named may be carefully forked out, their tops only being lightly trimmed off, and all closely packed, tops outward, in rather moist soil in a cool place, straw litter being thrown over them when severe frosts are imminent. Full grown Carrots do not keep well in the open ground, as they are liable to crack badly. These, then, ought soon to be forked out of the ground and sorted over. Those already much cracked and the roughest generally may well be sent to the stables, the rest may have their tops cleanly cut off, and be then stored. Carrots keep well in clamps or circular heaps, these, after they have dried somewhat, being enclosed with a good thickness of dry straw, and an outer covering of soil banked over this. In most instances, however, Carrots are stored in cool dry sheds, the roots being surrounded by either sand or fine mould. Care ought to be taken of the smaller roots, as it is a mistake to throw them away. They frequently keep better than larger roots and are more appreciated in the kitchen. Late sown Carrots should not be disturbed. Lifted they keep badly; whereas if left in the ground and drawn as required, they are more tender and sweet, and the undisturbed smaller ones continue to increase in size whenever the weather is mild. Turnips are rarely injured by frosts, but where they fail to keep well in the open, a portion of them may be pulled any time before December and clamped as advised in the case of Carrots. Thus stored and prevented from forming shoots the roots will keep longer than those left in the open. Chirk Castle Blackstone is the hardiest, and ought to be the last pulled. Veitch's Red Globe and the yellow varieties also keep well, and these therefore should be preserved as much as possible, while Snowball, Early Milan, and the Strap-leaved varieties are generally pulled for present use. Beet will keep well in the open if the roots are well mounded over with soil, and this is

preferable to drawing them and laying them in a dry shed without any covering of soil or sand, as thus treated they shrivel badly, and in addition to not keeping well, are also of poor quality when cooked. As a rule, the roots are carefully forked out of the ground and stored either in clamps or in heaps under cover of a shed in a manner similar to Carrots. In this case, however, it is unwise to closely top them, this impairing both their keeping and cooking qualities. All that should be done is to cleanly pull away all the large leaves, leaving the small hearts intact. Onions in some gardens have not ripened satisfactorily; many of them were bull-necked and continued to grow much longer than desirable. These will not keep well and should be the first used. All the rest ought to be thoroughly harvested if possible under glass prior to storing. The old-fashioned plan of tying the Onions either to stakes or lengths of stout string, these being suspended in a dry shed, is yet the best method of storing them. When placed in heaps in hampers or boxes the bulbs are apt to start into growth prematurely, and any that are unsound may quickly infect the rest. Harvested Onions are not perfectly hardy, and ought to be lightly protected from severe frosts, especially if they are stored in very cold outhouses. In any case the white Spanish varieties should be first used, leaving James's Keeping, Brown Globe, and The Wroston till last. No frosts will harm Leeks, and these being left undisturbed will continue to increase in size throughout the winter. Celery and Cardoons should not be lifted before they are required for use, at any rate in large quantities, these being best protected if need be where they are growing.

LATE POTATOES.

On the whole, these have yielded moderately heavy crops only. Strange to state, the Scotch Champion for the first time during the past seven years has failed badly, and Laxton's Reward, which I consider an improved Champion, has not done much better. A very wet July was the cause of failure, disease being rampant among the haulm. Not only did the loss of foliage in the case of these varieties check the growth of the tubers, but the latter, in addition to being smaller than usual, were more diseased than I ever saw them before. Magnum Bonum, fortunately, was extensively planted, and the crops of this well-tried favourite were fairly heavy, or at the rate of eleven tons to the acre and of admirable quality. Chiswick Favourite, Prime Minister, Chancellor, and Abundance all did fairly well, and although the tops were badly diseased, very few of the tubers were affected. One of the best crops I have yet seen was of Masterpiece. A light soil and a showery season evidently suit this fine variety, the tubers being numerous, large, remarkably well formed, and the quality most satisfactory. If the crops in this district are any criterion, Potatoes ought to be very abundant and good in quality everywhere.

SELF-BLANCHING CELERIES.

A considerable quantity of vegetable seeds annually reaches this country from America, being principally bought by those who have a craving for novelties. Among the latter much prominence has been attained by the golden self-blanching and White Plume Celeries, these being grown under the impression that they can be had fit to eat without any moulding up being necessary. No greater mistake could be made. That they will blanch and become apparently fit for use more quickly than the ordinary Celery I readily admit, but what about the flavour and keeping quality of these self-blanching varieties? As a matter of fact, they must be moulded up or the light excluded from the stalks for several weeks or fully one month, in order that the strong, unpleasant flavour may be got rid of. In America this is actually recommended and done, though a fortnight is considered ample preparation. As far as my experience goes, they require to be moulded up a much longer period, and in any case do not equal the varieties of English origin. They must also be moulded up or the stalks otherwise covered in order to protect them from frost, very little of this proving fatal

to them. The White Plume is the most ornamental of the two, being prettily variegated, but we cannot afford to grow vegetables merely as ornaments, and unless the Americans can send us novelties of more sterling value than these so-called self-blanching Celeries, the less of the kind we have from them the better. W. I.

FLOWER GARDEN.

FLOWER GARDEN NOTES.

THE FLOWER GARDEN IN WINTER.—What the flower garden shall be like in winter depends pretty much on the gardener, as to what is done now that there is an end of the summer flowers. As a matter of course, foliage must play the chief part. We can have this in the form of expensive shrubs, and also in the form of Heaths, Violas, Sedums, Thymes, Veronicas, &c., that are more common because more readily increased, yet all are valuable for the furnishing of flower-beds in winter. I prefer mixtures of the whole, and this we already have in certain beds that during the summer were planted with *Retinosporas* and variegated *Euonymus* as standards, and the floor-space of the beds (if I may use the term) filled out with Pansies, Violas, and seedling *Verbenas*. The latter have now been pulled out, and the Violas and Pansies cover the soil, and they are still flowering a little, and will continue to do so through the winter. Thus we have effective winter beds by simply clearing out the *Verbenas*. Other beds have had for the summer the pattern defining lines of design worked out by a broad band of *Herniaria glabra*, and now that the tender and summer flowers are gone, small shrubs have been planted in the central block of the design, and the remaining ground space filled with close, tufty turves of Heather which we cut from the common. Beds of similar size, but of different design, had the defining lines worked out with *Cerastium*; the central portions of these beds are now partly filled with small plants of *Mahonia japonica*—one of the handsomest of shrubs in winter—and others with small *Laurustinuses* in bud, and, taking into account the season of the year, this arrangement is as bright as that of the summer. I might mention other examples just as successful, but these two will suffice to indicate the direction which I think is best to take if we are to have well furnished beds in winter.

There is of necessity sometimes a difficulty to get the summer occupants that are not quite hardy out of the way before winter begins, as, of course, one does not like to destroy plants so long as they remain in fair condition. Amongst such plants are *Gnaphalium lanatum*, *Leucophyton Browni*, and *Gold Feather Pyrethrums*; the latter stands fairly well in a dry winter. *Gnaphalium* and *Leucophyton* retain their whiteness till well into the new year, and after that their brown withered appearance is not to be despised. We therefore plant hardy plants close up to them. Amongst the commonest and handsomest winter plants that bear removal well are *Veronica Traversi*, common Thyme, small seedling bush, also variegated and Lemon Thyme, Thrift, *Festuca glauca*, and *Ajuga reptans*. These with grey and green *Sedums*, *Antennaria tomentosa*, a few *Retinosporas*, *Cypresses*, *Thujas*, *Portugal Laurels*, *Aucubas*, *Laurustinus*, *Ivies*, and variegated *Hollies* will make the barest garden look cheerful in winter.

GENERAL WORK.—To complete the propagation of Pansies, Violas, and *Calceolarias*. The two former might do well if inserted on a narrow border at the foot of a south or west wall. At this late season frame space is desirable, and if it can be afforded, all anxiety as to their well-doing would be ended. All recently propagated bedding plants should now be got under glass, but give air freely whenever the weather is dry; this is the only way of securing a sturdy robust growth that will resist attacks of mildew, that in the depth of winter play such havoc with weak plants. Tuberous *Begonias* should be lifted, and after the roots are partially dried, pack them closely together in boxes of light

soil or Cocoa-nut fibre and winter in a place where the temperature does not fall lower than 40°. Roots of *Marvel* of Peru, *Dahlias*, and *Cannas* we serve exactly the same, and they invariably winter well. Choice *Carnations* and *Picotees* should have the shelter of glass. We were late in layering, and are only now potting up the layers, but with careful tending to keep out frost from the frames there will be little risk of losing them. Pinks and all strong growing varieties of *Carnations* winter safely out of doors provided the soil is not clay and if, during long spells of frost, a light coat of hay or Bracken be shaken over the plants. Hardy annuals and spring flowering plants of all kinds ought to be in their flowering stations now, and if any have been sown where they are intended to flower they should be thinned out at once. By doing this the plants remaining often receive a check by root-disturbance that would be prevented by pressing them firmly when pulling out the surplus ones.

W. WILDSMITH.

COLOUR IN FLOWERS.

AN article on the above by "C." in THE GARDEN for October 5 (p. 324), embodies a much-needed protest, for it is undeniable that much of the so-called improvement in flowers is quite the reverse. Especially is this the case with some of the new and improved strains of annuals in which the pure colour of the type has almost or entirely disappeared, and its place has been filled by another or a mixture of crude, washed out, indescribable hues, whose only merit is that of novelty. Every year there is a manifestly increasing craze for novelty, and whatever first created it matters not now, for we are brought face to face with the fact that whole races of fine flowers are in danger of being entirely spoiled. The zeal of industrious florists is surely questionable and their labour sadly misapplied in producing these abnormal or illegitimate shades of colour, as Mr. Engleheart has aptly christened them.

The old blue Cornflower can hardly be improved in colour, and although there is nothing to be said against a white form of it, yet there is no need for and no beauty in a strain that I sometimes see with dull reddish-brown and washed-out mauve-coloured flowers, uninteresting in themselves and ineffective upon the plant. The *Godetias*, too, are supposed to have been considerably improved of late years, but really they have been spoiled by the infusion of new shades and mixtures of colour that are altogether foreign to the flower. The white *Godetia* *Duchess of Albany* is very lovely, but its beauty lies in its simple purity of colour, a quality conspicuously absent in some of the other named kinds. Striped *Asters* and *Marigolds* are abominations that foreign growers send us, but if the demand for them did not exist there would be no incentive to supply them. "C." laments the introduction of a slaty hue into the *Carnations*. Quite recently when conversing with an artist I alluded to the same thing, and he described the shade of colour as detestable, and one that all flower raisers should avoid. Mr. Ruskin has said, "the greatest beauty borders upon ugliness," and there is truth in the statement considered in relation to colour in flowers, for verging upon these crude colours are those soft neutral tints which have a beauty hardly describable in words.

Some of these objectionable shades appear to be obtained by unduly developing certain hues whose beauty lies in delicacy. Before leaving the *Carnation* it might be well to say that magenta-purple as it appears in many self-coloured *Carnations* is a shade which few admire. I have thrown away several varieties with flowers of this tint. The florists of the old school had their types of perfection, and in their work they were guided by a code of self-formulated laws which related both to form and colour. The fault of these was that they were too exclusive, but since they have been mainly disregarded, ideas have leaned towards the opposite extreme; hence so much that is novel, but not beautiful. But colour should be one of the most important points of consideration, since it may mar or entirely spoil a flower of matchless symmetry. It should be remembered, however, that colour complexities are quite recent, and there must be an act-

ing cause which brings them about and a means of prevention.

Some argue that this colour question is solely a "matter of taste," but it is a matter of law, and taste has nothing to do with it beyond assisting in the discernment of what is harmonious and what is otherwise. Nature has her laws, but they are full of a freedom which she does not exceed, but we do, for all crude combinations of colour are a violation of the law in relation to that colour, brought about probably by indiscriminate hybridisation without due regard to the hue of the flowers of the two subjects. We cannot go far wrong with flowers of one self colour, and there is little to complain of in respect to those. Nearly all the evil lies in mixed colours and their want of harmony, and it is easy to understand how these inharmonious mixtures are brought about by the commingling of shades not meant to be associated in the same flower. If the florists will discard these wretched novelties as they appear, and study the propriety of the crosses they propose to make by hybridising, they will remove our present grievance, which it should be to their interest to do, because the craze for novel coloured flowers will not last, whilst the quantity of them may bring the florist's art into disrepute by leading many to think that judging from its products it is not of much worth. —A. H.

Tastes differ so much that this is a difficult question to deal with. There is no doubt that the striving after novelty which is so prevalent now-a-days has thrust on gardens very many things that would have been better consigned to the rubbish heap. Some months ago I referred to this matter in THE GARDEN, principally in connection with annuals, and naming especially the *Cornflower* and *Godetia* as flowers which have been spoiled by the introduction of new varieties, so that now one cannot depend on getting the old forms true. Nothing can be better in its way than the old blue *Cornflower*, and a few years ago it could be obtained true; but now paler sorts are so common and have affected the stock so much, that it is practically useless. Where strains of fixed and bright colours can be got true, as in the case of *Asters*, *Stocks*, and some others, or with plants that are increased by root-division or cuttings, the matter is of less importance, for plants with flowers of intermediate shades can be grown or not as may be most pleasing. In the garden undoubtedly almost all these shades of colour should be avoided, for they cannot be made effective. Room may still, however, be found to grow many things which are useless for landscape effect, but whose chief charm is in variety of colour or delicate shading, and the flowers may be enjoyed individually and without any fear of their ineffectiveness in the mass. Many flowers of this kind might be named that are decidedly charming in themselves, but without value in the landscape, such as fancy Pansies, *Dianthus Heddwigi*, and the delicate shades of the *Ten-week Stocks*. Almost everyone would weed out the colours complained of by "C." (p. 324) even in these. —J. C. TALLACK.

Funkia grandiflora.—Possibly in Japan this fine Plantain Lily obtains more sun than we get here, for though used as an edging plant it rarely flowers well in the open air. We have a lot of it and I was in hopes of having a good quantity of bloom, as in August it commenced throwing up many strong spikes, which grew about 2 feet high, but before the flowers could open cold and wet days were upon us and the spikes turned yellow, and withered away, only a few flowers being produced upon some of the more forward ones. When in flower it is by far the best of the genus and well merits its specific name; for the flowers are grand indeed. They are large, pure white, sweetly scented and often as much as 4 inches long. Such a fine-flowered hardy plant as this might with advantage be grown in a pot, for then we could the better ensure its flowering by treating it in accordance with its requirements. Well-flowered specimens in pots such as one I saw last year would be valuable in the conservatory. We could then enjoy the beauty

of this fine Plantain Lily, a thing at present few of us are privileged to do, when all the plants are in the open air and at the mercy of the autumn storms. Moreover, slugs are so partial to its foliage, that even when grown as a fine-leaved plant in beds or borders, its beauty is often sadly marred.—A. H.

WOOD LILIES.

(TRILLIUMS.)

THIS remarkable genus of North American plants includes a few of the most singular and striking of all hardy plants, but, with the exception of *T. grandiflorum*, all the varieties are considered difficult to manage, this in a large measure accounting for their scarcity in gardens. It is true they are difficult to cultivate if care is

are thus efficiently protected from cold winds in early spring. Few plants indeed adapt themselves more readily to shady nooks, and when once established they require little or no attention. The stronger growing varieties might with advantage be naturalised in shady woods, and if this could be managed properly, what a charming picture they would present through the spring months. The best and most useful of the group is the old *T. grandiflorum* (here figured). It grows from 1 foot to 3 feet in height, the large, trifoliate and handsome leaves being surmounted by large spotless white flowers. The latter are borne on short stalks and droop conveniently so as to show to the best advantage. It blooms early in April and May. *T. sessile* has broadly rhomboid leaves,

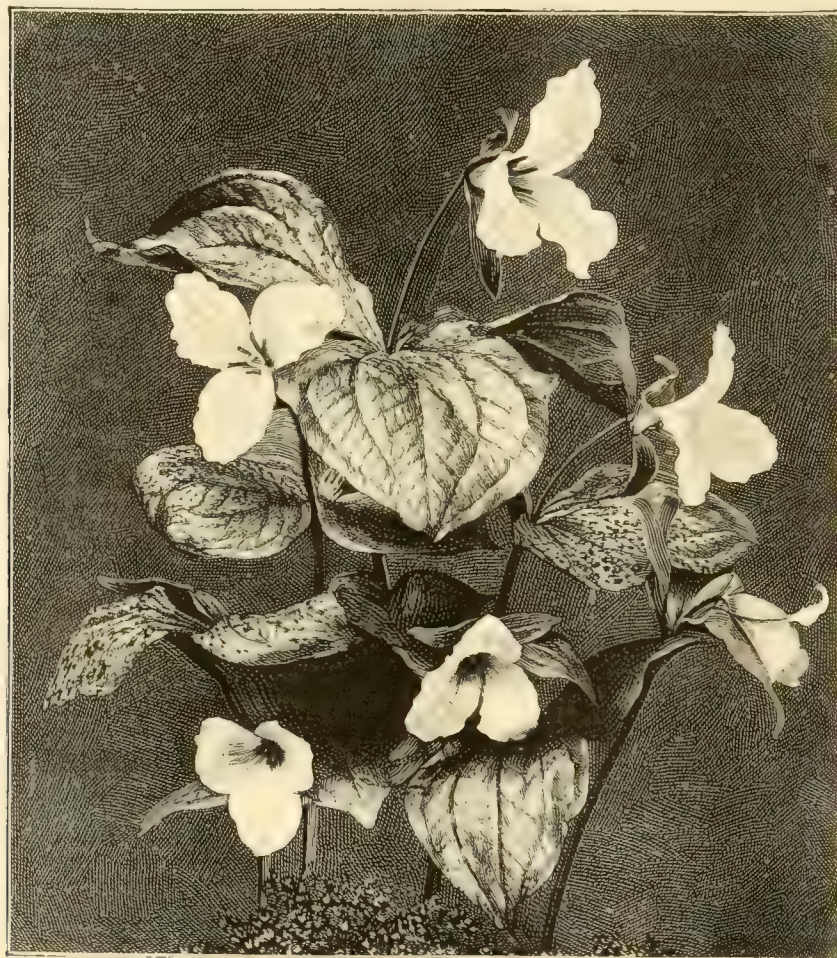
course, perfectly hardy, but I have to grow them in pots, as the slugs devour them in the open ground. The pot in which those illustrated grew was in a corner of the garden all last winter, and was taken into the house as soon as the young shoots appeared above ground. The Lily-like white flowers are very graceful and pretty, and remain a long time in beauty. The plants grew to a height of 15 inches or 18 inches. D. K.

FLOWERS FOR AUTUMN CUTTING.

THE present season has again demonstrated, if indeed there were any need for further enlightening in the matter, the great value of the autumnal herbaceous flowers. Once again we had an early September frost, not anything exceptional, but of sufficient severity to cut all the more tender summer plants that might otherwise have furnished us with a supply of cut bloom for some time, as *Mari-golds*, *Dahlias*, *Heliotrope*, and this would have been a serious loss were it not that the herbaceous things remain unscathed in the midst of this desolation, and fill up the gap created by the loss of their more tender brethren. *Pyrethrum uliginosum* is one of the best of the white autumn flowers; it does wonderfully well in our West Surrey soil, the large clumps, a couple of yards and more than this in height, being at the present time a mass of flower. *Chrysanthemum maximum* is not quite so satisfactory. Can any reader give a hint as to any special requirements of this plant? Certain it is that in the herbaceous borders here it has a tendency to dwindle away, and I should like a hint whereby I might check this. To extend the list of white flowers, an occasional Japanese *Anemone* and *Mme. Desgrange Chrysanthemum* are still with us, and so is a nice batch of *East Lothian* and *Princess Alice Stocks*. The small, fine-leaved *Marguerite* is in full vigour, and its flowers and foliage are acceptable. *Michaelmas Daisies* in variety furnish colour in their different shades of blue, very pretty in their dense masses in the border, and most useful either for ordinary vases or for the decoration of the dinner table. There is not much in the way of yellow left, although *Rudbeckia Newmanii* and *Coreopsis lanceolata* have died hard. For scarlet and pink shades we might repair to an old wall, where *Escallonia macrantha* is in full flower, but another source of supply is at hand in the shape of a few dozen plants of *R. V. Raspail* and *Guillion Mangilli Geraniums*, that, plunged in the spring in an odd border, have been flowering all the summer, and now after careful lifting and top-dressing will furnish us, with the protection afforded by a Peach house, with a plentiful supply of bloom until the spring-struck plants of the same varieties in a warmer house are at their best. Another favourite old *Geranium*, with a little attention in the autumn, is *Lady Plymouth*, the foliage being valuable for dark vases. Given a fairly good border, it forms quite a fair-sized bush by the end of the summer, and a slight protection from early frost will keep it intact for a considerable time. The above are a few of the plants that we find very useful at the present time, and they are worth a place in all gardens if the demand for cut flowers is great and continuous.

Claremont.

E. BURRELL.



The large white Wood Lily (*Trillium grandiflorum*).

not taken to choose the proper position and soil. For instance, to plant even the strong growing *T. grandiflorum* in the ordinary flower border would be a certain way of courting failure. If *Trilliums* are planted in a properly prepared soil in a somewhat shady situation no fear need be felt as to success. *Trilliums* require a peaty or vegetable soil, free, deep, and well drained, as they are most averse to stagnant moisture about their roots. In an artificial bog or by the edge of a pond they thrive admirably when fairly established, and in such positions they are very effective. Their natural element, however, and the position in which I have found them always do best is as edgings to such plants as *Azaleas*, dwarf *Rhododendrons*, *Kalmias*, and other evergreen shrubs, as they

the flowers purple-brown; the variety *californicum* is, however, the best. It is much stouter, with broadly oval leaves, 3 inches to 6 inches long, the large flowers rose-coloured or white. This is a handsome species, very easily managed. *T. recurvatum* has oval leaves and small purple-brown flowers. *T. erectum* is a common species, with usually brown-purple flowers, varying to white or pink. Others equally beautiful and desirable are *erythrocarpum*, a most beautiful species, *cernuum*, *ovatum*, *petiolatum*, &c. With the photograph, from which the accompanying engraving was taken, we received the following interesting note from the sender, Lieut.-Col. J. R. Kelsall:—

These were grown from roots picked up in the woods in Canada three years ago; they are, of

Stopping herbaceous plants.—Some plants have curious traits, which are only seen after their heads have been cut off. If a *Daffodil* bud be cut, the footstalk will continue to grow all the same until it has attained the height it would have been had it not been beheaded, and so with certain *Asters* and other plants. Their heads may be cut off for the purpose of dwarfing them, but they refuse to be dwarfed in that way, and the young shoots grow on until the normal height is reached. Those of the *Novi-Belgii* group do not lend themselves kindly to this cutting-down practice, but I noticed that wherever a shoot has fallen down it blooms just as freely lying on the ground as though it was standing erect, and no doubt all the species and varieties would do well so treated, and they might be pegged down from the first. The best time to cut down is when the young shoots have grown to about one-third of their

usual height. The curious thing about this cutting down is that the flowering season, as a rule, is not retarded. Still, there are exceptions, and one of these is the decussate Phloxes. For years I have made a practice of cutting these down at three different times, that is, a portion of the shoots when they are about 6 inches high, another portion when they are 18 inches high, and others when the buds are formed; thus the blooming season is greatly prolonged.—T. SMITH, *Newry*.

IRISH DAFFODILS.

TO THE EDITOR OF THE GARDEN.

SIR,—I regret that the Daffodil Conference should have expressed an opinion on the Irish Daffodils (Countess of Desmond, Silver Bar, and Robert Boyle) without receiving blooms of them from the most authentic source, *i.e.*, the discoverer and principal grower of them. I have myself sent blooms to such a Daffodil authority as Mr. Burbidge, and received his unqualified expressions of admiration. I have been unable to send them to the Daffodil Conference for the simple reason that at the date when the conference is held, every variety of Irish Daffodils in my garden is completely out of bloom. To you, or any unprejudiced Daffodil grower who may desire to see the blooms, I shall gladly send some; but I must strongly protest against any judgment being formed of my Daffodils from blooms reputed to be from bulbs obtained from me by Mr. Barr by exchange while I was in ignorance of their value.

In reference to Daffodils belonging to the cernuus group, if I have heard rightly, there was a rule made at the end of April, 1886, that no more cernuus Daffodils were to be entertained or looked at by the Narcissus Committee unless grown three years at Kew. With all respect for Kew, I object to the Southern Irish Daffodils being judged when grown out of their own habitat. But if the rule is still unrescinded, surely it was wrong to place my Daffodils before the committee. Trusting to your courtesy and sense of justice to insert this letter.

THE DISCOVERER OF COUNTESS OF DESMOND.

Clematis graveolens.—This kind is worthy of more attention, for it is at its best late in summer and on through the autumn, when the majority of Clematises are past their best. It is a free climber and well able to take care of itself. Although beautiful when flowering freely upon a wall as I recently saw it at Kew, it is seen to better advantage and looks more natural when rambling up the face of some evergreen tree like Yew, Holly or Box. It reaches from branch to branch, flowering as it goes, and the blooms, which are scented and of a pale yellow colour, are better seen when contrasted with the rich dark green foliage of the plant supporting it. It is also valuable in that it gives us a colour uncommon in this beautiful family where white, blue and purple are represented in every variety of form and shade.—A. H.

Annual Dianthus.—Beyond all other ordinary hardy annuals, these annual Pinks give bloom in quantity when all others have been destroyed by early frosts, or have otherwise collapsed. A big patch of the double white still produces quite an effective show of flowers, and should give abundance for cutting, but, of course, the flowers are not so large as those produced during the summer. It is really meritorious to have Dianthus blooming freely outdoors so late as the middle of October, and they will bloom on yet, I have no doubt, provided frosts are not too severe. Indeed, the heavy rains are more harmful than are the early frosts, for these Dianthus will stand even till the end of November, and sometimes till Christmas, if the weather be not too severe. The single forms, and with me especially the single crimson variety named Brilliant, bloom very freely, because if one flower be harmed another expands the next day. Few hardy plants will give in gardens the superb colour which this Dianthus does at this time of the year. A double form is also very striking, but not so free. Plants of all these varieties are so easily raised from seed, and they seed fairly well also, that it is not worth while

troubling to save old plants, or propagate by means of cuttings. Seed may be sown in the open ground towards the end of April, but I prefer to sow in a cool house or frame, and have stout plants to dibble out about the middle of May. If seeds be sown early in March, so that the seedlings may be transplanted about the middle of April into a frame, and thence removed in May to the open ground with good balls of soil, they will make very fine plants, and bloom superbly till late in the autumn. Dianthus seem to have power to create new growth without check until finally killed by severe frosts.—A. D.

SEEDLING DAFFODILS.*

THE secretary having asked me rather recently to follow Mr. Burbidge with a short paper of some kind on the Narcissus, it occurred to me that I would get together a few notes on the subject of seedlings and seedling raising. But after having done a little towards this, I found among my accumulation of Daffodil literature two back numbers of the *Gardener's Magazine*, which, as must sometimes happen to a busy man, had not been read by me as they deserved, but which really almost exhaust the subject, historically considered.

To those, therefore, who are interested to know the history, so far as it is ascertainable, of our hybrid and seedling Narcissi, let me recommend the very excellent papers by Mr. Burbidge which may be found in the *Gardener's Magazine* of December 12 and 26, 1885.

There is, however, perhaps room for me to contribute a few practical remarks about the present aspect of seedling raising in the Narcissi, especially as it has been a great source of pleasure to me to study this fascinating family in my leisure for some years. And at the outset I would say that I am not of those who regard the extreme interest taken in Daffodils, and the immense demand for their flowers, as a fashion and a craze which will suddenly ebb away. Covent Garden in April, and the fact that shrewd men of business have sunk, and are still sinking, large capital in these bulbs, are a guarantee that the Daffodil fashion will remain an abiding habit of springtime rather than a passing fashion. The truth is that this early, hardy, and sufficiently diversified flower has supplied an acknowledged want, and that it is extremely difficult to imagine any other that can fill our markets to the same extent at the same season. When Roses are not valued in June, July, and August, Daffodils will not be valued in February, March, and April—but not until then.

This is no digression from my subject of seedlings, for the unshaken, and, I think, unshakable, popularity of the Daffodil assures us, first, that the work of raising seedlings will continue; and, secondly, that it will now principally take the course of efforts to improve the Daffodil from the florist's and the market gardener's point of view. From the point of view of the scientific botanist there does not, perhaps, remain a great deal to accomplish in seedling raising, in comparison with what has been done. For we may, roughly speaking, say that we know the parentage of most of the hybrid Narcissi. That will be acknowledged by those who consult Mr. Burbidge's papers which I have mentioned. Herbert, Leeds, Backhouse, Leichtlin, and others have left notes—not so ample or accurate as we could wish, but ample enough to justify us in saying we know that *N. incomparabilis* is between *N. pseudo-N.* and *N. poeticus*; *N. odoratus* between *N. pseudo-N.* and *N. jonquilla*; *N. tridymus* between *N. pseudo-N.* and *N. tazetta*, and so forth. It will, no doubt, be satisfactory when all this is verified step by step, by workers who will bring us every one of these old hybrids as actually raised by themselves, and will show us parents and offspring. There are also new hybrids to be produced between *N. triandrus* and *N. cyclamineus*, and the various Narcissi with which they seem willing to cross. The former has already been

used, but to no great extent as yet. Many more minds and hands, however, will be engaged in improving our Narcissi as florists' and market gardeners' flowers, for a florist's and a market gardener's flower the Narcissus now is, and a very important one, aesthetically and commercially. It is on this point in particular that I have a few suggestions to make—as to the lines along which such improvement should be pushed.

When visiting the grounds of my good friend Mr. Walker and others, it has often been my thought—how few first-class market varieties there are, and how many gaps there are crying to be filled up. Thus, at the beginning of the Narcissus season I see Tenby all alone, so far as trumpet Daffodils are concerned, for some while; and I am sure that Mr. Walker would like half an acre of a flower as early, as bright, and as stiff as Tenby, but twice as big and productive of more bloom to the bulb, for Tenby is not very free in this respect. I think that this is an attainable thing, either by sowing considerable breadths of seed of Tenby (it bears seed abundantly) and selecting from the seedlings, or by crossing it with such Daffodils as Golden Spur or maximus. How lovely the soft pale colouring of pallidus præcox is; but we must have a much better-behaved pallidus præcox—I mean a Daffodil which is both pale and precocious, but which does not die suddenly, as this pale precocious child does. Selection might give us this, for it seems there are several varieties, from different districts and different levels, of these pale early trumpets, and one may prove harder than another, or seedlings might acquire greater hardiness. Sir Herbert Maxwell assured me that he could never get *Corbularia conspicua* to establish itself comfortably in his Scotch garden until he raised it from seed. Or a cross between a strong and good early yellow Daffodil, and as robust a white one as can be found, might provide us with a most substantial straw-coloured early variety. Then, who will supply us with a large, bold, white trumpet Daffodil, substantial in flower and robust in constitution—an out-of-doors Eucharis? We have no white kind that the market gardener finds it worth his while to grow, unless, indeed, it is Messrs. de Graaf's noble Madame de Graaf, of which, however, we know little as yet as to its behaviour under field cultivation in England, and if it is satisfactory in all points, yet it stands alone, and there is room for other seedlings like it. It is worth while to raise white seedlings—some of the whites yield large and good seed—and I have flowered the young plants in their fifth and even in their fourth year. Also it will be well to raise plants in quantity between the larger yellows and the stronger whites. The white hybrid forms, such as Leeds and Leeds amabilis, though of good constitution, are far too soft in the flower for market purposes; the crown melts in sun and wind, and the market gardener will gladly accept something more durable if we will invent it for him by selecting as robust seed parents as is possible.

Here I may point out that the modern hybridist has enormously better materials to work with than Mr. Leeds, for instance, had. Not to speak of the fine new Ajax forms which have appeared of late years, he seems to have possessed none but inferior, narrow-petalled varieties of the poeticus—one of the hybridist's most necessary elements. Our beautiful, broad-petalled, vigorous *N. p. ornatus* ought to give us incomparably flowers of enhanced shape and substance. Again, there is a vacant place for a big and sturdy mid-season or late flower, such as Emperor, but with the rich golden colour of maximus, which is not always happy in England. Perhaps Messrs. de Graaf and the late Mr. Kendal have already crossed Emperor with maximus to add the rich deep colour of the latter to the splendid habit of the former, but other gardeners may well attempt this or similar devices. Maximus seeds with me occasionally; Emperor always with great freedom, although with Mr. Backhouse it seems to have seeded badly. One of the loveliest possibilities in Narcissus hybrids is the flower with pure white perianth and orange-scarlet crown. Nelsoni aurantius is, perhaps, the only good flower already

* A paper read by the Rev. G. H. Engleheart, M.A., Appleshaw, Andover, at the meeting of the Royal Horticultural Society, April 9, 1889.

obtained, or at least in commerce, in this department, for "Mary Anderson" declines to stay on the stage, and the collected Bernardi (some of which are very brilliant) want size. I can scarcely myself believe that M. Leichtlin's scarlet Daffodil is a possibility, so far as a red perianth is concerned, but there is no reason at all why a flower should not be born as big as Sir Watkin, but with a white perianth and an almost scarlet cup. I have myself many seedlings in a juvenile state supposed to be between various fine trumpets and the red-cupped *p. poetarum*, and hope they may not disappoint my expectations. In this cross the Ajax must be stout, to compensate for the flimsy perianth of *p. poetarum*.

Speaking of the poeticus group reminds me that there is too great a gap of time between the last flower of *ornatus* and the first of *recurvus*. *P. poetarum*, to some extent, comes between the two; but it is not serviceable as a market flower on account of its thin perianth, which droops like limp muslin on a scorching day. Seedlings between *ornatus* and *recurvus*, a perfectly possible cross, ought to be valuable to bridge over this gulf. And how invaluable a double *ornatus* would be, or a double poeticus, which would bloom distinctly before the ordinary late double poeticus. Large growers of *ornatus* should be on the watch for a semi-double *ornatus*, and carefully save its seed. Or perhaps a cross could be effected between *ornatus* and the late double, which occasionally seeds, if the one could be retarded and the other forced.

Enough attention has not been paid to the raising of double seedlings. Double Daffodils seed more often than is supposed. A very double Daffodil often has the stigma perfect and visible among the tightly packed petals if the flower is well examined. It is because there is seldom a large pod that the seed is unnoticed. A few seeds may not uncommonly be found in what looks merely like the rather swollen end of the pedicel. I have seedlings of the common double *Telamonius* now in flower, and several other gardeners can say the same. Hybrid or crossed doubles are not impossibilities. In 1885 I noticed the stigma protruding from the tightly-double trunk of a few flowers of double *cernuus*. I marked them, and obtained nineteen seeds, eleven of which grew. Out of curiosity I dusted the stigma of one or two with pollen from a yellow Ajax—I believe it was *spurius*—which was growing near at hand. This spring one of the eleven seedlings is flowering, and the cross was evidently effectual, for the flower—so far as I could judge of it in its half-opened state before I left home—is drooping, like *cernuus*, but so yellow as to be almost precisely like the common double yellow. The ten unflowered seedlings seem to vary in leaf and habit, and I may have more oddities to report next year. It may be of service to hybridisers to know that the pollen of double *Narcissi* commonly gives doubleness to single flowers fertilised with it. In my garden I have some clumps of the common double yellow on a walled south border, which therefore bloom early. In a batch of seedlings from "Tenby," sown in 1884, I have one quite double flower, differing in no visible feature from the common double yellow or *Telamonius plenus*. I understand that my friend Mr. Wolley Dod has had precisely the same experience, and I do not doubt that in both gardens insects conveyed pollen from the double flower to the single. These seedlings have been grown in ranks and watched every year, and no mistake has been made. Our common wild *Pseudo-N.*, when fertilised by pollen of the common double yellow, yields single yellow seedlings, and also doubles of a small intermediate character. Much then, I think, might be done to give us greater variety in double *Narcissi*. I notice that Mr. J. Cornhill writes to THE GARDEN of April 6, affirming that he has two varieties of "hybrid seedling Daffodils."

It is well, however, to remind the enthusiastic gardener that he is not likely to make a fortune out of the business of raising seedling *Narcissi*. Not only must it take a large fraction of a lifetime to work up a small marketable stock of a fine

variety, but he may labour some years without finding such a plant among his seedlings. He will have many blanks and few prizes. Probably not one seedling out of a hundred, or out of many hundreds, will bear comparison with the finer flowers now in our gardens. It is probable that seed of *Horsfieldi*—a magnificent flower which seeds freely—has been sown by many with sanguine hopes of flowers as big as dinner plates. Out of many seedlings from *Horsfieldi* now flowering with me, not one has the smallest pretensions to equal its parent, or even to resemble it, and Mr. Wolley Dod tells me the same thing is true of a great bed of the same seedlings in his garden. The extraordinary variety, however, of form and colour among such seedlings leads me to suppose that the *Horsfieldi* flowers were for the most part impregnated with pollen from other Ajax varieties. It is alleged that the *Narcissus* is usually *proterandrous*, i.e., ripens and sheds its pollen before the stigma is receptive, and therefore we should perhaps do as Darwin did in his experiments—cover with a gauze net those flowers which we desire to produce true offspring—excluding insects, and applying pollen from flowers of their own race, if obtainable. But Mr. Backhouse observed long ago that seedlings of *Empress* and *Emperor* have a tendency to revert to an inferior type. (With regard to *Emperor*, I find the seedlings fairly constant, as may be seen from two flowers here at hand.) With me the progeny of *Vicar of Lulworth*, a remarkably shapely and handsome little flower, had reverted to pure common wild *Pseudo-N.*, and the same reversion has taken place in seedlings of the so-called *Bicester Whites*, which are almost certainly crosses between some white Daffodil and the indigenous *Lent Lily*. On the other hand, I have myself, to some extent, imitated both the *Lulworth* and the *Bicester* flowers by crossing the *Lent Lily* with garden Daffodils. The *Lent Lily*, dusted with pollen of a trumpet Daffodil *Achilles*, has given me the flowers, here shown, with prettily expanded crowns. Some ten years ago there came from Holland certain large yellow trumpet Daffodils, now known as *Henry Irving*, *Golden Spur*, *General Gordon*, and others. They were supposed to be Dutch seedlings from what is known as *Narcissus spurius*. Here are seedlings from my garden raised from *N. spurius*, and it will be seen that they are on the way to represent these or similar forms, and that their variation is considerable and noteworthy. Seedlings of *Tenby* are more constant, though they, too, vary. Some of my young seedlings of *Horsfieldi* give flowers in form like *N. princeps*, and among seedlings of *cernuus pulcher* I have reversions to pure *cernuus*.

One of the lessons of these reversions and variations is, that we must certainly sow large breadths of seed for the chance of obtaining a few really superior flowers. And I will conclude with advice that we shall do well not to neglect the latest scientific methods in our seedling-raising. In Darwin's beautiful book upon the effects of cross and self-fertilisation in plants, he gives, as one of his important summaries, the inference that the most robust offspring results from the marriage of plants which are different varieties of the same species, and which have been grown under varying conditions of soil, climate, &c. If, then, to take an instance already given, we desire to cross *Emperor* and *maximus*, we shall do well to obtain our pollen from another garden or another part of the country, if possible, or to let one of the parents be a plant imported from another locality the previous summer. If we were to cross the robust *Narcissi* of our gardens with the finer varieties freshly collected from the Pyrenees and other distant stations, we should perfectly fulfil Darwin's demand of varying conditions of life in the two parents.

Darwin has collected evidence to indicate that true hybrids, i.e., crosses between different species of a genus, are commonly weak in constitution or in fertility, or in both. Extremely bad results are fortunately uncommon in hybrid *Narcissi*, although we can see that in them Darwin's rule holds good to some extent. Thus, to mention some of our modern hybrids, *N. Leedsi Beatrice*—with me, at least—is

both entirely sterile and of little vigour. The varieties *Stella*, *Cynosure*, and most of the incomparabilis class are vigorous and of rapid root-increase, but sterile or very unprolific in seed-bearing. But the Pyrenean *Bernardi* (so far as my experience goes) and such garden hybrids as *Princess Mary* are both robust and free seed-bearers.

Herbert pointed out, nearly half a century ago, how much pleasure the amateur might find in the occupation of raising new *Narcissi* from seed, and this still holds true. For the more scientifically minded there is still the parentage of some of the ancient hybrids to be more certainly verified, and still new hybrids to be raised—e.g., let him bring us hybrids of poeticus with *triandrus* or *cyclamineus*. For the unscientific lover of flowers there remain some ideally beautiful things to be produced: he may bring us the giant white and scarlet *incomparabilis*. And if some faint-hearted gardener objects that this is the work of years, and that he will labour, but the market-gardener will enter into his labours,—well, is not this true of human work at large? Men must be like the bees, which still make honey and are probably happy over it, though it was remarked two thousand years ago that they do not make it for themselves.

ORCHIDS.

W. H. GOWER.

DENDROBIUM AINSWORTHII.

DURING the first week of this month I received from Mr. Osborne, late gardener at Wilton House, Southampton, and now of The Grove, Teddington, the residence of Mr. Howard, flowers of a *Dendrobium*, asking if they are blooms of *D. Ainsworthii* or *D. splendidissimum*. After a careful examination, I have come to the conclusion that they are flowers of a very fine form of the first, *D. Ainsworthii*. It is curious that this variety is now flowering. *D. Ainsworthii* and *D. splendidissimum* have the same origin, having been obtained between *D. aureum* (*heterocarpum*) and *D. nobile*, both parents being spring bloomers; it is, therefore, all the more curious to find the offspring flowering in early autumn. Will the plants be the fore-runners of an autumn-flowering variety? If so, it will be a valuable addition to our Orchid houses at this season. *D. Ainsworthii*, *D. Ainsworthii roseum*, *D. Leechianum*, *D. splendidissimum* and its variety *grandiflorum* have been obtained from the same species, and thus they contradict the assertion made by some that a certain cross must produce the same plant. It must be admitted, however, that these kinds approach each other very closely. All have the delicious fragrance of *D. aureum*, but the form of the flower and the habit of *D. nobile*. The sepals and petals of the flowers are white, prettily tinged with mauve, which becomes deeper towards the tips; lip large and spreading, well open, heavily blotched with rich maroon-purple, with a number of radiating lines of a deeper hue, which run out into the white border which surrounds the lip. The front portion is faintly tipped with mauve, leaving a distinct border of white between this and the dark blotch previously named. It is one of the very best forms of this variety that I have seen. In the variety *roseum* the sepals and petals are more deeply tipped with rose, passing into creamy-white at the base; the front of the lip is more pointed and covered with deep maroon-crimson, veined and streaked with deeper crimson, the border, which in the type is white, being here soft rose. *D. Leechianum*, a coloured plate of which appeared in THE GARDEN, July 7, 1883 (p. 6), is a plant of similar aspect, as might be expected from the same parents, but it presents a very different

appearance when in bloom. The flowers are of the same shape as those of *D. Ainsworthi*, the sepals and petals white, tipped with rosy purple. The lip is blotched with deep crimson at the base, flushed with amaranth, and has a marginal border of white. *D. Leechianum* blooms very freely, usually through the late winter and spring months, but I have seen it flowering in late autumn.

The above-named plants all grow freely, and they have become tolerably plentiful as small plants, but I should like to see growers devote themselves to the cultivation of specimens of these plants instead of being so fond of cutting them into pieces, in which state their beauties are not nearly so well displayed. *D. Ainsworthi* may be grown in either pot or hanging basket. The latter system is, I think, the best way to grow it, as it can be hung up near the roof-glass, and I have found that it delights in an abundance of sun and light. It should be potted in a mixture of rough peat fibre and Sphagnum Moss, and the drainage should be of the best. During its growing season it requires an abundant supply of water, but when growth is completed water should be withheld entirely, and the plant removed to a lower temperature and kept well exposed to sun and light. I do not think, however, that this species should be subjected to such cool treatment as *D. nobile*. *D. Ainsworthi* was first raised by Mr. Mitchell, gardener to Dr. Ainsworth, Manchester; *D. Leechianum* by Mr. Swan when gardener to Mr. Leech, of Manchester; and the finest form, *D. splendidissimum*, by Mr. Seden in the Messrs. Veitch's establishment at Chelsea.

Cattleya Bowringiana.—This, which I consider a beautiful autumn-flowering *C. Skinneri*, is now in great beauty in The Woodlands collection at Streatham, where are to be seen very large trusses of this species, with flowers varying from pale rose to lilac and deep rosy-purple, rendering it exceedingly showy. It resembles *C. Skinneri* very much, but flowers at quite a different season of the year. To grow this plant well, it must have a considerable amount of warmth and a very moist atmosphere.—W. H. G.

Odontoglossum Roezli.—Flowers of a grand form of this species come from Mr. Cypher at Bath. It is truly a gem for this or any season of the year, the pure white of its large flowers being so beautifully set off by the amethyst-purple blotches at the base of the petals, and the yellow stain at the base of the lip. These features combined with the elevated column render it, in my opinion, a far more taking flower than that of *O. vexillarium*. It, like *O. vexillarium* and *Phalænopsis*, requires more warmth, but they must all have a cool bottom to stand upon and be surrounded with a very moist atmosphere, or it will be next to impossible to keep away thrips.—G.

Odontoglossum grande.—A great many flowers of this variety have come to hand this week, and the varieties are very striking. I am glad to see this Orchid coming so largely into favour. Amongst them all, however, those received from Mr. Cypher at Bath, and those from Mr. Osborne, The Grove, Teddington, are by far the best, having large broad sepals and petals, the latter especially so, and the apical half rich yellow, the base bright chestnut. The lip is large, brightly coloured, and bordered with a band of bright dots. Since my notes upon this species last week, I observed in Mr. Measures' collection a plant bearing seven flowers on a scape; this is the first time, I think, I have ever seen so many. These flowers, too, it must be borne in mind, are each some 6 inches across, and the plant may be grown with the greatest ease by anyone, so that I look forward to new forms cropping up, especially if it should ever be grown as largely as *O. crispum*.—W. H. G.

—“W. H. G.” (p. 356) says he has heard of

seven flowers on one scape. I have now in bloom a plant with two scapes each consisting of seven flowers.—HENRY BUCKLEY, *The Upper Boom, Lint-hurst, near Bromsgrove.*

Lælia elegans Turneri.—“T. T.” sends a fine flower of this superb variety for name and value of a good plant. The first question is answered, and the next one can be if “T. T.” will send a stamped envelope. I never answer trade questions in a public paper. It is rare, and the flower is that of a very fine form of the variety, rich deep purple in colour, the spoon-shaped lip having a narrow marginal border of lilac. It is without exception one of the very best forms of the dark elegans, next to which may be taken *Tautziana* and *Mossiae*.—W.

Cypripedium hybridum.—A beautiful bright form of this variety comes from Mr. Howard's garden at Teddington. I admire the flower, but cannot say I do the name; it appears so very poor and common-place to name a plant “hybridum” amongst hundreds of hybrids. The plant in question is a *Harrisianum* to all intents and purposes, but it has plain green leaves, the flower being large and very bright, the dorsal sepal yellowish green, with veins dark at the base, passing in the upper part into green. The lip also is closer than in the normal form of *Harrisianum* and of a brighter colour.—G.

Cypripedium Mme. Cappe.—This is a beautiful hybrid, now flowering for the first time in Mr. Measures' collection at Cambridge Lodge, Camberwell. It is a cross between *C. Spicerianum* and *C. Dauthieri*, and to me it appears to be by far the best variety of *C. Spicerianum* which I have seen. The flowers are larger than those of the last-named plant, and are borne on the scape in pairs. They may be described as having a large ovate dorsal sepal, the sides reflexed, white, with a patch of green at the base, veined with lilac-mauve, and a broad central streak of crimson. The inferior sepal is much smaller, oblong, pale green; petals slightly crimped on the upper edge, green with a dark central band, the superior half suffused with a reddish brown hue; pouch more compressed than in *C. Spicerianum*, purplish mauve, freckled and stained with crimson-lake on the inside. It is a beautiful and very showy kind, well deserving the attention of growers of these plants.—W. H. G.

SHORT NOTES.—ORCHIDS.

Miltonia spectabilis Morsliana.—This variety is flowering well at Kew. It differs little from the type, except in the flowers, which are large, rich purple, and veined in the lip with rose.

Dendrobium Lowi.—A plant of this is in bloom with Messrs. Veitch & Sons. It is a bad grower, hence its comparative rarity. The flowers are spurred, about 2 inches across and bright yellow in colour, the lip veined with red and fringed. It is a Bornean species.

Oncidium Forbesi.—Flowers of this pretty Orchid, known also as *O. crispum marginatum*, have been received from Mr. West, gardener to Mr. Coulthurst at Streatham Lodge, where hardy plants are also well cared for.—G.

Odontoglossum cuspidatum.—Of this there are numerous varieties and all are serviceable, as they flower at a season when the majority of the other kinds are past; the sepals and petals are yellow, spotted and blotched with chestnut-brown; lip soft yellow, spotted in the variety before me with purplish brown just under the crest. From Mr. Howard's garden, The Grove, Teddington.

Promenæa Rollissoni.—This is sometimes classed with the *Zygopetalums*. A plant of it is in bloom at Kew. The flowers are interesting, but of no particular beauty. They are borne on the deflexed scapes, and are pale yellow in colour, the lateral lobes of the lip freely spotted with crimson. The whole flower is not unlike that of the Dove Orchid.

Helcia sanguinolenta.—This charming dwarf-growing plant is now flowering beautifully in Mr. Williams' nursery at Holloway. The sepals and petals are bronzy-green, marked with cross bars of dull red, the lip white, veined with lines of crimson. It is a cool house plant and deserves to be seen more frequently in collections than is now the case.—W. H. G.

Cattleya bicolor.—A beautiful form of this is blooming in Messrs. Veitch & Sons' collection at

Chelsea. The plant bears a spike of four flowers, which are 4 inches across, the lip very rich rose-purple colour. It is the finest variety we have seen.

—This species appears to be becoming very popular, and I am very pleased to see it. It is a charming flower, and with an increased cultivation will come a greater number of good forms. I have *Cattleya bicolor* flowers from half-a-dozen places this week, and all are different, this mostly occurring in the sepals and petals, but the purplish crimson lip is very brilliant.—W.

BOOKS.

A MANUAL OF ORCHIDACEOUS PLANTS.*

WE have before us Part V. of this interesting work. The great care which has been taken with the parts of this work previously published is equally manifest in this one, which is devoted to *Masdevallia* and kindred genera—*Arpophyllum*, *Cryptophoranthus*, *Platyclinis*, *Pleurothallis*, and *Restrepia*. *Masdevallias* proper are divided into three sections—*Eumasdevallia*, *Saccolabiate*, and *Triaristellæ*, all of which are composed of plants of decorative qualities; while a fourth section, of which *M. swertiaefolia* and *M. gibberosa* are typical examples, is composed almost exclusively of plants possessing no other horticultural interest than the curiosity resulting from the inversion of their flowers—has been simply noticed. This is a very wise course, for the genus *Masdevallia*, with all its extremely curious and sometimes richly-coloured flowers, deserves better attention than it receives at present at the hands of amateurs. It is, therefore, advisable to devote but a small part to plants simply possessed of botanical interest, and reserve a larger share of the work to those species which are of decorative as well as of scientific value.

The first of the above-named sections being very large and replete with highly decorative plants, has been divided into six groups or subdivisions, which, although of minor importance, are very fairly characterised either by the shape or the nature of the perianth, or through the disposition of the flowers, which in one section (*Polyanthæ*) are of somewhat coriaceous nature, and borne on few or many-flowered peduncles; while in some others (*Coriaceæ*, *Coccineæ*) the flowers are solitary; and, again, in the section *Amandæ* they are small and borne in erect racemes. The sub-division *Cucullatæ* is composed of plants having flowers easily distinguished from all others through their large and cucullate bracts; while the sub-division *Caudatæ*, the members of which are furnished with long, slender tails, is an obviously distinct group of plants with solitary flowers.

To these sections and their sub-divisions all the *Masdevallias* at present known may be referred, while a few of what were formerly known as *Masdevallias* have, on account of their distinctive and peculiar characters, been formed into a small group under the high-sounding name of *Cryptophoranthus*, which name, however, is not the creation of the authors, and which is undoubtedly too cumbersome. For, although thoroughly distinct and deserving of a special place in the new nomenclature, it will be a very long time, we fear, before such favourites as *Masdevallia Dayana* and *M. fenestrata* become popularly known as *Cryptophoranthus Dayanum* and *Cryptophoranthus atropurpureum*. The same remarks apply with equal force to the new appellation given by Bentham and Hooker, and which has been adopted by the authors to those gems popularly and extensively known as *Dendrochilum*, and which have now become *Platyclinis*. It may be necessary, in revising genera of plants, to make alterations in their names and in their nomenclature, but in such cases, the shorter and less cumbersome the terms employed, the more readily they will be accepted by the public at large.

“A Manual of Orchidaceous Plants cultivated under glass in Great Britain.” Part V., *Masdevallias*. By Messrs. J. Veitch & Sons.

As is the case with other books from the same source, a thorough knowledge of the subject under treatment is evinced throughout the whole work, the part dealing with geographical distribution being on equal footing with the more practical cultural notes. Little need be said as regards the illustrations and the entire compilation of the book, of which it is sufficient to state that it is in all respects equal to the previous parts of the same work, and conducted on the same principles.

The authors have, as usual, given all the information which could possibly be procured for the benefit of the public, who cannot fail to appreciate the efforts thus made by them in their endeavours to simplify the knowledge and the culture of plants which every day deservedly rank higher in popular esteem.

T. W.

ORCHIDS.*

THIS so-called new book appears to be simply a reprint of "Orchids for Amateurs," by Britten and Gower, which first appeared in the pages of *The Country* newspaper from the pen of the last named. It afterwards appeared in book form with the addition of woodcuts, &c., from Britten, but the authors did not arrange their matter in any order. This is now being done, and plants which have been introduced since the date of its issue are being added, but, judging by the two numbers before me, I see nothing added in the practical portion of the book, and I fail to see the utility of its new name.

W. H. G.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

OCT. 22.

THE meeting on Tuesday last in the Drill Hall justified the steps that the society have taken in holding a second gathering in October. It was an interesting display of fruits and flowers, marred, unfortunately, by the heavy fog that hung as a pall over London throughout the day. It is in such weather that we see the disadvantages of a gloomy structure like the Drill Hall. In the afternoon a paper on Pears was read by Mr. Wildsmith, of Heckfield.

A FIRST-CLASS CERTIFICATE went to each of the following:—

CAREX VARIEGATA.—This is a charming Sedge, shown by Messrs. J. Veitch and Sons, of Chelsea, in a large collection of table plants. When in a 3-inch pot it makes a graceful, feathery adornment for the table, and when of larger size could be used for greenhouse and conservatory decoration, especially in hanging baskets. The leaves are Grass-like and with a broad white midrib, which gives it colour, yet not a spotty appearance, as in so many variegated things. Those who have tables to dress should bear this Sedge in mind.

PTERIS LEPTOPHYLLA PRINCEPS.—A bold robust-growing Fern from Mr. H. B. May, Edmonton. The fronds upright, but arching slightly at the extremities, so as to relieve the plant of formality. The pinnae are long and rich green, the pinnules of about equal width and length, and of the same deep colour. A beautiful addition to a genus already rich in good types.

AN AWARD OF MERIT went to each of the following Chrysanthemums:—

NELSON.—This Japanese Anemone-flowered variety was certificated last season by the National Chrysanthemum Society, and is not therefore new to our readers. The flower has excellent guard florets and a well-built centre, all of a dull rose colour. It is a good addition to its class. From Mr. G. Stevens, St. John's Nursery, Putney.

STANSTEAD SURPRISE.—This is an English raised seedling, and therefore of special interest, as showing what may be done by English growers. The flowers have the true Japanese character, flat,

and with robust florets of a cherry-rose colour, the reverse silvery-grey. It will make a good exhibition flower, though a trifle too early for the November shows. From Messrs. J. Laing and Sons.

M. CHARLES LEBROSQ.—This is an ungainly name for such a charming Anemone-flowered variety. It has a good outer ray of guard florets of a buff-yellow colour, which deepens in the well-built disc. Its unusual shade should make it a favourite. From Messrs. H. Cannell and Sons.

W. NEVILLE.—This is a lovely variety of a purely self buff-yellow, and of the characteristic Japanese reflexed form. The flowers are not of exaggerated size, but quite large enough, and without a trace of coarseness. From Messrs. H. Cannell.

M. PANKONCKE.—An Anemone-flowered variety, not of an interesting colour, being deep brownish-red, but very decided and telling. The flowers are large with a fine row of guard florets and a good centre. From Messrs. H. Cannell.

EYNSFORD WHITE.—This also came from the Swanley firm of Messrs. H. Cannell and Sons. It is a Japanese variety, dense, handsome, and pure white, except for a suspicion of pale primrose in the centre of the broad-petalled flower. The florets recurve gracefully, in the style somewhat of *Avalanche*.

ODONTOGLOSSUM GRANDE (Tautz's variety).—A noble variety of the finest *Odontoglossum* of its season. The plant shown by Mr. Cowley, gardener to Mr. Tautz, carried six flowers of richer colour than in the type, but, save that they were larger, this is the chief point of difference. The intense chestnut-brown bands and blotches against the clear amber-green ground are well defined. It is one of the best forms we have seen of this splendid autumn blooming species.

A BOTANICAL CERTIFICATE went to

EPIDENDRUM SCEPTRUM.—It is rather late in the day to give any award to this old species. A large and well-grown specimen carrying four racemes of the richly-scented crimson-spotted flowers, came from Sir T. Lawrence, Bart., Dorking.

The fruit committee gave a first-class certificate to

GRAPE APPELY TOWERS.—A black variety with something of the character of Black Hamburg and berries like those of Madresfield Court. The flavour is sweet and refreshing, with the distinct delicious aroma of Black Hamburg. It is a good variety, but scarcely, we think, likely to become much grown. From Mr. T. Myles, Appley Towers, Ryde.

FLOWERS were plentiful for the season of the year, comprising chiefly Chrysanthemums. Messrs. H. Cannell and Sons had a rich selection of good types, as the lovely Japanese variety Miss Gorton, the colour an exquisite shade of blush-rose; *Avalanche*; *Condor*, an unusually broad-petalled Japanese, free, handsome, and white; *Sunflower*, a brilliant yellow-coloured variety of good shape, and belonging to the same section; *President Hyde*, an orange-coloured Japanese variety; and Mr. W. H. Burbidge, which is a full, handsome Japanese variety of great purity. The same firm had three plants of the double white *Begonia Octavie*, frequently described in these pages as one of the best things of its kind in cultivation; and *Pelargoniums* *Beauty of Kent*, salmon, and *Eynsford Gem*, bright scarlet, both single-flowered varieties. A lovely box of flowers of Chrysanthemum *Avalanche*, spotless in colour, just like balls of snowy wool, came from Mr. Wildsmith, of Heckfield, who also staged excellent flowers of Mrs. Laing, rose florets, silvery reverse; *Val d'Andorre*, bright red; *Mme. de Sevin*, magenta-rose; and the rich yellow *Sunflower*, all Japanese types. A large collection of the great autumn flower was also exhibited by Messrs. J. Laing and Sons, Forest Hill, who had massive flowers of the Japanese variety *Condor*, previously described; *M. Charles Lebrosq*, described amongst the certificated plants; *Mme. Louise Leroy*, a beautiful white Japanese flower, the lower petals touched with pink; *Bertha Flight*, one of Messrs. Laing's own seedlings, the flowers of true Japanese character, of great depth, full, and globular, and a mass of crimped white florets; and *Stanstead*

White, a variety of the same section, but of a vastly different expression, a kind of hybrid between *Lady Lawrence* and Mrs. H. Cannell, the flower loose, white, with long curled florets, and of great width. A remarkably well-grown plant of *Hymenocallis macrostephana* was shown by Mr. G. Wythes, Syon House Gardens, Isleworth, to urge forward the cultivation of this charming old species. Special reference is made to it in "Notes of the Week" (p. 377). Mr. R. Dean, Ealing, had several bunches of seedling *Pentstemons*, just to show the variety of rich colours to be obtained from a good selection of the best types. The crimsons are of great richness, also the purples, which are not of a shade to offend the sensitive colourist, but full and deep. A variety of *Primula obconica* named *Maive Beauty* was pretty, but this Himalayan Primrose varies greatly, as to scarcely justify the bestowal of a varietal name, unless the flower is of exceptional beauty. An exhibit of great interest, as foreshadowing possibly a new race of flowers was the *Rhododendron indicojavanicum* from Messrs. J. Veitch & Sons. Mr. Heal crossed *Rhododendron* *Lord Wolseley*, one of the javanicum type, with *Azalea indica Stella*, and the result is a hybrid with the characters of both; the flowers very bright orange-scarlet, small and tubular, and borne several together in a large head as in the javanicum varieties. Such a cross has never been made before, and though the flowers are not of much value as regards colour or shape, yet they show a new departure in hybridising. The same firm showed a collection of cut flowers of greenhouse *Rhododendrons* and a rich assortment of table plants comprising all the most useful types adapted for such decoration—a most interesting display (silver medal). A large collection of Ferns was staged by Mr. H. B. May, Edmonton. There were excellent plants of *Adiantum Reginae*, *A. scutum roseum*, tinted with brownish-red; *A. rhodophyllum*, rose-tinted fronds; *Gymnogramma Alstoni*, a beautiful Fern, the edges of the pinnules turned up to show the gold powdering beneath; *G. schizophylla gloriosa*, a lovely form, fronds like delicate lace; and *Pteris cretica nobilis*, a heavily crested and robust growing *Pteris*, one of the best of the genus for decoration.

ORCHIDS were few, but interesting. Messrs. F. Sander and Co., St. Albans, sent a plant of *Dendrobium Statterianum*, a tall-growing Dendrobe, with slender graceful racemes of rich rose-purple flowers deepening to a lustrous shade of the same in the veined lip. Both in colouring, form, and size the flower is similar to that of a well-marked variety of *D. bigibbum*. The same firm sent a plant of *Oncidium hæmatochilum pictum*, the sepals and petals yellow, spotted with brown, the lip tinted with purplish pink. Mr. Cowley, gardener to Mr. Tautz, Shepherd's Bush, brought another form of *Odontoglossum grande* named *aureum*, which has smaller flowers than in the type, and instead of the rich bands and blotches of chestnut-brown these are changed to a dull amber colour that is scarcely perceptible in a bad light from the greenish yellow shade of the background. The same exhibitor also had a spike of *O. Insleayi splendens*, a magnificent variety for colour, and *O. Insleayi splendens aureum*, which has rich brown sepals and petals and a pale primrose-coloured lip, marked with a few crimson spots round the margin as in the type. A specimen of *Dendrobium formosum giganteum*, smothered in the large bold flowers absolutely snow white, save for a bright yellow colouring in the centre of the lip, was shown by Mr. Gledstane, Manor House, Gunnersbury. The fine old *Cologyne speciosa* was exhibited by Sir Trevor Lawrence, Bt. It is a pity that this handsome free-blooming Bornean species is not commoner. The flowers are carried on a short spike, and form quite a study of quiet colours. The sepals and petals are brownish green, the lip white, save a rich chocolate colouring running into the throat. *Cattleya aurea Blenheimensis* came from Mr. Whillans, gardener to the Duke of Marlborough, but we could scarcely see the reason of a varietal name.

A most valuable exhibit was a collection of autumn leaves from Messrs. J. Veitch and Sons.

* "Orchids: their Culture and Management." By W. Watson, assisted by W. Bean. Upcott Gill, 170, Strand, W.C.

Such a display is instructive, as there are too few coloured-leaved trees in garden scenery, although there is a long list in books. The leaves of the Guelder Rose, *Acer rubrum*, *Rhus Cotinus*, *R. typhina*, *Ampelopsis japonica*, *Cornus sanguinea*, the Liquidambar were of various shades of deep crimson, as brilliant as any flower. Brown and crimson intermingled are characteristic of the leaves of *Acer plantanoides digitata*, chocolate of *Prunus pissardi*, and rich self yellow of *Populus fastigiata*. A bunch of *Pernettya* shoots laden with fruits were also exhibited to show the value of these dwarf shrubs in the garden in autumn (bronze medal).

Fruit committee.—There were several collections of Apples, and one first-class certificate awarded to Grape Apple Towers, described above. A collection of dessert Pears, splendidly grown, was shown by Mr. W. Allan, Gunton Park Gardens, Norfolk, who knows well how to produce large, handsome fruits, especially of such kinds as Doyenné du Comice, gathered from a west wall and tree on the Quince stock, Durondeau, Glou Morceau, Beurré Bachelier, Marie Louise d'Uccle, General Toddleben, British Queen, and Marie Louise. The fruits were all admirable specimens of the varieties represented (silver medal). A like reward went to Mr. J. Hudson, gardener to the Messrs. Rothschild, Gunnersbury House, Acton, who had thirty-seven varieties of Pears and twenty-four of Apples. Such Apples as King of the Pippins, Golden Noble, Cellini, Gloria Mundi, Cox's Pomona, Blenheim Pippin were worth mention for size and colour, and amongst the Pears, such kinds as Louise Bonne of Jersey, Duchesse d'Angoulême, Catillac, and the little Seckle. Messrs. Gaymer and Son, cider growers, Attleboro', Norfolk, showed a large collection of the Apples they use in the making of cider. There were such true cider varieties as Kingston Black and Scarlet Eve, but they also use many of our best dessert sorts, as the Ribston and King Pippins (silver medal). Two fine specimens of the Smooth Cayenne Pine-apple, each weighing 6 pounds, were shown by Mr. W. Bates, gardener to Mr. J. S. Nicholson, Poulett Lodge, Twickenham, and also a fruit of Prince Albert 4 pounds in weight. Mr. Tice, of Feltham, exhibited splendid fruits of the Blenheim Pippin Apple. The samples were clean and handsome, and in one instance of unusual size. They were all gathered from trees forty years old. Mr. R. Dean showed fruits of the Mother Apple, picked from trees twenty years old and on Crab stock. This is a handsome fruit when well grown. Messrs. G. Bunyard & Co., of Maidstone, exhibited fruits of the Bismarck Apple, both from under glass and the open air. Those from the open were of that full, rich red colour so characteristic of this large, handsome Apple, those under glass being paler, with a more delicate flesh. The Bismarck Apple, as far as we have seen it, is an excellent fruit for cooking, and of unusually handsome appearance. Mr. T. Laxton, Bedford, exhibited fruits of Laxton's Autumn Bergamot Pear; and Mr. Wythes showed fruits of *Musa paradisica* grown at Syon House. A large collection of Pears came from the society's gardens at Chiswick, including excellent fruits of Alexandre Lambre, Beurré Bosc, Glou Morceau, Beurré Hardy, B. Superfin, Doyenné du Comice, Flemish Beauty, Marie Louise, Gansel's Bergamot, and Vincuse.

CHRYSANTHEMUM CENTENARY CONFERENCE AT CHISWICK.

NOVEMBER 5 AND 6.

AMONGST the celebrations of the centenary of the introduction of the Chrysanthemum into Europe, organised at Edinburgh, Toulouse, Ghent, and other centres of horticultural activity, the exhibition and conference to be held by the Royal Horticultural Society in the gardens at Chiswick should prove interesting, for the metropolis is, before all places, the home of the eastern flower.

It is arranged that a display of flowers grown by the society will be made in the great vinery at Chiswick, Nov. 5 and 6, this being supplemented by collections of plants and flowers contributed by cultivators, many of the most eminent of these being members of the managing committee. The schedule

for the show consists of thirty-six classes, and although in some few of these the usual practice of "dressing" the flowers will be allowed, the general purport of the classes is to ensure the finest and most representative examples of natural development, the skill of the cultivator stopping short at the point where intentional modification of form begins. Thus in the classes for plants there are some special places reserved for such as are adepts for decoration, apart from the "finishing touches" of the exigent florist, while in several classes for cut flowers, the specimens are to be accompanied with natural foliage, and are to be shown as cut from the plant. In certain classes dressing will be allowed and will be carried to the highest point by experts, but the natural growth of the same varieties will appear with them to afford contrasts. The intellectual part of the entertainment will consist in the reading of papers and the discussion of points of interest. The president is Mr. T. B. Haywood, member of the council; the historian, Mr. C. Harman Payne; the essayist in new varieties, Mr. E. Molyneux; the propounder of rules for judging, Mr. J. Wright; and the recorder of progress in the evolution of the flower, Mr. Shirley Hibberd. These five will furnish the matter for the discussion of the first day. On the second day Mr. F. W. Burbidge will discourse on the production of seed, which is a crucial point in Chrysanthemum culture; Mr. C. Orchard will explain his method of converting giants into dwarfs; Mr. C. Pearson will treat on cultivation for market; and Mr. W. Piercy on the production of early varieties that flower in the open ground before the time when autumnal frosts make havoc of the garden. Another important feature of the undertaking is the appointment of a series of committees of experts, who will examine the whole of the varieties exhibited, and name the best amongst them for various purposes.

NATIONAL CHRYSANTHEMUM.

OCTOBER 23.

THE meeting of the above society on Wednesday last, at the Royal Aquarium, was the best yet held in October, both as regards the number of the exhibits and the show of novelties.

A FIRST-CLASS CERTIFICATE was awarded to each of the subjoined varieties:—

PRESIDENT HYDE.—A striking American Japanese reflexed variety, with a smooth, somewhat flattened flower of the same colour as the yellow Buttercup of the field, deepening in the centre. Its substance, breadth, colour, and solidity are great points, but there is another, and that is the dwarf vigorous habit of the plant. We want to infuse the habit of this variety more into the Chrysanthemum. From Mr. Owen, of Maidenhead.

THOMAS STEVENSON.—This is a sport from Criterion, and a distinct addition to the Japanese class. Two fine blooms of it were shown by Mr. Owen, broad, solid, and rich orange-red, with the reverse of the florets buff-yellow. It retains much the form of the parent, but the shade of colour is novel.

EMMA STEVENS.—This is a Japanese reflexed variety in the style of Amy Furze, having the fullness, freedom, and depth of that true type of this class. The colour is soft and pleasing. From Mr. G. Stevens, Putney.

Mlle. LOUISE LEROY.—This is one of Délaux's seedlings, and scarcely deserved a certificate, as we have varieties quite as good. It is a Japanese variety, pure white, full, and with florets of a drooping tendency. Against such noble white varieties as Mrs. H. Cannell or Avalanche it makes a poor figure. From Mr. W. Fife, Overstone Park Gardens, Northampton.

STANSTEAD WHITE.—We have never seen finer blooms of this English raised seedling than the two exhibited by Messrs. J. Laing and Sons. One measured 11 inches across, a noble flower, delightfully pure, solid, and with long, spreading florets, curled more or less. It is quite distinct, and should speedily become a favourite.

M. PANKONCKE.—A large Anemone variety, described in our report of the Royal Horticultural Society. From Messrs. H. Cannell and Sons, Swanley.

ROBERT CANNELL.—A beautiful seedling incurved variety, raised by Messrs. H. Cannell and Sons in their Swanley Nursery, and showing a marked advance. It is of the true incurved character, one of the flowers measuring 5½ inches in width, the shape and finish faultless, and the colour a rich chestnut-red, the upper surface of the florets deep bronzy gold. We shall expect to see this even finer, as it has the making of a matchless incurved flower.

M. CHARLES LEBROSQ.—A Japanese Anemone variety, described in our report of the Royal Horticultural Society. From Messrs. H. Cannell and Sons.

There were several good stands of flowers. Mr. Owen, Maidenhead, exhibited a number of novelties, comprising a pretty French pompon named Victorine, the flowers very small, neat, and useful for cutting, the colour deep reddish brown—an unusual shade. It was commended as a flower for cutting. Anatole Cordonnier, a Japanese kind, is not novel as regards its shape, but the flower was commended for its lustrous magenta colour, quite a self shade. It is in the style of Edouard Audiguier. A very large-flowered single variety is Charming, broad and buff-yellow, but there is no fancy for this type of bloom as yet. Mr. Owen also showed Harvest Queen, like a small Elaine, and Gladys Spaulding, an American Anemone-flowered variety, yellow centre, reddish guard florets. Mr. G. Stevens, Putney, had an incurved sport from the Japanese W. Holmes. The inner face of the florets is deep crimson, the outer bronze-yellow. It will possibly make a useful variety when well cultivated.

A charming boxful of Japanese varieties came from Mr. Fraser, Denmark Street, Camberwell, the flowers remarkably fresh considering the district. Bouquet Fait, Val d'Andorre, Avalanche, Florence Piercy, and Mlle. Louise Leroy were finely shown, together with other leading kinds. Messrs. W. and G. Drover, Fareham, showed flowers of Antonelli Feraz, an incurved variety like Antonelli, but deeper in colour; M. Lawson, a reflexed Japanese, light rose in colour; and W. M. Singerley, an American Japanese variety of a rose-magenta colour. There are too many of its class like it both in colour and style. Messrs. J. Laing and Sons exhibited flowers of the white Japanese variety Condor, a broad, thin, coarse-petalled type, by no means desirable. The Forest Hill firm also had the charming Bertha Flight in full beauty; M. Charles Lebrosq, already described; and Souvenir de Mme. Blandinieres, a Japanese Anemone flower of rich promise, the guard florets narrow, numerous, and deep glowing lake-crimson; the centre is weak, but we shall doubtless hear more of this variety.

A large collection of flowers was brought by Messrs. H. Cannell and Sons, comprising varieties exhibited for the most part at the Drill Hall on the previous Tuesday. There were beautiful blooms of Sabine, an Anemone-flowered variety with sulphur guard florets and a primrose-yellow disc; Red Precocite, a neat, deep red-coloured flower; Eynsford White, a lovely Japanese kind; and Etoile de Lyon.

BOOKS RECEIVED.

"Bromeliaceae Andreane. Description and History of the Bromeliaceae." By Ed. André. G. Masson, 120, Boulevard St. Germain, Paris.

"Les Orchidées: Structure, Histoire et Culture." By Lewis Castle. Translated with the permission of the author. F. & R. Buyck Frères, 15, Rue de la Tour Rouge, Ghent.

"Handbook of the Bromeliaceae." By J. G. Baker, F.R.S., F.L.S., First Assistant in the Herbarium of the Royal Gardens, Kew. London: George Bell & Sons, York Street, Covent Garden, W.C.

A prolific Potato.—The gardener of the forest of Glen Tana has raised 292 very large Potatoes from five sets of Sutton's Abundance.—W. C. B.

Names of plants.—W. Over, —Saxifraga Fortunei.—Miss K. Baxter, —Papaver pilosum var. Heldreichii.

WOODS & FORESTS.

FORESTRY.

MOST trees have now matured their growth for the season; consequently felling operations should be commenced when hands can be spared for that purpose. It is generally admitted by all experienced woodmen that when trees begin to cease adding anything further to their annual cubic contents they had better be cut down and sold. Acting upon this principle, plantation, hedgerow, and park trees should be examined, and such as are contracting disease or showing signs of decay from maturity or any other cause should be removed, or means used to re-establish their health at the earliest opportunity. In cases where hedgerow and park trees are to be cut down the work can always be most expeditiously carried out immediately after the crops have been removed from the fields and before ploughing and preparing the ground for the next crop are commenced. When felling such trees the work should always be done if possible with a cross-cut saw, as there is less waste of wood than when cut with the axe, and besides the trunk always looks better and commands more money and a readier sale. In order to turn this class of trees to the best advantage the tops and limbs can often be utilised to better advantage than when sold for firewood. For example, I have often realised a high price for clean grown Beech trees of large size, yet the tops and crooked limbs of such trees could hardly be sold at any price. Of late, however, for mining purposes, a better demand for this class of stuff has arisen in the shape of blocks from 20 inches to 3 feet long and from 4 inches to 8 inches square. Some other kinds of hardwood, such as Birch, Hornbeam, &c., may be utilised in the same way. There appears now to be a demand for wood of inferior quality for making paper. The wood must be free from bark and inner skin, and be cut into lengths of from 3 feet to 6 feet. One manufacturer says he can take any quantity up to 20,000 tons at 20s. per ton delivered. It is evident that the wood used for this purpose does not require to be matured, and in this lies the principal advantage, as thinnings and young trees of little value for many purposes can be thus utilised. Another important advantage is the short lengths required, as pieces that are unsuitable for many other purposes can be turned to account here. In thinning plantations, however, of Scotch Fir and Larch, trees of a suitable size can be sold to better advantage for sleepers; the lengths required in many cases are 9 feet long, 10 inches broad by 5 inches thick, one-third of which must have a flat surface of 4 inches on the back and the remaining two-thirds may be half round. Other sizes of sleepers in demand are 9 feet by 9 inches by 4½ inches, slabbed or half round; 8 feet by 8 inches by 4 inches, half round. These are generally cut from Scotch Fir. Larch sleepers are generally 8 feet 9 inches by 10 inches by 5 inches; another size is 8 feet by 9 inches by 4½ inches. It is always understood that the wood must be fresh and free of rot or blemish of any kind. When these trees are of considerable size they can be turned to the best advantage by cutting up the larger portion of the trunk into planking, boarding, and scantlings of large size, but the upper part of the stem when straight and of a suitable size can be most profitably used for half-tree sleepers.

We often hear a great deal said about the quality of wood, but it is astonishing how little attention is paid to the quality of this class of

trees, provided they are free of rot or other blemish. I have sold trees produced upon mossy ground at equally as high a price as those grown on hard, stony soil. I have always found that appearance claims the first attention of the wood merchant, and if the trunk is clean, free of large knots and rot, and of a pretty cylindrical shape throughout, I have generally realised the same price for all qualities alike. With hard-wooded trees, however, the case is rather different, as quality here seems to be a matter of the first importance; at any rate, buyers, as a general rule, give a good deal of attention to this point and vary their prices accordingly. The severe gales of wind and rain which we have experienced of late throughout the country have done immense damage to property of all kinds; the woods in many parts of the country have suffered very much, the trees having been torn up by the roots in thousands. In Ireland, where the storm raged with great fury, the value of trees destroyed amounts to some thousands of pounds. This in all probability will have a tendency to glut the market for some time. In plantations Oak trees upset by the wind need not necessarily be cut from the roots at present. The better plan is to leave them attached till the barking season, when they should then be cut and the bark removed and turned to account.

J. B. WEBSTER.

Laburnum fences.—To make an ornamental Laburnum fence, plant small young trees in a slanting direction, about 6 inches apart, or more if large. When you have planted one tree leaning in one direction, plant another in the opposite direction, so as to form a trellis-work, and so on to the end of the hedge you wish to make. Where the trees cross each other, remove a small piece of bark from each, tie them together, and clay them as in grafting; this will cause the trees to unite, and the result will be one of the prettiest and strongest fences imaginable.—J. M.

Planting too closely.—A great mistake is often committed by planting large trees, such as the Lime and the Elm, too closely, so as to form groups. In a young state, what appears to be ample room, is found, when the trees have only half grown, to be quite inadequate, and thinning becomes a difficulty; if it be done at all, the symmetry of the group will be spoiled, and, if left unthinned, the trees grow into what looks like a compact group from a distance; but the outside trees must of necessity become one-sided and lean outwards, while the inside trees become bare poles with only a few twigs at the summits. The permanent trees in a plantation, if intended to attain a fully developed stage, should never be planted closer than 54 feet; that space is even too little for Oaks or Beeches.

Myrobella for covert.—We have just purchased some thousands of this shrub (*Prunus Myrobalana*) with the view of forming a covert with it, but how they may answer for this purpose I am not at present able to state. One good quality is that the plants lift well, with plenty of good fibrous roots, after being two years in nursery rows. I have had an opportunity of trying it as a hedge plant, but should it continue to grow for a few years as rapidly as it did last summer, in my opinion it will be too strong a grower, unless for wide and high hedges. At the same time as we planted the Cherry Plum hedges we planted out a quarter with Sloe or Blackthorn, which were treated in the same manner, but the Myrobella made double the growth of the Blackthorn. When our hedge plants were received they were very small, with only a single shoot to each plant. We planted them out in the home nursery, but not knowing how they might succeed in this district, they were planted in the corner of the nursery, where the ground is rather wet, of a poor, heavy, clayey nature, and somewhat shaded by large Elm trees, whose roots, however, did not extend to the soil occupied by the Myrobella plants. They were planted out 3 feet between the rows, and from

12 inches to 15 inches asunder in the row. The first season they made very good progress, but last summer their growth was something extraordinary, many of the shoots being from 3 feet to 4 feet long, thick and strong in proportion. The growth was so vigorous and rapid during the two seasons, that the ground was a perfect thicket of fine strong plants, many of the stems being as thick as an ordinary walking-stick. Had they been planted in a good rich soil it might have been expected that they would have made fine growth, but in such poor ungenial soil it was remarkable.—J. S.

Cotoneaster affinis for coverts.—Nothing can be more beautiful in the way of berried shrubs at this season than a well-grown specimen of this *Cotoneaster*. We have a plant of it in the shrubbery 20 feet high and about as much through, every branch of which is heavily laden with bunches of glossy red berries. Every year it produces fruit in the most profuse manner. It is a plant that well deserves a place in every shrubbery, as it requires no more attention than the common Laurels, among which it is growing. It is also well adapted for planting along the margins of coverts or game preserves, as it affords abundance of food for pheasants, which are very fond of its berries. I have started from eighteen to twenty pheasants at a time from under its branches. Our plant of it here is exposed to the east, and is partially shaded on the south and west by a very large Lacombe Oak and other trees. Probably the more fully it is exposed to the influence of the sun the more freely does it produce its beautiful clusters of fruit. All visitors greatly admire it, but scarcely any of them know what it is. Young plants of it are readily raised from seed.—J. G., *Devon*.

Hedges of Sloe.—This shrub (*Prunus spinosa*) is by some called the Spring Plum; by others the Sloe Thorn; but most generally it goes under the name of the Sloe or Blackthorn. In situations where the soil is loamy and not overcharged with moisture, this shrub is found to answer very well for the purpose of fences. It grows rapidly, has formidable spines, and is very lasting. It has no claim upon our attention, however, beyond the Hawthorn, whilst it falls very short of having all the recommendations applicable to that tree. The great fault of the Sloe is its suckers, which it sends up in such profusion as to threaten the usurpation of whole fields in its neighbourhood. The plants should be always grown from seed, in which case few or no suckers will rise from the roots. The fruits are ripe in October, when they should be gathered and laid in a heap, mixed with sand, in the open air, and turned over several times during winter until the pulp is decomposed. Advantage should be taken of open weather during January for the purpose of sowing them, which should be done in beds, with a covering of 1½ inches in depth. When two years old they should be transplanted into rows to remain for one year, when they will be fit to be removed into hedge-lines as recommended for the Hawthorn. The Sloe being deciduous, it is to be planted chiefly to divide arable fields.—J. G.

Moving trees.—Some have an idea that a tree cannot be moved successfully unless a large ball of earth is attached to it, but where there is not machinery sufficient for that purpose, failure is often the result. My system is to begin at some distance from the base of the tree—rather further, in fact, than is usually practised, and to comb the soil away from the roots, injuring them as little as possible. If a tree be gone properly round in this way and the roots saved, success is often more certain than when trees are transplanted with large balls; such, at least, is my experience.—D.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

GRIFFINIA HYACINTHINA AND ITS CULTURE.

As I see my name mentioned in connection with *Griffinias* and their culture, I write to make a few corrections as to the treatment they receive in our garden, and also to express my surprise that the treatment described in the article accompanying the *Griffinia* plate in the last number should be general. If it be so, then all I can say, no wonder *Griffinias* are reputed unsatisfactory or difficult bulbs to grow well.

Some seven years ago a paragraph appeared in *THE GARDEN* on *Griffinias*, which was evidently written by one who knew them well in their own country (Jamaica, if I remember rightly). He stated that they were evergreen bulbs, growing in deep shade in moist woods not far from the sea, where the strong trade winds tempered the heat in the hottest season. He then suggested that to grow them successfully in England they would require a rest in summer, as so many stove bulbs need, but that as they always grew in moisture and shade, they should be rested in a cool fernery.

This treatment has been carried out with us, and has succeeded beyond our expectations; instead of the bulbs losing their leaves, they are evergreen, and each autumn the bigger bulbs bloom freely, two, and even three strong spikes being sent up from a large bulb. Moreover, they seed equally freely, so that I generally have to pull off the big bunches of seed for fear of weakening the bulbs.

The *Griffinias* stand in the shadiest part of the stove from October to May, and are always kept well watered. In the end of May they are placed in equally deep shade in the cool fernery, but perhaps do get less root moisture during summer. In September they always throw up their flower-spikes, when they are placed in heat to bring up the stems to their full length before they are brought into the conservatory or house, where they last for some time in bloom, and are always much admired with their bright lavender-blue flowers and abundant leafage.

After this they are shaken out and repotted in loam, peat, and sand each year, for the constant heat and moisture they enjoy make the soil apt to get sour; moreover, *Griffinias* are hungry things, and refuse to bloom if at all starved either in food or temperature during their time of growth, which continues through winter and spring. I find that *G. hyacinthina maxima* is freer and finer than the type, but its broad leaves are very soon scorched and destroyed by sunshine; the type, however, is not so sensitive. *Griffinia Blumenavia* is described I see as pale lilac in colour. This is an error, for, as I have seen and know it to be true, it is of a charming creamy white with a soft rosy throat. Hitherto, when I have attempted to get it from a nursery, it has always turned out *G. hyacinthina*, so perhaps "W. W." has had the same misfortune without the luck to have seen the real thing, which is, to my fancy, extremely pretty.

The variety depicted in the plate is remarkably large and deep in colour, finer than any I have yet seen, so I would suggest *M. de Graaf*

should be asked for his secret, or if his bulbs come from another island.

EDWARD H. WOODALL.

CHRYSANTHEMUMS.

E. MOLYNEUX.

NEW VARIETIES.

MUCH interest will be manifested in the promised new varieties. Japanese varieties will no doubt preponderate in point of numbers. The greatest interest will centre in Mrs. Alpheus Hardy, a variety of American introduction which has been highly praised, but judging from its growth it is doubtful if we shall see it at its best this season. Many of last year's new varieties will be eagerly watched to see if they are worthy of the opinion formed last season after another trial under altered conditions. *Avalanche* will maintain its high position, and will rank as the finest white *Chrysanthemum* in existence; the form of its blooms, the freedom with which they are produced, and the splendid habit of growth are strong points in its favour. Mrs. Falconer Jameson will startle those who have not previously seen it in perfection by its extremely dwarf sturdy habit and fine blooms. *Sunflower* belongs to a type of flower much admired—narrow florets having a drooping habit, yet showing a full centre; the colour is a bright orange-yellow, very attractive. *George Daniels*, *Etoile de Lyon*, *Condor*, *Puritan*, and *Mons. Bernard* all promise very well. The new and really good varieties added to the incurved section are so few, that any good sort is always warmly welcomed. Blooms of Miss M. A. Haggas and *Violet Tomlin* will no doubt be seen in good condition, and for these varieties I expect a popular voice of praise. They come from such good stocks (*Mrs. Heal* and *Princess of Wales*), that they cannot fail to be good. Then, again, the colours of both are what is wanted—the former a pure yellow, the latter a purple-violet. *Anemone Japanese* will receive a few additions to their class, no doubt, as this is fast becoming a popular race. The colours, too, are improving. Single varieties will no doubt receive a fillip by the addition of superior kinds or the more extensive patronage of those already in vogue. Admiral Sir T. Symonds will, I doubt not, win over some admirers to the side of single *Chrysanthemums* for decoration. The colour of the flowers is a rich orange-yellow, while the size and form are all that can be desired in blooms of this section. That there will be a very busy season for exhibitors, judges, and reporters no one will deny, as the fixtures are so thickly arranged. One or two fixtures of shows is to be regretted, because one place or the other must necessarily suffer.

Exporting Chrysanthemums.—Now that the *Chrysanthemum* is such a popular flower, not only in this country, but also throughout Europe, the United States, and, in fact, in most temperate regions of the globe, there is a continual interchange of plants, the losses among which are very considerable, and while many of them are unavoidable, on the other hand, by carefully preparing the plants before packing, the risk of losing them will be considerably lessened. The best time of the year to send *Chrysanthemums* on a long journey is during the autumn months, and those that are starved in small pots stand by far the best chances of success. Any of our plants intended for export are placed in a spot fully exposed to the sun throughout the summer, and, in consequence, they become very hard and woody. Being in pots only

3 inches or 4 inches in diameter, little is contained therein but a mass of roots, and if the plants are packed in a moderately dry condition they will stand a long confinement without injury. About a month before sending they should be removed under glass, just to ward off heavy rains. All the air possible must be given them, but it is very essential not to overwater at that time. In packing, the plants may be turned out of pots and some dry Moss tied tightly around their roots, but they travel still better if allowed to remain in the small pots in which they have grown. They must then be tightly packed in a box, taking care that there is sufficient space allowed for a free circulation of air between each layer of plants. The best packing material is fine shavings, as they tend to dry up any superfluous moisture and thus prevent decay. The box having been packed must have a number of holes bored therein to allow the air to circulate, when the plants can be safely sent for a journey of a month or even more. In sending a few by post for a long distance the roots should be allowed to have some of the soil in which they have grown still adhering to them, and the whole of the roots are then to be enclosed in some waterproof material, the best for the purpose being the very thin tissue-like gutta-percha, which can be obtained at most chemists.—H. P.

PROSPECTS OF THE SEASON.

THE time is fast drawing near when the results of the past eleven months of labour spent in cultivating this plant will be realised. No matter for what purpose, or under what method the plants have been grown, the results are anxiously awaited. There is not the slightest doubt but that the number of cultivators is increasing. This is proved by the additional societies formed annually for the encouragement of the growth of *Chrysanthemums*. Almost every town and many villages, too, have their *Chrysanthemum* show, and in the majority of cases they are a success, financially as well as otherwise. This cannot be said of many societies which hold summer exhibitions. Some persons aver that the *Chrysanthemum* has had its day, and will quickly give way to some other flower which fashion decrees shall lead the way, but I say, and boldly, too, that long will she remain Queen of the Autumn. With extended lists of varieties the interest is kept up in some districts to fever heat at this time of the year. The craving for novelty is so strong in the minds of interested people, that any new variety possessing sterling qualities is sure to find a ready sale. But I believe much more interest even than is now displayed would be apparent in the cultivation of what are termed novelties if a little more care were exercised in describing the new varieties so profusely sent out annually. Many people have been so deceived in what they depended upon as being of first-rate quality, and which afterwards proved worthless, that they do not buy the new varieties. Varieties which do possess merit are quickly recognised, no matter the source from which they come, and cannot be long hidden under a cloud. It is rather too early yet to exactly determine the merits of new varieties, but so far their appearance is encouraging. But my business in dealing with this heading is to give those persons who are not experienced cultivators some idea as to the probable results of the coming season regarding the quality of the flowers produced. On all hands it is admitted to be an early season, more so than any I have ever experienced, and is caused no doubt by the extremely hot weather during June, and again in September, which brought on the different phases of the growth of the plants too rapidly, causing them to form their buds at too early a stage. Societies with early fixtures will no doubt reap the best results in the matter of exhibitions.

On the whole, I think the season will be a good one; the plants appear to be strong and well matured where the growths have been carefully manipulated. Maturation of the wood is absolutely essential to obtain success. It is useless to expect perfect blooms, particularly of the incurved varieties, from plants which were drawn up weakly from

the start and have now soft, sappy stems. Neither is it possible to obtain perfect blooms from plants which are unduly gross in their growth and consequently furnished with unripened wood. In these days of brisk competition something more than mere size of bloom is necessary to win prizes. Solidity is one, if not the main point to study. Experienced judges prefer a moderately-sized solid flower to a broad, loose, flat one. The former is obtained from plants thoroughly matured, while the latter class of bloom is generally the result of unripened, grossly-grown plants. No doubt at the earliest shows many blooms will be seen a trifle rough in quality owing to the very early date at which the flower-buds were formed, and which in many cases growers were afraid to discard, knowing well that the largest blooms, if accompanied with other points of quality, are to be preferred to smaller ones; but in many cases this year the early formed buds are useless, which the inexperienced cultivator did not understand. Not so with Japanese varieties. In the Japanese section size is the main aim, but it must be accompanied with fullness of the flower as well as perfect colour, but in the case of incurved varieties, smoothness of the petals is a feature not to be lost sight of. In some districts the plants cultivated for large blooms have grown beyond the average height, while in others they are below what they are in some seasons. Where the plants are dwarf it is generally owing to the position being high, and consequently the atmosphere drier. In all instances that have come under my notice, the plants are well clothed with foliage, which must be an advantage in the development of good blooms. The plants generally have escaped severe gales of wind. Of course, there are exceptions, but on the whole the results appear satisfactory.

E. M.

CHRYSANTHEMUM NOTES.

THE SEASON.

THE season of 1889 promises to be more brilliant than any of its predecessors. The warmth of June and the summer sunshine of September have brought on the plants too quickly to please those who intend to exhibit at late shows, but the early exhibitions will reap the benefit. It is one of the earliest seasons we remember, and if the strength and well-ripened condition of the plants be any criterion of the results that may be expected, very few inferior flowers will be found. The exhibition season opened on November 1 with a show at Havant, and from thence onwards through the month there will be no cessation of exhibitions. On every day in November throughout the length and breadth of the British Isles some town or village will hold its annual show of the gay flower. It must be a flower-forsaken district that has no such annual commemoration, so thoroughly national has the Chrysanthemum become in England. Each year sees it rise to greater eminence, new types introduced, and new societies established. Why this is, everyone knows who has studied the peculiar adaptability of the plant for general culture, its apparent indifference to the smoke and evil atmosphere of great towns, its hardy constitution and glorious flowers, which shine out brightly in the gloom of November and December. This year cultivators have not been caught napping. Last season the plants were sadly damaged by the unexpected frost of October 2, which destroyed hundreds of flourishing specimens waiting for house room. This season before September was out the majority of the plants were safely placed for the winter, the taste of frost early in the month giving warning of what might be expected later on. In the collections so far visited the flowers are opening well, but the damp atmosphere, absence of sun, and miserable fog have rotted many blooms, so as to necessitate quick cutting. We want a touch of the real autumn sunshine and atmosphere to bring on the flowers to the exhibitor's satisfaction.

JAPANESE ANEMONE VARIETIES.

This season will be remembered for its many additions to the class known as Japanese Anemone. It is scarcely well defined, but with care there should be no difficulty in allotting to each variety

as it appears its proper place. The large Anemone flowers have a characteristic distinctness in the broad ray florets, arranged with such regularity as to form almost a circle; in the Japanese the ray florets are not of such prim regularity, but of various lengths, breadth, and disposition. This section is interesting as much from its diversity of character as from the fantastic beauty of such varieties as *Fabian de Mediana*, a lovely, indescribably quaint beauty when in perfection, as we saw it the other day in the Finsbury Park collection. Those that are mentioned below are not of this type, but interesting and promising novelties. *Jeanne Marty* is a beautiful flower of its class, not new, but introduced about three years, so that it is already in the hands of ardent cultivators. The guard florets droop in characteristic fashion, the colour pale rosy lilac, deepening into a warmer shade of the same in the full, well-built centre, which in good blooms measures frequently over 4 inches across. Its value has already been recognised by the National Chrysanthemum Society. *M. Charles Lebrsq* is a distinct variety of unusual colour, hampered, unfortunately, by an absurd name; the guard florets are well developed, buff-yellow in colour, the disc bright yellow, the result of the association of two such soft hues being a happy piece of colouring. *M. Pankoncke* is another fine flower spoilt by an ugly name; the guard petals are deep rose-crimson, somewhat dull, the well raised disc brightened by a gold tip to the florets. These are worthy additions, and we only hope others as rich in colour and faultless in their characteristic form will be made next year. It will require the greatest discrimination to keep the section thoroughly well defined, as already a few of the types verge closely on the true large Anemone division.

CUT-BACK PLANTS.

It is a pleasure to find the cut-back method of growing Chrysanthemums extending on all sides. It is a sign of the times, a protest against the mop and stick style of plant that needs a ladder to view the flowers perched on the gaunt stems. The cut-back plants have great uses; they are just the thing for small greenhouses and conservatories; while admirable groups may be made with the help of other plants. They grow about 2 feet high, and the cutting down induces a wealth of rich green vigorous foliage that clothes the stems to the edge of the pots. This is the plant that the gardener will find helpful, as the flowers individually, though not of exhibition size, are well shaped, excellent in colour, and not unduly small. Those who have not tried this way should do so where specimens for decoration are required. The process is very simple. It consists in striking the cuttings and growing the plants in the usual way until about the first week in June. At that time cut them down to within a few inches of the soil, and as a natural result several strong laterals will shoot up. Thin these down to three or four and replot the plants into the pots in which they are to bloom. To secure good flowers only one should be allowed to each stem. By November the plants will be full of bloom, and fit to embellish the ancestral hall or modern drawing-room. There are some varieties that resent most markedly this severe pruning, but the noble *Avalanche* will stand it with impunity. In THE GARDEN of December 24, 1887, a list is given of the most useful incurved and Japanese varieties for converting into dwarf plants.

NEW INCURVED VARIETIES.

The incurved section has until the last two seasons remained much as it was years ago. There was no change, the same endless repetition of well-known varieties, but at last a break has occurred, and it seems we shall soon have a number of first-class novelties. Last year we had the rich rose-coloured *Violet Tomlin*, a sport from *Princess of Wales*, to which it may be likened except in colour; *H. Shoemsmith*, a distinct novelty with the characteristic finished beauty of *Mr. Bunn*, from which it is a sport, but showing, instead of a glowing yellow colour, a distinct reddish-orange shade; *Alfred Lyme*, a silvery lilac sport from *Novelty*; and *Lady Dorothy*, another sport of the prolific *Princess Teck* family, the finished form of which

it retains, but the colour is a decided shade of cinnamon-buff. A very beautiful incurved flower certificated last season by the National Chrysanthemum Society is *Miss M. A. Haggas*, a sport from *Mrs. Heal*, and making the fourth variety of the *Princess of Wales* family. The whole character of the flower is like that of *Mrs. Heal*, but the colour is pure golden yellow, as clear and decided as in *Golden Empress of India*. Another exquisite incurved Chrysanthemum is *L'Automne*, awarded a certificate by the same body. It is not too large, but beautifully finished, and of a clear soft buff colour. We hope this will be largely grown. Then we have the rich golden yellow sport from *Princess Teck*, viz., *Mrs. Norman Davis*, the pure white *Lord Eversley*, and the latest addition of all, *Robert Cannell*, a seedling raised by Messrs. H. Cannell and Sons, and certificated at the last meeting of the National Chrysanthemum Society. It has the character of a splendid variety, quite up to the exhibition standard. A description of it is given on page 399.

PROPAGATING BY LEAVES.

A very interesting exhibit was recently brought before the floral committee of the National Chrysanthemum Society in the shape of a well-grown plant propagated solely from leaves, not stripped from the stem with a bud attached, but from the pure leaf. It was exhibited by *Mr. Ironside*, who had seven other specimens raised in the same way, but only kept one to show the success of the experiment. It was certainly interesting. Other readers can, perhaps, send a note upon successful propagation in this way.

ENGLISH RAISED SEEDLINGS.

A distinct era is about to dawn in the history of the Chrysanthemum. It is the raising of plants in England, occasioned in no small measure by the rubbish sent over from Continental nurseries. There is a parallel instance in the case of the Rose. Of the hundreds of kinds reputed to be new, a paltry half dozen is frequently the only reward for a year's careful labour in the hope of obtaining novelties which shall be distinct advances on existing kinds. So far the raising of seedling plants has justified the results. The new incurved variety, *Robert Cannell*, is one of this class. Then we have the lovely white Japanese variety, *Mrs. J. Wright*, the more robust-petalled, but quite as pure *Stanstead White*, and the cherry-rose coloured *Stanstead Surprise*. There is a great future in the way of exported varieties from Japan, if the varieties *Edwin Molyneux* and *Avalanche* are typical of what we may expect. One nurseryman said he expected a large consignment from the land of flowers, and if the plants survive the journey, more surprises, no doubt, will await us. But too often more than two-thirds are dead, like the Orchids that used to be sent over in the early days of their cultivation. We have plenty of evidence of the remarkable development of the Chrysanthemum in the hands of the Japanese, and by searching in its birthplace and nursery, we may obtain striking and noble varieties such as we have already had a glimpse of.

THE EARLY CHRYSANTHEMUM.

We were much struck this year with the good use made of the early Chrysanthemums in the London parks, especially in *St. James's Park*, where some excellent gardening is to be seen. Such varieties as *Mme. Desgrange* and the golden sport *G. Wermig* are planted with dark green shrubs and Evergreens as a background to bring out the soft colours of the Chrysanthemum flowers, and in one or two instances whole beds of one distinct variety were formed to make as rich a show as possible. It is by such a good use of the mid-September and October varieties that our gardens are made gay when summer flowers are losing their freshness and lustre. In an American contemporary a writer asserts that Chrysanthemums are not wanted until November. This is mere talk. Indoor varieties are not wanted until the encircling gloom of late autumn bids us leave the garden; but how about the many good outdoor kinds? These surely have a right to consideration, and their frequency

in gardens and parks is a true sign of their value. The early-flowering Mrs. Hawkins is a rich addition, and the more we see of it the more its worth becomes apparent. The solidity, substance, and breadth of the flower keep it fresh for many days in water, and both in and out of doors its richness of colouring should bring it into constant use.

EXHIBITING NOVELTIES.

There is some confusion as to the number of flowers of novelties that have to be staged before any award can be given. We may briefly mention that for the Royal Horticultural Society three are required, and only two for the National Chrysanthemum Society. C.

Chrysanthemum Mary Edd.—This Chrysanthemum was brought to Chicago eighteen years ago by Mrs. Cushing, and given to John Goode & Co., who have grown it yearly for cut flowers. No new comer has been able to supersede it, and now whole houses of it are grown for early cut flowers. I am unable to find it in any catalogue, and I am led to believe that it is comparatively unknown outside of Chicago. It comes into bloom October 10 to 15, is pure white, 3 inches in diameter, full double, high centre, with flat petals of good substance and lasting, in clusters; a dark green leaf of good size; the plant is usually dwarfish, growing about 20 inches high, but may be grown to a large bush 30 inches high or a dwarf 6 inches high, as I now have specimens; holds its leaves to the last, and after the first crop is cut a second smaller one is thrown out from lower down the stems. It is valuable for early flowering.—*American Florist.*

Chrysanthemum Mrs. Alpheus Hardy.—It will interest Chrysanthemum lovers to know that this American novelty is flowering well in the nursery of Mr. Ware at Tottenham. No Chrysanthemum has ever excited such marked attention, partly from its somewhat romantic history, but more from the singular character it was supposed to bear. An engraving of it appeared in THE GARDEN of April 6, with a detailed account of its history, and we refer our readers to that illustration for a correct view of this striking variety. The engraving shows the flower in its true light. The plant at Tottenham carries six blooms in various stages of expansion, one fully open. This is of distinct incurved form, but yet not sufficiently close for a typical incurved flower. It is what must be called an incurved Japanese, the shape globular, and the petals broad, waxy, thick, and spotlessly white. The inner face is quite smooth, but the outer surface is feathered over with hair-like processes, just as shown in the illustration—a distinct and novel feature. Its introduction marks an era in the history of the Chrysanthemum. The plant was propagated last spring, and is evidently of vigorous habit. Next season when the cuttings have had a year's growth, we shall have still finer flowers of this beautiful and characteristic novelty. Suffice to say the flowers are in accordance with published descriptions.

SHORT NOTES.—CHRYSANTHEMUMS.

Black Douglas is a free, dwarf-growing pompon, the flowers well shaped and of a deep crimson colour. Plants in full bloom are very showy.

A sweet-scented Chrysanthemum is Saint Leonard, a reflexed variety of a rich rose-crimson colour. Its great charm is the sweet Violet-like fragrance of the flowers. There is a plant of it in the Chiswick collection.

Helena is a pretty pompon variety, which has been in cultivation many years. There are two plants of it at Chiswick, both bushy, about 18 inches high, and smothered with small purple-rose flowers. Its dense, bushy, and dwarf habit is its great recommendation.

Mrs. J. Wright.—This lovely Japanese variety, introduced by Messrs. Laing and Son in 1886, is one of the finest of white Chrysanthemums. Its crimped, somewhat fluted florets make up a wild, rugged, characteristic Japanese flower, quite unlike those of the flattened type so much in vogue. The plant has one fault—its tall growth, but such a drawback can be

overlooked when the blossoms are so superb. There are splendid blooms of it in the collection in the Temple Gardens.

Maiden's Blush is a Japanese reflexed variety, shown by Mr. George Stevens in 1885, and to whom a certificate was given for it by the Royal Horticultural Society. Some of the best blooms we have seen this season are in the Temple Gardens show; they are very full, broad, and creamy white, tinted with delicate blush-pink.

FERNS.

W. H. GOWER.

ASPIDIUMS.

I CANNOT understand why the larger-growing members of this family are so persistently discarded, and I am sure if Fern growers and so-called Fern lovers were to pay more attention to these plants, they would amply compensate for any pains bestowed upon them. I know that as a rule ladies like small-fronded and somewhat small-growing kinds, because many of them only have Wardian cases in which to grow their pets. In this way their ideas are cramped, and they dare not attempt the cultivation of a plant which grows to 2 feet or 3 feet in height and measures as much in diameter. On this account they must grow small-growing kinds. I found only a short time ago, however, that ladies, where they have the opportunity, aspire to higher ideas, for in a little garden, kept with scrupulous care, I found a fernery with some of the finest examples of Aspidiums of the large-growing kinds I have ever seen, and they were not covered with scale, as is too frequently the case with these plants. One lady told me that although her gardener was a most excellent man, she had nearly made up her mind to discharge him, for whilst everything was done in the best style in the open air, her house was always miserable-looking, and that she never had a bit of flower. The house was one of those places put up by the architect to hide an ugly corner, and I myself used to condemn architects for putting up these structures, but of late I have altered my views, and have come to the conclusion that it is the best thing an architect can do under the circumstances. After he has finished his work he does not say to the occupier, "You shall grow such and such plants in this house;" the fact is it is the occupier's fault in trying to grow flowering plants in a place quite unsuitable to them. In such a fix was the lady to whom I am now referring, when in a fortunate moment she determined to turn it into a fernery, and now the house is quite a picture, and quite in keeping with the outdoor garden. If anyone wants to succeed with plants he must be sure that the aspect will suit them. Do not grow Heaths, New Holland plants, Crotons, Ixoras, nor Dipladenias where only Ferns will grow. In the fernery referred to above there were three species of Aspidiums, all of which were exceedingly well grown. They consisted of the following:—

A. PLUMIERI, not the *A. trifoliatum* which frequently passes for it, but a very large form with the upper pinnæ considerably over 6 inches across and lobed at the base, and the lower pair of pinnæ also lobed, but more obscurely. *A. Plumieri* is a bold, handsome and massive plant which looks well growing upon an eminence some 4 feet or 5 feet in height. It has an erect caudex, does not produce many suckers, and although spores are abundantly produced, it does not appear to come freely from seeds.

A. EBENUM was another variety found here; it was 18 inches high, bearing about a dozen of its deeply lobed fronds, which in some instances were upwards of 6 inches across and entire, but deeply lobed, whilst other fronds were nearly a foot

across and deeply pinnatifid, the shining jet black stems being a decided feature.

A. LATIFOLIUM (the *A. melanocaulon* of Blume) was also done well, the fronds each 2 feet high and about 9 inches across, with numerous pairs of broad, deeply lobed pinnæ. It is a beautiful species, of which I have specimens quite identical, gathered by Milne in the Fiji islands. Its long, intensely black shining stems are very conspicuous.

Nothochlæna trichomanoides.—What a beautiful basket Fern this is! I saw a large basketful of it growing in the same house with the above-named Aspidiums. The fronds were over a foot long, the pinnæ deep green above, white beneath, with a farinose powder, and bordered with a marginal band of black sori. Grown in this way, *N. trichomanoides* looks much better than when the fronds are tied up. *N. rufa* is equally pretty, but it is more delicate in constitution than the previously-named plant.—W. H. G.

NOTES OF THE WEEK.

Yucca gloriosa variegata.—A splendid specimen of this *Yucca* is in full flower in the open ground in the Epsom nursery of Mr. Morse. It makes an imposing feature, especially just now when there are few outdoor plants in bloom.

The Clyde disaster.—We have received the names of several additional subscribers to the Widows' and Orphans' Fund, and are pleased to hear a good sum is being collected. Subscriptions should be sent to the hon. sec., Mr. F. Horman, Colchester.

Primula obconica is a rich gem for autumn and winter, and, like the yellow-flowered *P. floribunda*, is always more or less in bloom. Just now its soft mauve-tinted flowers are a feature in the Tottenham nursery. It was introduced from Western China in 1882, a year before *P. floribunda* appeared in our gardens.

Orchids in the Epsom nursery.—Several interesting species are in bloom with Mr. Morse. An excellent plant of the creamy white *Angraecum articulatum* carries twenty-one flowers, and such distinct Lady's Slippers as *Cypripedium politum*, *Haynaldianum* and *calurum*, besides commoner kinds, are also in bloom.

Primula floribunda.—This pretty Himalayan Primrose is flowering profusely in Mr. Ware's nursery at Tottenham. It is a charming thing at this season. There are three varieties, one with small puny flowers, and it is this one that should be avoided. Fogs are as hurtful to the plants and flowers of this as they are to the Butterfly Orchids.

Saxifraga cortusæfolia.—This, a near ally of *S. Fortunei*, was lately introduced from China by the Messrs. Veitch, and flowered first in their nursery at Coombe Wood. Although a useful autumn plant, it is altogether inferior to *S. Fortunei*, the flowers being much smaller, not so pure, and the leaves of a dingy green. Where *S. Fortunei* is grown this species need not be added.

Disperis Fannini.—I herewith send you a spike of this extremely curious, yet little heard of South African terrestrial Orchid. Almost every Orchid flower bears a resemblance to some insect; if so, tell me what the flowers of this dainty gem are like. With me it grows quite easily in light leaf mould, and enjoys a moist cool atmosphere. It grows about 1 foot high and produces from three to six flowers on a spike.—C. G. VAN TUBERGEN, J.N., Haarlem.

Winter Gladiolus (*Schizostylis coccinea*).—Although on the whole an unsatisfactory plant for out-of-door cultivation, it has proved one of the most attractive plants we have in the open at the present time. It is growing in a rich, well-sheltered, peaty bed, and is just now a feature with its numerous Gladiolus-like stems of bright crimson flowers. It has certainly never done so well with us as this year, but then we give it no protection, even in severe frosts. It simply has to take its chance with the other plants near by.—K., Surrey.

Polygonum sphærostachyanum, of which I enclose you a few spikes, is really an exceptionally pretty novelty. For the last three weeks it has again been in bloom with me for the second time. The closely packed, bright carmine flower-heads are attractive enough in summer, but now, when autumn days have set in, it is quite a treat to see flowering plants

like this in the garden. This species is also especially well suited to pot culture.—C. G. VAN TUBERGEN, JR.

Galax aphylla is just now a remarkably beautiful foliage plant, the colours ranging from bright glossy green to deep bronze-crimson, and a few richly variegated. It is a plant of the easiest culture, and does well in peaty soil with almost any exposure. It makes a charming edging for dwarf Rhododendron beds, Kalmias, and other American shrubs. It has a vigorous habit, and the reputation of being the chief cause of the scarcity of *Shortia galacifolia*. They grow together, and the *Galax* being the stronger is crowding out its weaker relative in the struggle for existence. The leaves of the *Galax* are said to be collected in W.N. Carolina, and sent north to be used in winter decoration.

Roses and Dahlias.—These plants are still blooming beautifully in the neighbourhood of Dartford, judging from some flowers which have come from a friend, and which were specially welcome in London during the wretched fog and wet of the last week. Dartford is such a short distance from us, that we may well wonder what has come over us in the metropolis. I hear, too, that whilst we have been swamped with rain and nearly stifled with fog, at Brighton and in the neighbourhood the weather has been simply beautiful. A friend sends me from there a box of handsome white *Chrysanthemums* from plants in the open air to show how gay they are.—W. H. G.

Flowers at Weybridge.—I do not see *Polygonum vacciniifolium* often in gardens. We have in the cottage garden a mound bed about 6 yards long and 3 yards wide now covered with the pretty pink flowers. It is valuable for its late blooming and it stands rough weather. I have to-day (October 22) picked about the last of the *Lilium speciosum*; the open flowers are somewhat battered by wind and rain, but the buds come out well in water, and in tall green glass vases have a very good effect on the dinner table.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath*.

Peach Lady Palmerston.—Amongst the varieties of Peaches enumerated by your various correspondents in giving lists of the best flavoured sorts, I have not seen this kind mentioned. I consider this to be the best September Peach for flavour. It is of large size and the tree bears freely. I think it ought to be included in every list which is meant to contain the best varieties for a year's supply. I did not know the variety until I had a plant sent from Messrs. James Backhouse and Son, of York, as a substitute for Lord Palmerston, five years ago. This plant yielded a nice gathering the year after it was planted, and has been heavily loaded with large, luscious fruit every year since. So striking was the flavour of this variety, that my then employers and their guests questioned me respecting it, and stated that they had never tasted such fine flavoured Peaches at that season of the year.—J. RIDDELL, *Castle Howard*.

Lilium Wallichianum superbum.—At page 383 of your last issue, your valued correspondent "P." conversant as he always proves himself to be in everything relating to Lilies and their culture, seems to us in the present instance to attach far too much importance to what he calls *ochroleucum* of Wallich. So far as we can understand the matter, it is as follows: Wallich while collecting in India sent some dried specimens to this country, amongst which happened to be a Lily which Wallich intended calling *ochroleucum*, but which Don was the first to publish, and that under the name of *nepalense*. Wallich afterwards accepted this name of *nepalense*, as shown in his *Pl. Asiat. Rar.*, iii., 67, 291, but does not give any reference to the name *ochroleucum*, and neither is this name mentioned in his catalogue. This confusion has only been cleared up lately by some drawings now in the herbarium, Kew, which belonged to the East India Company. Amongst these are three drawings of the Lily in question, labelled presumably in Wallich's own handwriting. *L. ochroleucum*, an exact copy of one of these drawings, is published in his *Pl. Asiat. Rar.*, iii., f. 291, as *L. nepalense* (Don), so that although Wallich may have intended naming the

Lily ochroleucum, he was obliged to adopt Don's name as being the first published. From the drawings referred to above, all of which vary considerably in colour and marking, it may be taken for granted that *L. nepalense* is an extremely variable Lily—not, however, in any of the forms we have seen, to be in any way confounded with the other Indian species, on account of its distinct short, broad leaves and short trumpet flowers. The plant flowered at Low's nursery and figured for THE GARDEN differs from the drawings called *ochroleucum* only in having a paler-coloured throat, and as it must be distinguished from the already known and perfectly distinct *L. nepalense*, the easiest way of solving the difficulty will be to call it *L. nepalense* var. *ochroleucum*, and which will at the same time be appropriate and descriptive.—D. D.

Cretan Mullein (*Verbascum phlomoides*).—The remarkable value of this fine plant impresses itself upon one every year more and more, it is so handsome and picturesque both in the flower border and among shrubs, indeed in almost any position, and has the great merit of remaining a long time in beauty. From the middle of June to the end of September it is one of the most conspicuous of good plants, while some individuals whose main flower-stalks were cut out in July are still a flowery mass of blooming laterals. It is certainly a flower for every garden, and yet how seldom seen!—G. J.

Pudding Berry (*Cornus canadensis*).—A bright little gem from the damp woods and shady swamps of Pennsylvania, &c., spreading, we are told, nearly to the Arctic coast, as far as the Pine woods extend. It is known in the northern portions of the New England States as Pudding Berry, on account of the berries, which are large and sweetish, being used as an ingredient in plum puddings. A handsome dwarf plant for shady places on the rockery, &c., where in peaty soil it creeps rapidly, and soon makes itself at home. The leaves all through the autumn are blood-red and very attractive, the large white, pink-tinted bracts being interesting and beautiful.

Saxifraga Fortunei out of doors.—This has proved one of those exceptional years when we have been able to flower *Saxifraga Fortunei* out of doors without its being damaged by frosts. It is by far the most ornamental of this group, and makes a really handsome rock plant, its fine white flowers, blood-red stems, and dark green glossy leaves making a happy combination of colour. As a pot plant for the cool greenhouse it is unsurpassed at this season of the year; the less heat it is subjected to the better, as in a hothouse the blooms last a comparatively short time. It would doubtless be a most useful corridor plant, being easily kept in good condition.

Fine autumn Crocuses.—One of the most charming of the autumn Crocuses now in flower is *C. sativus* var. *Cartwrightianus*. It may best be described as a white *sativus*, but the flowers are smaller, the segments shorter, and the almost entire stigmata brilliant orange-scarlet. Its dwarf habit and the abundance of leaves at flowering time are all in its favour. It is less apt to get beaten down with heavy rains, and is in every way a most suitable form for exposed districts. A near ally of *Cartwrightianus* is *C. sativus cashmerianus*. It is about the same height and form, but with purple instead of white flowers. *C. s. Elwesii*, which has unusually large flowers, lilac-purple with deeper coloured base, is also one of the best late autumn and early winter sorts. It may be obtained of any bulb merchant.

Holy Ghost Flower (*Peristeria elata*).—This was introduced into this country from Panama in the year 1826. It is a very handsome, free-growing plant; the flowers are about 1½ inches across, white, with small lilac specks on the base of the lip, waxy, and very sweet-scented. It has succeeded well with me in a house with a miscellaneous collection of plants, including *Cattleyas*, *Dracenas*, *Crotons*, &c., and is potted in a compost of good loam, peat, Sphagnum Moss, and charcoal. Six fine spikes have been the result of this treatment, bearing altogether 162 blooms, the finest spike being

5 ft. 3 in. in height and carrying thirty-two blooms. The age of the plant I believe is about sixteen years.—W. A. GUNNER, *The Ainges, St. Saviour's, Jersey*.

* * Accompanying this note was a photograph of a large well-flowered specimen of this interesting Orchid.—ED.

Did not know Spatium.—Mr. Elwes, in an American gardening journal, is doing his best to show how little he sympathises with English names for plants. He had not an idea what it meant. The following are his words in the journal in question:—

A well-known and distinguished gardener, who should have known better, wrote and asked me for a plant of "Spatium." I had not an idea what he meant, and wrote back that I could not read the word in his letter. Then he wrote to say that he meant *Lewisia rediviva*. I should have said that if there was a plant whose scientific name was a happy one it was this. For, though it is not always possible to follow the good old rule of giving Latin names which either connect plants with some distinguished explorer, collector, or scientist, or indicate some peculiarity of their structure, habit, or colour, yet it is much more easy to remember such names than a name like *Spatium*, which means absolutely nothing, and, if used anywhere, is, I suppose, an Indian name, which I never heard of in the native country of the plant itself.

So that it appears that Mr. Elwes cares a good deal more for airing his narrow dislikes of English names than of looking into the history of the plants he writes about.

Spatium, Spætium, or Bitter Root.—As Mr. Elwes has such a dread of the invention of "barbarous" names for plants, he may perhaps like to know that the former of the above names are those under which *Lewisia rediviva* is known by the natives in Oregon and the latter in Canada. Whatever the meaning of *Spatium* may be, it is as well known as applied to *Lewisia rediviva* as *Sloe* and *Blackthorn* are to *Prunus spinosa*. It may, perchance, also be of interest to Mr. Elwes to know that the plant is of some value as an article of food to the North American Indians. The long, fleshy roots are white internally and contain a quantity of starch. To prepare them for food the skin is removed, the root cut into small pieces, steeped in water, and then boiled, when they swell to five or six times their size and become of a jelly-like consistency. It is considered a wholesome food both by the Indians and Europeans, but it is costly, as it takes a long time to collect any quantity. One of the chief points of interest in the plant is the great tenacity of life possessed by the roots, a plant having been known to flower after being placed in an herbarium for three years. From this fact is derived the specific name.—J. R. J.

* * We thank the writer of the above, but fear it is nothing to Mr. Elwes, who holds in respect only the strict botanical name. But at the risk of being again called barbarous one may say that men and flowers lived together a long time before the Linnean nomenclature. The existence or necessity of this nomenclature should in no way stop those who seek to meet the natural and right desire to have English names for garden plants. Botanists who write in Latin for international uses have nothing to do with the question, and the wise among them would help the idea. And THE GARDEN is not a botanical journal!—ED.

Monster Onions.—The newest thing in vegetable growing is the desire to produce monster Onions. There is little use in anyone trying to compete at shows with specimens under one pound in weight, and some considerably over are passed by. The ground required to accommodate, and the labour and expensive feeding necessary to produce Onions that will weigh twenty-four pounds or thirty pounds per dozen, is out of all proportion to the returns obtainable from them. Extra large Onions are never in demand in any kitchen, and it is impossible to get them to keep to the end of winter or for use in spring. Large bulbs have been extensively shown this year; the desire to possess similar specimens is sure to have increased, but I hope no one will depend on their large bulbs for a main crop.—J. M.

THE DASYLIRIONS.

ABOUT a dozen species of *Dasyilirion* are known to science, and about half this number are in cultivation in English gardens. They are related to the *Yuccas* and *Beaucarneas*, forming with these genera a well-marked group of the great Lily order, all of them North American plants. *Dasyilirions* are found only in Mexico and the Southern States. They grow to a large size, forming stout woody stems and large heads of elegant foliage. They are, however, very slow growers, which is an advantage where space is very limited and where they must be kept indoors. But there is no reason whatever for

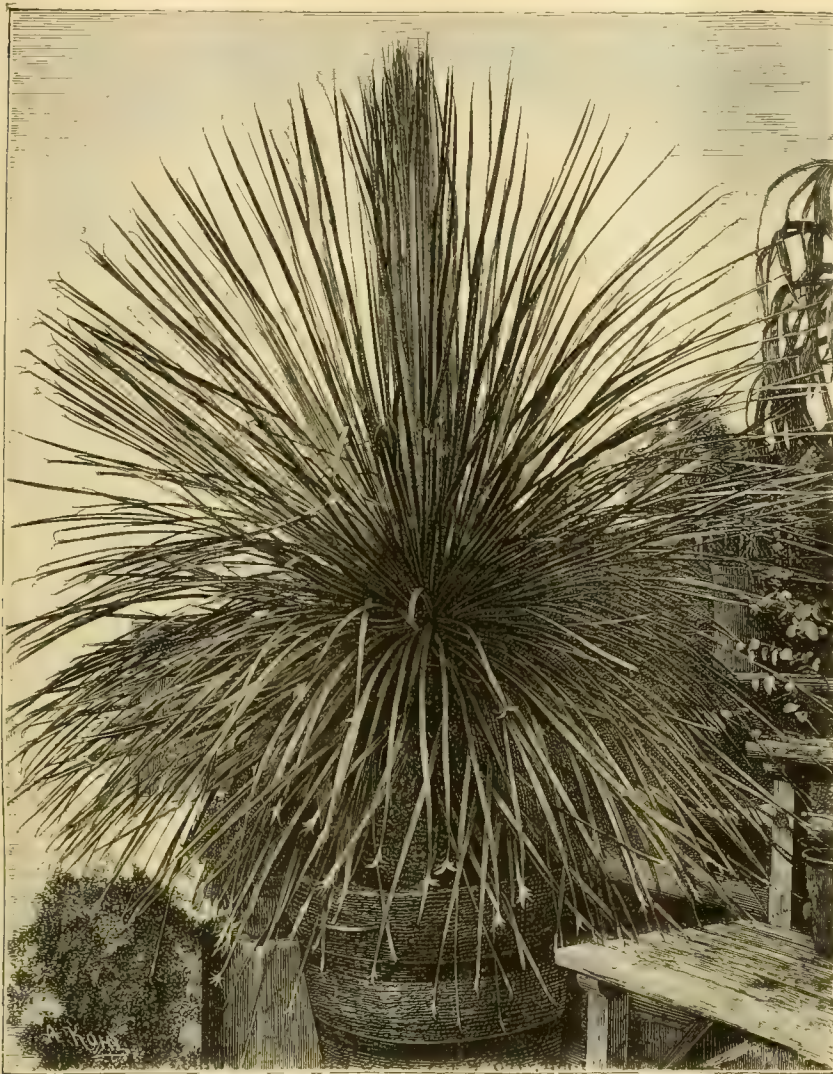
summer as the air outside. This fact is important, as showing that the *Dasyilirion* may certainly be placed outside in summer. It is easy to perceive, with the aid of the illustration, that these plants are beautifully adapted for standing on terraces or near entrances in large gardens. The plant photographed was 6 feet 6 inches high by about 4 feet through; the leaves are rigid, but not stiff; their edges bear spines, and at the tip there is a tuft of brown fibre formed by the splitting of the extremity of the leaf. An amusing story is told of the mistake made by a gardener who, on finding a large example of this species in a collection he had just taken

large head of leaves which are similar to those of *D. acrotrichum*, except that they have not the tuft on the end, which is characteristic of that species.

D. glaucophyllum, sometimes called *D. glaucum*, has stiffer, broader leaves than the preceding, very glaucous, almost silvery, and with strong yellow marginal teeth. *D. serratifolium* is similar, but shorter in the leaf. *D. quadrangulatum* is sometimes met with under the name of *Xanthorrhoea hastilis*, the leaves resembling those of *Xanthorrhoea* in being narrow, Rush-like, and quadrangular. Of course, the last-named genus is found only in Australia, and is very different from *Dasyilirion* in botanical characters. *D. quadrangulatum* is a very ornamental plant, the leaves being each from 3 feet to 4 feet long, numerous, and forming a large head, the lower leaves recurved, and giving the whole plant an elegant appearance.

D. Hookeri has a thick, bole-like stem, not unlike that of *Testudinaria*, with tufts of glaucous narrow leaves springing from the upper part. It is elegant in a young state.

These plants like plenty of water in summer, little or none in winter, and they do not require much root room. They are exactly the kind of thing most needed in large gardens. W.



Dasyilirion acrotrichum. Engraved for THE GARDEN from a photograph sent by Commander Walters, R.N.

treating *Dasyilirions* as semi-tropical plants; they are certainly as hardy as *Agave americana*, and they may be used for outdoor effect in summer in the same way as the *Agaves* and some of the *Yuccas* are employed. Along the Riviera there are fine specimens of *Dasyilirion* and *Beaucarnea*. There are also a few good examples in English gardens, but I do not recollect ever seeing them outside in summer. In the winter garden at Kew there is a plant of *D. acrotrichum*, the species represented in the accompanying woodcut, which has been in its present position two years and is in the best of health. The temperature of this house sinks as low as 35° in severe weather and it never gets as warm in

charge of, carefully cut away all the tufts from the ends of the leaves under the impression that they indicated bad health. Some of the plants of this species at Kew have trunks 5 feet high, and they flower now and again. The flower-spikes are erect, about 10 feet long, and the flowers are arranged in a narrow panicle. The male flowers are very small and crowded with pollen, whilst the female ones bear small triangular brown nut-like ovaries. Male and female flowers are borne by different plants, the genus being dioecious. A female plant is now bearing a fine spike in the Kew collection.

D. graminifolium has a short trunk and a

very fine spike of bloom of this species with other things from W. Alison. I suppose these plants have been imported by himself, and if so I should be glad to know from what part of India this species has been received, for it is a curious fact that although this plant may now be found in various collections, no one appears to know its origin, and I have a particular reason just now for learning its native habitat. Most of these plants which have appeared in our gardens are extraordinary and beautiful, and yet how few growers have taken up their cultivation, so that at the present time very few kinds are to be obtained. One reason which prevented them from remaining long in good condition in our gardens in the olden times was the severe and unnecessary drying to which the plants were subjected. To this drying system must be attributed the loss of many of the small-growing Orchids which used to make our houses gay. The species now under consideration is not a highly coloured one, but there are others which have showy as well as attractive flowers, and years ago I prized the plants more than many others. At that time such kinds as *C. Cumingi*, *C. chinense*, and *C. Thouarsi* used to flower freely with me. Nice plants of these which used to send up annually from fifteen to twenty umbels of their beautiful flowers were a continual delight, and I regretted the time when the flowers were over. I should much like to see them once more taken care of in our gardens. The present plant is a somewhat stronger growing kind than either of the three last named. The majority of the kinds seldom exceed about 6 inches in height with creeping rhizomes which spread more or less. The plants, therefore, require surface room, and I prefer for them a somewhat broad, shallow pan, in order that they may be hung up near the glass, for all of them delight in an abundance of air and good exposure to the sun and light. They should, however, receive the benefit of a thin shade during the middle of the day in summer, and they also require to be liberally supplied with water to their roots, while a light

ORCHIDS.

W. H. GOWER.

CIRRHOPE TALUM ORNATISSIMUM.

syrring morning and evening, and an atmosphere well charged with moisture are very beneficial. During the winter *Cirrhopetalums* should not be allowed to become dry for any length of time, as this causes them to shrivel, and although it may be a natural condition for them, yet under cultivation it weakens them, and therefore should not be resorted to. The best material to use about these plants is peat and Sphagnum Moss, but the roots must not be overburdened with this. Let the potting material be made firm about their roots, and be built into a cone-like mound above the rim of the pot, from the top of which the plant may spread in all directions. Care must be taken that the drainage is good, and in the process of potting a few nodules of charcoal may be worked into the mould with advantage. *C. ornatissimum* does not appear to be a plant by any means difficult to manage in the warmest house. Its short pseudo-bulbs bear a single leaf, which is thick and fleshy in texture, and the scape is longer than the leaf, bearing on the summit a somewhat few-flowered umbel of rather large blooms for the genus; the long lateral sepals are the most conspicuous part of the flower, as they are in all the species, and have a peculiar twist near the base, which causes the two outer edges to meet together on the same plane, giving the flowers a singular appearance. The dorsal sepal is erect, and, like the petals, is ornamented with long glandular hairs, in which it is not singular, for *C. Cumingi* is ornamented in a somewhat similar manner, but in a less degree. The colour of the flowers of *C. ornatissimum* is of a yellowish-bronze, tinged and streaked with rosy-purple. I have just looked at my flowers of this plant, which are in my herbarium, and am perfectly astonished that flowers of such a fragile texture should shrink so much in the process of drying. I should suppose this plant comes from some of the islands in the Indian Seas.

Cypripedium Lemoineanum.—I lately saw this variety with four and five flowers on a spike. When first seen it was said to be identical with *C. calurum*, and the flowers are very much of the same colour, but I am assured that when seen side by side the two plants are very distinct. Certainly I never saw *calurum* bearing so many flowers together on one spike. The flowers of *C. Lemoineanum* are large, and rising tier upon tier, one above the other, they have a beautiful effect. It is a very fine plant, which, now it is getting established, displays its characters well, and it will commend itself to all.—G.

Phalænopsis grandiflora.—This handsome Moth Orchid is now flowering beautifully in Mrs. Studd's collection, the Royal Crescent, Bath, and some flowers sent me by Mr. Cypher, gardener there, prove it to be a very good variety. It is very nice to be able to grow these plants away from the London fog, for this is a ruthless enemy to the *Phalænopsis*, and it does not appear necessary to go far to escape it, as, for instance, the fine plants of this genus which have been described in this paper as existing at Heaton House, Cheshunt. I meant to have seen these plants once more before they were sold this last week, but was, through illness, prevented from doing so. Cannot the Orchid growers in London invent something to shield themselves from the pernicious influence of these fogs?—W. H. G.

Sophronitis grandiflora.—"J. M." sends me a box of flowers of this to show the great variation in the colour of the blooms, and wishing to have names for the various shades of colour; this I cannot do. "J. M." may name them himself if he likes, so as to identify them, should he wish to select a plant; for instance, the flower marked No. 6, would be my selection for a good variety, and is very similar to the variety named *purpurea*, whilst No. 5 resembles *rosea*. A coloured figure of this variety was given in THE GARDEN, June 7,

1884 (p. 474). All the forms are very beautiful, and I should think by the quality of the flowers that "J. M.'s" plants are in fine condition. The varieties of *Sophronitis* should be largely grown by everyone, and I believe they are coming much into favour for winter blooming. The *Sophronitis* thrives best in shallow pans, and will grow and flower well in the *Odontoglossum* house.—W. H. G.

INDIAN CROCUSES.

(PLEIONES.)

Of all the Orchids flowering at this season, these bright little gems have, perhaps, the greatest claim to our notice. That their beauty is appreciated is apparent from the number of establishments in which they are now grown. There are still many, however, where they may be easily grown, and it may be worth while to draw attention to their value and to the main points essential for their successful treatment. *Pleiones* are so amenable to cultivation, that I am convinced none are more likely to give satisfaction to the amateur or the beginner in Orchid culture.

Perhaps a particular more neglected than any is the time for repotting. The sooner this is done after the flowers have decayed the better, for although no leaf growth is apparent, the short scaly buds at the base of the pseudo-bulbs begin to emit roots immediately, and repotting cannot afterwards be done without injury. For the kinds enumerated it should not be deferred after December. The most suitable compost is one consisting of equal parts of fibrous peat and loam, to which may be added a small proportion of chopped Sphagnum and silver sand. As *Pleiones* refuse to root freely in close heavy material, all the loose earthy particles should be shaken out. It is sometimes stated that these plants may remain two years in the same soil without deterioration. But after trying this method, I strongly condemn it, as the compost becomes pretty well exhausted at the end of a year, and in the second place the pseudo-bulbs are much too crowded unless thinned out. It is best to shake off all the old soil and roots, only leaving sufficient of the latter to enable the pseudo-bulbs to be firmly fixed in the new compost. Broad pans about 6 inches deep, one-third filled with drainage, are most suitable. When planting, it is best to commence at one side, rising in the centre an inch or so above the rim. Beginners find it difficult to firmly set the pseudo-bulbs in the soil, especially if most of the old roots have decayed. When this is the case, it is best to wrap a little Sphagnum tightly round what roots remain, thus making an artificial ball. After potting, the pans should be put on a light airy shelf in the cool house, giving them no water until the young leaves have well shown themselves, which will not be for several weeks. This point is as important as it is with *Calanthes* at a similar stage. About the end of March the plants may be placed in the intermediate house, giving them more water as growth proceeds; here they should stay until the leaves are almost at their full size, when they should be removed to a cooler house to swell the pseudo-bulbs and ripen off. After the pans are filled with roots, too much water can hardly be given, and weak manure twice a week is very beneficial.

In the latest rearrangement of Orchids, *Pleiones* have been included under *Cœlogynes*. So plainly, however, do their style of flowering and deciduous habit distinguish them from *Cœlogyne* proper, that it will be long before the older name is relinquished. The following species are the best for general cultivation:—

P. LAGENARIA, a native of Northern India, introduced in 1856. It blooms in October and November, and when well grown the pans are completely hidden by the beautiful flowers, the sepals and petals of which are a bright rosy-lilac, the paler lip being prettily blotched with yellow and reddish-purple. The flowers occur on one or two-flowered scapes.

P. MACULATA is a charming species. The blooms are white, with the exception of the lip, which is

yellow on the disc, the other parts being white, barred with purple. A native of Khasya, &c. Introduced in 1837.

P. WALLICHIANA is valuable on account of its later blooming; its beautifully coloured flowers are also larger than those of the preceding. The sepals and petals are of a rich rose-purple, the similarly coloured lip being yellow on the centre, blotched with crimson towards the base.

There are several other reputed species, but they are either varieties of the preceding, or so rare as not to be available for general cultivation.

B.

ORCHIDS AT LOWFIELDS.

THE Rev. F. D. Horner is now so well known as the leading cultivator of *Auriculas*, that it may be somewhat of a surprise to his numerous friends to know that he is also a very successful cultivator of Orchids. The *Auricula* is a lowly flower, occupies but little space, and may be successfully cultivated in the smallest gardens; but the Orchid was supposed to require elaborately constructed houses and skilful cultivators. So rapidly, however, has the culture of Orchids extended during the last decade that the mystery attending their culture has disappeared, and it has been found that they can be as easily grown as any ordinary greenhouse plants. There are a few Orchids which are still puzzling to cultivators, but they are generally well known as being difficult to deal with and need not be grown. Mr. and Mrs. Horner are both enthusiastic Orchid fanciers, and take a great interest in the culture of their plants. Mr. Horner's collection of Orchids has been arranged in a lean-to house 25 feet long and 10 feet wide in two divisions. The cool Orchids are in a very small structure, measuring only $4\frac{1}{2}$ feet wide and 12 feet long, and during the last season a low span-roofed house, which used to be devoted to the *Auricula*, has now been filled with Orchids; it may be 20 feet by 8 feet. The houses are all well filled. Suspended from the roof and arranged on the stages are many species growing freely and flowering as if they were at home. Not only such free and easily grown species as *Cattleya Mossiæ*, but the miffy *C. citrina* is full of vigour. Suspended from the roof and growing on a teak block near it is a splendid specimen of *Oncidium Lanceanum* with forty blooms open. *Cattleya citrina* is supposed to require a rather cool temperature, and *O. Lanceanum* the warmest, and yet they grow together here freely enough. In the same house I observed some fine spikes of *Vanda Sanderiana* pushing out with ten buds upon one of them. Indeed, we find many Orchids requiring warm house treatment thriving well in this house with the Mexican *Lælias*, *Cattleya Mendeli*, *Mossiæ*, *Dowiana*, &c. *Aeranthus Leonis*, which I noticed last year as doing remarkably well, has made great progress during the past season, forming immense deep green leaves. The *Cœlogynes* are favourites, and deservedly so, not to mention the various beautiful forms of *C. cristata* so well known in every good garden. Mr. and Mrs. Horner delight in such distinct and really handsome species as *C. speciosa*, a beautiful form of which was in flower; the sepals and petals are greenish yellow, with the lip a dark brownish crimson. It produces but two or three of its large flowers on a peduncle. *C. Massangeana*, now a well-known and beautiful species, has made remarkable progress in the course of two or three years; it flowers both in the autumn and in the spring, and its long, pendulous spikes of buff-coloured flowers are very attractive; but the remarkable fact which orchidists may well ponder over is to see *Oncidium Lanceanum*, *Cœlogyne Massangeana*, and *Cattleya citrina*, with an endless variety of *Dendrobiums* and other things, including a fine specimen of *Cœlogyne pandurata*, growing freely and flowering well suspended from the same roof glass. *Stanhopeas* are greatly valued, and some ten or a dozen species and varieties are grown in the same house. Passing into the little cool house, a few *Odontoglossums* and allied subjects are growing very freely; some nicely spotted varieties have appeared amongst a batch of *O. Pescatorei* and a

really good form of *O. triumphans*. It may be observed here that the last named species is frequently found with *O. Pescatorei*, and should not be mistaken for a yellow-flowered form of that species. Amongst the broad-petalled forms of *O. crispum* there are some varieties with distinctly spotted and blotched brown flowers; one is pure white, lightly spotted and blotched with yellow. That curious Orchid *Nanodes Medusæ* had been moved out of the cool house, and was dangling in the air outside suspended from the branch of an Apple tree. Whenever this plant is seen doing well, it is in a cool house, and where it is hung close to the door with the wind blowing on it every time the door is opened. At Lowfields it has been moved outside every year in summer. Seedling Orchids are numerous, but as yet in a very small state. I alluded recently to some seedlings from *Zygopetalum Mackayi* in this garden, and in reference to them Mrs. Horner writes me that they are either from *Epidendrum ciliare* or *Oncidium tigrinum* crossed with *Z. Mackayi*, and not from an *Odontoglossum* of any kind. Mr. Horner has an idea that it is better not to remove the pollen masses from the seed-bearing parent. Amateurs who would like to take to the hybridising of Orchids will find no difficulty in getting plenty of seed-pods from almost any kind of crosses, with perfect or imperfect seeds, but it is not so easy to get plants up, and even if the little strangers appear above ground, only a few of them go on growing. The principal lesson we learn from Mr. and Mrs. Horner's success is this, that Orchids can be grown and flowered successfully with the aid of the most ordinary appliances, and by amateurs having no previous knowledge whatever of their culture. Mrs. Horner has very kindly sent me a list of the Orchids in flower during each month of the present year. In January they had thirty-six species in flower and fifty-four plants. In February forty-five species and sixty plants. In March no less than fifty-six species and eighty-four plants; and when we take into consideration the character and size of the houses, the results are remarkable.

J. DOUGLAS.

FLOWER GARDEN.

SPRING BEDDING.

DURING this and the following month a large number of flower beds will be planted with Hyacinths, Tulips, and other bulbs, but as these will not commence to grow until early spring, the beds look bare for a long time if they are not carpeted with some suitable plant or plants, and after the bulbs have gone out of bloom they present to view but a sorry appearance, as the plants must remain for a time to ripen their foliage before they can be lifted from the ground. What, therefore, is wanted are plants that will give the beds a furnished appearance during the winter and bloom in early spring with the bulbs, and continue to do so after the latter have gone out of bloom. This is an old story, but it is one that needs re-telling annually, because the main objections used against the employment of bulbs in the garden are that they are expensive, that a long time goes by before the beds in which they are planted have a furnished appearance. The season of bloom is a very short one, and when over the beds take on a rough appearance for a considerable period. All these disadvantages can be remedied by employing hardy plants of a suitable character. Of these that are readily obtained in quantity I can mention, among others, double Daisies, Violets, Forget-me-nots and the compact form of *Silene pendula*. The two former are preferable, because they admit of a rapid increase by means of root-division; they come into bloom early and go on flowering for a long time. The Violas will be available for decoration during the summer if good, free blooming and persistent varieties are employed, and both these and the Daisies if removed at the end of May can be divided and planted out in nursery beds for further employment in the autumn. Of Violas there are now so many and they are all so good, that any varieties, provided they supply the desired colours, will be accept-

able. A good blue, clear yellow, pure white, and a striking blotched variety like Countess of Kintore will make telling beds in spring. Should the Viola be an early-flowering one, it will be in bloom as soon as the bulbs, and succeed them in flower for a considerable time. Of double Daisies there are the dark crimson, the deep rose, the pink and the white. These are known under various names, but they are all compact growing and remarkably free-blooming. In good soil plants spread with rapidity and throw off a number of side shoots that take root and make a number of plants when divided at the time of lifting. The Primroses, not the common yellow, but the deep coloured and varied hues varieties so much improved of late, and the giant Polyanthus, that are of so many shades of colour and so fine in bloom as well as continuous, also make admirable spring bedding plants. They can be put into the beds at the time of planting the bulbs, and removed again when it is time for the bulbs to be lifted ready for the summer occupants of the beds. The Polyanthus can then be divided and planted as recommended with the Violas and Daisies. Another good carpet plant for spring beds is *Myosotis dissitiflora*, but seedling plants are preferable to divided ones. It is both an early and free-flowering species, and the very best of the hardy Forget-me-nots. Other subjects will suggest themselves. I have simply mentioned a few, and there will be no difficulty in adding to the list other valuable and effective plants.

R. D.

Heliotrope President Garfield.—This fine Heliotrope is a great improvement on some of the older varieties for outdoor work. The habit is more spreading and dwarf, though very robust. The flowers, which are produced freely, are deep violet in colour and the flower heads are very large, measuring in some instances nearly a foot across. I think, too, it is somewhat harder than most Heliotropes, for the slight frosts we have had have not yet injured it, and it looks far better than the flowering Pelargoniums at present, for the flowers of these have succumbed to the heavy rains. It is a pity that the Heliotrope is such a tender plant, for it is quite indispensable in the garden, and if there is a chance of getting hardier varieties it would be worth working for. I have used the above mentioned in connection with Crystal Palace Gem Pelargonium, and the soft yellow leaves and bright rose flowers blend well with the dark flowers and foliage of the Heliotrope.—J. C. T.

Autumn Polygonums.—Many of these beautiful Knotweeds that a few years ago were scarcely to be met with in gardens at all are now almost as indispensable as bedding Pelargoniums. They are a very varied group, numbering nearly 200 species, the majority of which have such insignificant flowers and weedy habits as to be utterly useless as garden plants. There are at the present time over twenty species cultivated in gardens, and these, beginning to flower in early summer, continue with us in one or other of the forms until the severe frosts come in autumn. It is with these autumn flowering species, *P. vacciniifolium*, *P. sphærostachyum*, and *P. polystachyum*, that we are at present concerned. This last is a noble plant, and one of the best of the larger growing kinds in cultivation. It forms great masses, the stems sturdy and leafy from the very bottom. The leaves are olive-green, oval in shape, with acuminate points, the stalks and midribs blood red. The flowers are larger than those of any of the species mentioned, pure white, and produced in feathery bunches from the bases of the uppermost leaves. It is one of the hardiest of the genus, begins to flower towards the latter end of September, and is now about its best. I never remember this plant having been destroyed by frosts, its hardy constitution enabling it to finish blooming before the frosts are severe enough to destroy it. It is a native of the Himalayas, and may be found in gardens as *P. molle*, from which, however, it is perfectly distinct. *P. sphærostachyum*, another Himalayan species of recent introduction, is one of the most useful autumn-flowering rock plants yet introduced. Unlike *P.*

affine and *P. vacciniifolium*, it is a slow grower, and the easiest way of increasing it appears to be by means of seeds, which it produces freely enough, but unless watched they fall before the flowers wither, and are usually lost. The seeds do not appear to be quite ripe when they fall, but if sown immediately they will soon germinate. The flowers are nearly blood-red, in somewhat long oval heads, and are very attractive, especially when seen in nice little groups. It is a native of the alpine and subalpine Himalayas and is perfectly hardy. *P. vacciniifolium* is a well-known species, and its merits as an autumn flower can hardly be over-estimated. On the dry rockery, as usually seen in gardens, it does not appeal to one so much as when grown in its element, a wet, boggy soil, where it is perfectly at home, forming dense tufts, the tinged leaves being entirely hidden with the profusion of bright rosy flowers produced in longish round spikes. It is a most useful subject for the sides of running streams, and for trailing over stones in the damper spots of the rock garden. It is a native of the Himalayas also, and may be increased readily by cuttings or layers.—K.

HEPATICAS.

As regards securing a crop of self-grown seedling plants, my experience corresponds with that given (pp. 359-60). The young plants cannot endure summer sunshine, and besides, they are less disturbed by the action of frosts and thaws in a north aspect. Still I find I get better seed from old plants grown in full sunshine, much better and vastly more of it, and under such conditions I have seed from *angulosa* too. Possibly the flowers are better fertilised, and certainly the seed is better ripened, and after all I do not think that, in order to obtain variety, the difficulty is in the seed, but more in the care and patience needful in guarding and noting the young plants. It is in this that, compared with our German friends, we are so much behindhand, as we do not carefully follow up the results of artificial or natural hybridisation. I have raised hundreds of seedlings and had all shades of blue apparently, and also reds, from the softest flesh tint to rose and reddish crimson, all single. With the exception of a very dark blue and a lively rose, I did not care to propagate any. The white-flowered varieties were small and not so good as the variety with large, broad-petalled flowers with conspicuous pink anthers, and which is common in this neighbourhood. As regards colour, however, I find that to change the soil or situation of a plant, even in the same garden, is to change the hue, and no doubt the whole of the Hepaticas are so affected. They are also to be seen to advantage or otherwise at different times of the day, and the young flowers, as in the case of the Rose, are always of a deeper colour. The blooms of old plants, too, grow paler if the specimens are left too long undivided, and even in the same season, at the end of their long flowering period, the later blooms are paler than the early ones, so that there is not much to rely upon as a permanent distinctness of shade. With me there are growing side by side two, if not three, distinct forms of *H. angulosa*. In one the flowers are very pale or mauve, and the petals so narrow as to give a star-like effect, after the style of *Anemone stellata*. Another has darker flowers, and differs also in the foliage. One kind is perfectly herbaceous, another evergreen. The young leaves of one are pinky brown, those of the other green, with very long silky hairs. The star-shaped one flowers with the Snowdrop, the other later. With me the white-flowered variety is the slowest, slower even than the double blue. The double blue always resents removal, but after a little while starts in good earnest. The so-called single crimson, or reddish crimson, thrives like a Daisy here, as indeed all do excepting the white form, and I grow no class of plants needing less care, and certainly nothing affording more pleasure; the clumps are brilliant balls of colour in early spring. I am sure people might grow these better if they would make a proper beginning. The soil, before planting is proceeded with, should be deeply dug and finely worked; the roots should be protected

from the drought and not be doubled up when being set. A retentive loam suits *Hepaticas* best, but I find them easily managed anywhere in my lighter soils. J. WOOD.

Woodville, Kirkstall.

FLOWER GARDEN NOTES.

AD WEATHER FLOWERS.—Of late, wind and rain storms seem to have been in league to make every part and everything in gardens look their worst. Drifted leaves, sticks, worm casts, and decaying flower-stems now hold sway, but despite all this untidiness certain plants bravely hold their own, and flower on just the same as if weather conditions had been or were ever so favourable. *Pentstemons*, *Antirrhinums*, *Schizostylis coccinea*, *Wallflowers*, *Limnanthes Douglasi*, *Stocks*, and *Chrysanthemums* are amongst the best. Some of the finest flowers of *Pentstemons* are from seeds sown early in the year; the plants are just now in their prime, being full of flower. Plants raised from cuttings last autumn and planted out in spring are good, but not nearly so freely flowered. Plants raised from cuttings began to blossom much earlier than the seedlings, which are so strong and robust that, unless it were to increase the stock of some favourite kind, propagation by cuttings is in no way desirable. Planted in groups of three or five amongst herbaceous plants that are now looking their worst, their beauty is heightened by the contrast. In regard to free-flowering, *Antirrhinums* are just now scarcely second to the *Pentstemons*. The old plants of last year have been in flower for many weeks and are still in fine bloom. Plants from seeds sown in April last are only now beginning to flower, and should the weather prove mild they will bloom more or less through the winter. Those that are fortunate enough to have spare frames in which to plant *Pentstemons* and *Antirrhinums*, say about midsummer, might, at the cost of the labour of ventilation, in mild dry weather have all through the winter abundance of these flowers for cutting. *Schizostylis coccinea* is always good in the autumn. The plant is perfectly hardy and I have gathered flowers in good condition after a severe frost. It is one of the few bulbous herbaceous plants that flower best if transplanted annually. The plants should be lifted entire, and the large bulbs be separated from the others and be planted in small clumps by themselves. The small bulbs may then remain undisturbed for a couple of seasons, at the end of which time a quantity of strong flowering bulbs may be expected and which may be separated as before named. The strong bulbs never fail to throw up spikes of fine flower that are the more welcome by reason of their appearing at a season when there are few open-air flowers.

WALLFLOWERS.—It is more by accident than design that at this season we are able to cut flowers of these in quantity. The plants are from self-sown seedlings, and having a few vacant spots in the flower borders, a quantity were planted out some time during June, and the result is some really good *Wallflowers* with promise of a lengthened season for them. The blooming of *Wallflowers* all the year round would not be a difficult task, and their production at this season is, I think, in every way desirable.

LIMNANTHES DOUGLASI.—It is years since the first seeds of this annual were sown, and ever since the plant has taken care of itself, seedlings coming up in all directions and at all seasons, and it is rare, except in the depth of winter, that there are not some flowers. It is quite refreshing to see clumps of the plant now with the beautiful primrose-coloured flowers peeping out from amongst the mass of fallen leaves. Bees have a special liking for the flowers; hence it is sometimes called the Bee Plant, and no wonder, for I have myself noted their preference for it rather than for a bed of *Mignonette*. *Stocks* of the East Lothian strain are still in good flower. They were sown in a cold frame in February and were planted out in May; they were at their best from the middle to the end of August, when the German and Ten-week *Stocks* sown at same time were done for, and ever since

that time they have continued to produce quantities of flower, and there is still promise of more.

CHRYSANTHEMUMS.—There is no better autumnal flowering plant than the early varieties of *Chrysanthemums*. The following kinds have been in bloom for weeks and are so still: *Mme. Desgrange*, light primrose, one of the very best; *G. Wermig*, a sport from it, deep yellow in colour, and its counterpart in all other respects; *Mme. Jolivart*, white, tinged with rose, a grand flower; *Précocité*, a small deep yellow flower, very free; *Lyon*, brown or bronze, extra good; *St. Mary*, a small white flower. The following are later, and are now at their best: *Alexandre Dufour*, purple, very good; *La Vierge*, pure white, also first-rate; and *Isidore Feral*, lilac. We have several other kinds, but these are named as being at the present time in perfection, which I think is remarkable, taking into account early frost, wind, and rain.

W. W.

IRISH DAFFODILS.

TO THE EDITOR OF THE GARDEN.

SIR,—May I, as the one who first noticed Mr. Hartland's remarks upon the judgment of the *Narcissus* committee, and as a working member of that committee, be allowed to say what, I trust, is a word in conclusion upon the matter?

The *Daffodils* in question may be very pretty, and well worthy of a place in a specialist's collection; but the committee, in the short time at its disposal, is entirely unable to give an opinion from that point of view. An overwhelming number of flowers comes before it, and it can commend only such as are either of remarkable botanical interest, *i.e.*, as hybrids or wild kinds, or in distinct advance, as florists' flowers, of the magnificent varieties which now hold front rank. The *Daffodils* under discussion certainly come under neither of these two heads, and the committee could only dismiss them, as they did many others on the same day of equal or superior merit, somewhat curtly.

No infringement was made of the rule about ignoring *cernuus* *Daffodils*, which applies only to the classification of *cernuus* varieties as such. If a white *Daffodil* superior to *Madame de Graaf* ever comes before the committee, it will at once receive all possible attention and commendation.

G. H. ENGLEHEART.

SHORT NOTES.—FLOWER.

Harpalum rigidum.—It is, I think, very evident from the remarks made by "W. W." (p. 336) that he has got some other *Sunflower* under the name of *Harpalum rigidum*, or he would not have it in flower so late as when he wrote, and he speaks of it lasting longer if only the frost will keep off. If his plant is right as to name, mine is wrong, as what I have, and a very fine thing it is, has ceased blooming for weeks, and the tops have died down and been cleared away.—S. D.

Wood Lilies (Trilliums).—I was glad to see this old favourite so well figured in *THE GARDEN* (Oct. 26, p. 394). It is there stated that the *Trillium* will not succeed with stagnant moisture about the roots, but how a bog can well be otherwise, I do not quite see, and yet "D. K." says the plant will thrive in it amazingly. Of this I have had proof, as ours are so placed, and they do exceedingly well. The conditions to success with this *Trillium* seem to be shade, loose and chiefly vegetable soil, and moisture at the roots. When so favoured, the plants are well able to take care of themselves. The time to divide and increase the stock is just when growth is commencing, as then any moderate-sized plants may be cut through the crown and replanted.—S. D.

Annual Dianthus (THE GARDEN, Oct. 26, p. 395).—Under this heading "A. D." discourses on the usefulness of these *Pinks*, but whether he means the *Heddewigi* section or any other is not clear, and why he should call them annual *Dianthuses* and then speak of their propagation by means of cuttings is quite as obscure. I have been growing a lot of *D. Heddewigi*, and have found them very valuable. I have marked all the best so as to have a good strain to save seed from, and the specially good forms I am lifting and potting for the purpose

of keeping through the winter and propagating stock from cuttings in spring. Like *Phlox Drummondii*, instead of being annuals, I am of opinion that the *Dianthuses* referred to are true perennials, and I well remember how many years ago we used every autumn to put in cuttings of a *Phlox* called *Prince Radowsky*, which was used in quantity for bedding. So late and continuous have been the *Dianthuses* flowered, that I regret not having a lot grown in pots, as they seem quite cool weather plants, and I believe they would go on flowering the greater part of the winter if placed under favourable conditions in a light house or pit. I shall be glad to hear if any reader of *THE GARDEN* has tried them in that way, as, judging from what I have seen of them, I think they will run the perpetual *Carnations* close, and give a lot of bright blooms for cutting or decorating the greenhouse.—S. D.

NOTES ON HARDY PLANTS.

Geranium lucidum.—Now that pretty and brightly coloured leaves are growing so much in favour for gardens, and especially rockeries, I wish to direct attention to this, which may be deemed a trifling little plant. So it is; still the round and lobed leaves are now of so many and brilliant hues that the plant commands admiration. If it is grown on an old wall or the drier parts of a sunny rockery, no plant in October that I know is more beautiful. True, it is only a native plant, and besides it is only annual, but yet it can take care of itself as well as any perennial, and it may easily become a weed from self-sown seed. It is charming on old walls and even in garden walks.

Thalictrum aquilegifolium.—This is a well-known and very useful border plant in its noble white form, but I wish especially to refer to at least one variety, that sometimes goes by the tempting name of *roseum*. I am not sure that I have tried all the varieties (if there are more than two), but I have secured plants from various sources under the name of *roseum*, and as yet have found little or no difference; the flowers are a dingy white, and in no sense can be described as rosy. In fact, they are objectionable, and I consider that the so-called rosy variety is not worth a place in a garden.

Polygonum molle.—This is a somewhat coarse growing *Knotweed*, but many will, no doubt, have found out its usefulness, indeed I may say its special value, for cutting from. The flowers are late, and consequently more valuable; moreover, they are of pretty form, abundant, and pure. For those who must have pretty late flowers to pick from the open garden this plant will be found both useful and of easy culture. Indeed, I think it flowers most freely in poor, stony land, and certainly the habit is more dwarf. It may not be a tidy border plant, as the 3-foot stems are top-heavy, but simply for the sake of its pretty late flowers it is worth a place.

Narcissus serotinus is new to me; therefore I cannot say much as to its cultivation, but I may mention that it is now just out of flower. The pure white star-like perianth is less than an inch across; the minute cup resembles a ring of wash-leather—the point of a lead pencil would fill it. It is very fragrant, and a gem for cold frame or greenhouse culture. It is said to be hardy, but its purity and frail character render it quite unsuitable for our rough Michaelmas weather.

Rudbeckia submontosa.—As the foliage of the *Rudbeckias* decays there is emitted a strong and pleasant smell resembling that of almonds; but this species is the most noticeable of all in this quality, which, to my mind, is a desirable one. It so happens also that this is a most distinct plant. It might practically be called a *Sunflower*, not that the flowers are very large, but the height of the plant being about 4 feet and the heads numerous, and showing during all the *Sunflower* season, it should be more used. I seldom see it in other than my own garden. The flowers, very neatly formed, most enduring, and suited for cutting, are each $2\frac{1}{2}$ inches across, the ray florets being greenish

on the under side, and as they are somewhat rolled inwards when young, the heads are not at their best until five days old.

Geranium Endressii.—If you wish to have delicate pink flowers from early summer until November, get this very hardy and free-growing *Geranium* well established. The short twig-like slender stems, with a few buds and open flowers and several pretty leaves, are charming during the month of October. Were the plant more difficult to cultivate, perhaps it would be better known and valued, but I am sure that anyone who has seen it, as I did this week, could not fail to be struck by its beauty. I had reluctantly to dig up big patches of it to make room for something else, but I would not have removed it had there not been another fine piece of it flowering just as well in a fully exposed place elsewhere. J. WOOD.

Woodville, Kirkstall.

TREES AND SHRUBS.

THE GORDONIAS.

THE *Gordonias* are nearly allied to the *Camellia* and belong to the same natural order, viz., *Ternstroemiaceæ*. There are about fifteen species; two are from the Southern United States, one—the subject of the accompanying illustration—from Hong-kong, and the rest hail from the Indian Archipelago and other parts of Tropical Asia. Perhaps not more than four or five are in cultivation in British gardens, and I will confine my remarks principally to these. All of them are certainly uncommon, but it is to be hoped that those who have been successful in growing any of these fine plants will describe the conditions under which they are found to thrive and the treatment to which they have been subjected, and so lead to their more extended cultivation.

G. ANOMALA, apparently in a wild state confined to Hong-kong, where it is abundant in the Happy Valley Woods, is a handsome Evergreen with dark green leaves and pure white single *Camellia*-like flowers. It has long been known in gardens, and has been figured in the *Botanical Register* and in early volumes of the *Botanical Magazine* under the names of *Camellia axillaris* and *Polyspora axillaris*. Probably the conditions which are found to suit *Camellia reticulata* would also be found acceptable to *Gordonia anomala*, viz., planted out in a peat bed in the greenhouse or conservatory.

G. PUBESCENS, a native of the Southern United States, forms a tree rarely exceeding 30 feet in height, with a trunk 6 inches or 8 inches in diameter. The sweetly-scented white flowers are, in a wild state, produced in succession for about three months, beginning in July. In England, however, according to Loudon, they rarely appear in the neighbourhood of London before September, from which time they continue to open until the buds are destroyed by frost. This species was introduced into England in 1774, and has undoubtedly failed in many localities owing to the ignorance of the planter of the conditions under which it thrives in a state of nature; a sandy peat with abundance of moisture at the roots seems essential to its welfare.

G. LASIANTHUS (the Loblolly Bay) differs from the last in its long-stalked (not nearly sessile) flowers. In colour and fragrance the flowers of the two are alike. It is said to be less hardy than the preceding species, and, according to Loudon, has not been successfully grown in Britain. Probably if it were planted out in a peat bed in a conservatory good results would follow; at any rate the experiment would be well worth trying, as plants are said to

flower freely when 5 feet or 6 feet high. The following notes extracted from that storehouse of original information respecting North American plants, "*Bartram's Travels through North and South Carolina*," &c., are worthy of perusal:—

The tall aspiring *Gordonia lasianthus*, which now stood in my view in all its splendour, is every way deserving of our admiration. Its thick foliage, of a dark green colour, is flowered over with large, milk-white, fragrant blossoms, on long slender elastic peduncles, at the extremities of its numerous branches, from the bosom of the leaves, and renewed every morning, and that in such incredible profusion, that the tree appears silvered over with them, and the ground beneath covered with the fallen flowers. It, at the same time, constantly pushes forth new twigs, with young buds on them, and in the

nitide, it is 60 feet, 80 feet, or 100 feet high, forming a pyramidal head. The wood of old trees when sawn into plank is deservedly admired in cabinet work or furniture; it has a cinnamon-coloured ground, marbled and veined with many colours; the inner bark is used for dyeing a reddish or sorrel colour; it imparts this colour to wool, cotton, linen, and dressed deer skins, and is highly esteemed by tanners.

G. OBTUSA, a large Indian tree, is the most recent introduction in the genus. Persons who have seen it in the Himalayas report upon it as being one of the most beautiful of Indian trees. The flowers, like those of the species already mentioned, are white, but whether they will be produced by young plants or whether the tree must attain a certain age and size before reach-



Gordonia anomala. Engraved for THE GARDEN from a photograph sent by Mr. Scrase-Dickins, Coolhurst, Sussex.

winter and spring the third year's leaves, now partly concealed by the new and perfect ones, are gradually changing colour, from green to golden yellow, from that to a scarlet, from scarlet to crimson, and lastly to a brownish purple, and then fall to the ground. So that the *Gordonia lasianthus* may be said to change and renew its garments every morning throughout the year, and every day appears with unfading lustre; and, moreover, after the general flowering is past, there is a thin succession of scattering blossoms to be seen on some parts of the tree almost every day throughout the remaining months, until the floral season returns again. Its natural situation, when growing, is on the edges of shallow ponds or low, wet grounds on rivers, in a sandy soil, the nearest to the water of any other tree, so that in droughty seasons its long serpentine roots which run near or upon the surface of the earth may reach into the water. When the tree has arrived at the period of perfect mag-

ing a flowering state remains to be proved. This must be cultivated under glass, N.

Kœlreuteria paniculata.—This very distinct tree passes during the season through several distinct phases of beauty, for in the spring the prettily divided leaves having just unfolded are very clear and bright, while the spikes of yellow blossoms are an effective summer feature; then just before the leaves drop they become tinged with yellow and brown in varying proportions, when the tree is perhaps more showy than at any other time. In warm soils the flowers are succeeded by rather curious inflated capsules, which stand well above the foliage. This *Kœlreuteria* is well suited for planting in limited spaces, for when not more than 8 feet or 10 feet high it is a perfect tree in miniature. During its young stages the *Kœlreuteria* is liable to be injured by severe frosts, but when older it is quite

hardy. At all times it needs a thoroughly drained spot, and will thrive in chalky soils better than most trees. This *Kœlreuteria* is a native of China, from whence it was introduced considerably over a century ago, but though so distinct and ornamental it is very rarely seen; indeed I am assured by some nurserymen that it is not worth keeping in stock, as the demand is so small. There is a second species of *Kœlreuteria*, *K. bipinnata*, which was described in the *Revue Horticole* last year, but it does not appear to be in cultivation in this country.—T.

PAULOWNIA IMPERIALIS.

JUDGING from the number of applicants for information regarding the most suitable soil, aspect, and localities in which this highly ornamental and somewhat neglected tree would do best, I am led to believe that it is gradually coming to the front as a suitable subject for the embellishment of our parks and lawns. That it is a neglected tree few persons who travel about through the country will care to deny, for the few specimens that are to be met with even in the southern English counties but too clearly point out that, owing to some reason or other, the tree has been very sparsely planted.

One reason for the present scarcity of the *Paulownia* is that it is branded with the half-hardy designation, and planters generally, or at least that particular section who, rather than experiment for themselves trust to casual reports, have been loth to purchase young plants. Not for one moment do I wish it to be understood that the *Paulownia* is perfectly hardy, and will succeed well in every locality and soil, for, like other foreign trees, it has, no doubt, and, perhaps, in a marked manner when grown in this country at least, its likes and dislikes. In the first place it will not succeed well in heavy, loamy soil, or where too much moisture is present, while in a light, gravelly loam or vegetable mould, overlying sand or gravel, and where not fully exposed to cold and cutting winds, it grows freely enough. Not one specimen, but several have I known to succumb to the adverse conditions under which they were planted, and unfortunately, too, the saddle was placed on the wrong horse, for the so-called half-hardy nature of the tree and few degrees of frost to which it was subjected had to bear the blame. When a tree succeeds in a fairly satisfactory way in the Scottish midland counties, there can be little fear of its being killed out by the inclemency of an English winter.

Were planters of the *Paulownia* to use a little discretion and sound judgment in the choosing of suitable spots, and such are plentiful enough on most English estates, for the tree, we would not hear of so many complaints being made as to its being killed out by the severity of the ordinary English winter, when the truth is that severe weather has had nothing to do with it, only error in choosing unsuitable positions and soils.

The other day I was much interested in a couple of almost fully developed specimens at High Elms, and which were growing not in company with other trees, but at a respectable distance therefrom, and consequently where little or no shelter was afforded. They looked hale and healthy with abundantly produced foliage, and flowered not every year, but about every tenth year. The flowers are formed the autumn preceding the spring when they should expand, and in consequence are very liable to get injured during the winter; this accounts for how seldom well-developed blooms of the *Paulownia* are to be seen in this country.

Around London there are not a few good examples of the *Paulownia*, while as far north as Yorkshire it does well and flowers freely in certain seasons. The name *Vanilla* tree has been absurdly applied to the *Paulownia*, probably from the perfume of the flowers, which certainly in a slight degree resembles the agreeable scent of the *Vanilla*. *Gloxinia* tree is another and certainly more fitting appellation for the *Paulownia*, as the flowers both in shape and colouring have a marked resemblance to those of that favoured flower. The flowers are purplish-violet, shaded with lighter tints, and produced in large, loose, and erect panicles. The

leaves, too, are remarkable for their large size and handsome appearance.

A. D. WEBSTER.

EUONYMUS IN FRUIT.

EXCLUSIVE of the evergreen forms of *Euonymus* which are now met with almost everywhere, the commonest member of the genus is our own British Spindle Tree (*E. europæus*), plentiful enough in hedgerows in some localities, and where favourably situated remarkable for its profusion of showy fruits. The typical kind has the curious four-angled capsules of a pale scarlet colour, which when ripe partially open and show the orange-coloured seeds. A distinct form of this is one (*fructu-albo*) in which the outside of the capsules is white, but it is far less showy than the common one. The leaves of this often die off tinged with red, but they usually soon drop after changing colour. The *Euonymus* will succeed in almost any soil and situation, and from its large mass of vigorous roots it bears transplanting well. From seed which ripens readily enough young plants can be raised in quantity, so that a stock of it is easily obtained. The European *Euonymus* is usually so crowded in shrubberies, hedgerows, &c., that a well developed specimen is rarely seen. If encouraged to grow it will form a handsome shrub or small tree 12 feet to 15 feet high, or even higher, and when laden with fruit such a plant is remarkably showy. When treated as a single specimen the plant should during its earlier growth be moderately pruned in order to ensure a good clean stem, as then the branches are disposed in a pleasing manner; whereas if untouched, two or three shoots of about equal strength will often start from the base and thus form a somewhat irregularly-shaped bush. Beautiful, however, as our British species is, it is surpassed by another European kind, which has been so long in this country as to almost entitle it to be regarded as a native. I allude to the broad-leaved Spindle Tree (*E. latifolius*), which is found throughout a considerable district in Southern and Central Europe. This species was introduced into British gardens early in the last century, yet it is quite a rarity, and when some fine sprays of it were exhibited by Messrs. Veitch some seven or eight years since at one of the meetings of the Royal Horticultural Society then held at Kensington, it was awarded a first-class certificate, and regarded by many who saw it as a most desirable novelty. This differs from the common Spindle Tree in the leaves being larger and broader, the whole plant more vigorous, while the fruits are even more conspicuous. This *Euonymus*, when allowed space for its full development, forms quite a tree, with a rather dense rounded head of a very elegant outline, owing to the somewhat drooping character of the branches. The fruits are especially remarkable from the fact that when the bright red capsules open, the orange-coloured seeds hang suspended therefrom by slender threads, such as may be seen in some of the *Magnolias*. It furnishes a conspicuous feature for some time, as the fruits are generally retained till about the end of November. The most marked winter characteristics are the regular arrangement of the branches and the smooth reddish green bark. Given a fairly moist soil, this *Euonymus* will grow away freely, and soon attain a considerable size. Among other deciduous species of *Euonymus* may be mentioned two, both natives of America, viz., *E. americanus* and *E. atropurpureus*, which, however, do not seem to thrive as well in this country as European kinds. *E. americanus*, the Strawberry Bush, or sometimes known as the Burning Bush of the States, forms a low shrub of a half rambling habit with bright scarlet fruit. The peculiarly roughened fruits bear a certain amount of resemblance to the berries of *Arbutus Unedo*, hence its name of the Strawberry Bush. The other American species, *E. atropurpureus*, is more like our common European form, as it assumes the character of a somewhat upright growing bush, 6 feet or 8 feet in height, with small, but peculiarly dark purplish flowers borne soon after midsummer, and succeeded by a profusion of such bright-coloured fruit as to receive the name of Burning Bush. It is found wild from

New York to the Carolinas, where it principally inhabits the neighbourhood of streams, so that some of its non-success in this country is perhaps owing to the fact that it needs a moister position than is usually assigned it. A curious *Euonymus* is the Central European *E. verrucosus*, a large growing upright bush with rough warted branches. The purplish red fruit of this is not so showy as that of the others. The little spreading growing *E. nanus*, which has very narrow leaves, is essentially a rock-work plant, but rarely used for that purpose. The pinkish coloured fruits are very pretty, but borne sparingly.

T.

Quercus pedunculata.—This Oak, concerning which inquiries are made on page 371, is certainly not rare, for it is the commonest of the British species, and may be regarded as our own native Oak, at one time greatly in request for ship-building, but now to a great extent superseded by iron. *Q. pedunculata* is besides known under the name of *Q. Robur*, and it is also the white Oak of the forester, the red Oak being *Q. sessiliflora*. These names refer to the colour of the wood, but the difference between the two is not strongly marked. They must not be confounded with the red Oak (*Q. rubra*) and the white Oak (*Q. alba*) of the United States. The British Oaks are both natives of a considerable tract of country, being found generally throughout Europe and Western Asia. *Q. pedunculata* is usually regarded as superior from a timber point of view to *Q. sessiliflora*, but by some it is contended that the difference is principally owing to the conditions under which they have been grown.—T.

— This is regarded as a sub-species of *Q. Robur*, known as the British Oak. It is found abundantly in the southern and midland counties of England; it is a native of most of the milder parts of Europe, extending from the shores of the Atlantic to the Ural. The acorns, generally two or more together, are borne on long stalks, and the leaves nearly sessile. The relative qualities of the varieties have been the frequent subject of debate. *Q. pedunculata* has the superiority as far as durability in water is concerned, but is less rich in tannic acid than the sessile-fruited Oak.—E. A. E. H., *Holbrook Hall*.

The Chili Pine (*Araucaria imbricata*) does not, as stated at page 371, lose its male cones as soon as the pollen is shed. The reverse is the case here, as you no doubt noticed some time ago when I sent a branch, with both old and young male cones, to THE GARDEN office, and this is fortunate too, for the deep brown of the old and the light changeable tints of the young contrast markedly and agreeably. Just now I have branches with three crops of pollen cones upon them from trees planted in commemoration of the building of the Crystal Palace, thus showing that these occasionally remain on the branches for several years. There is a curious case of an *Araucaria* on this estate that has never borne female cones, and yet from year to year the tree is literally studded with pollen-bearing cones. Last season I counted about one hundred and seventy-nine. They are very showy and put one much in mind of the female cones of *Menzies' Spruce* (*Abies Menziesi*). Neither are the pollen cones of the *Araucaria*, as stated on the same page, produced (exclusively) at the extremities of the upper branches, for in the trees to which I refer the lower branches, at least those fully halfway down the stem, are quite as thickly studded as are those further up, and in sending you the twig of cones, I had to remove the tip for convenience in transit.—A. D. WEBSTER.

Road scrapings.—I have experienced some of the evils of using road scrapings for pot plants, and quite agree with J. Wood (GARDEN, p. 377) that this kind of material often contains much that is injurious to plant life. My first experience of this material was in Sussex where the roads were made up with flints which are found in the South Downs; consequently the scrapings are of the very best quality, and may be used instead of sand for almost any class of plants, and cannot be too highly

valued. Having formed such a high opinion of road scrapings, I was somewhat surprised to find that the material collected from the roads in and around London was injurious rather than beneficial to many things.—F.

KITCHEN GARDEN.

VEGETABLES AT CHRYSANTHEMUM SHOWS.

Most of the more important Chrysanthemum shows in our district now include classes for vegetables in large or small collections, and many, in addition, also have separate exhibits of Potatoes, Tomatoes, Mushrooms, Cucumbers, and salading. In most instances the competition is remarkably close and good, the produce shown in the prize-winning collections being of very superior quality. With so many more attractive features at these meetings, the vegetables do not lead to obstructions or the collecting together of crowds of interested visitors, but they are thoroughly appreciated all the same and prove most instructive. There is no lack of variety in vegetables at this time of year, and more often than not the exhibitors of collections limited in extent are more in need of advice as to what is best left out, not knowing upon which to set the greatest value.

Nothing is more annoying to an unsuccessful exhibitor than the knowledge, too late attained, that he might have done much better had he made a better selection at the outset. In this, as in a variety of other matters connected with gardening, failures or mistakes, when discovered to be such, have a beneficial effect upon the perpetrators, the experience gained, or "bought," being profited by on future occasions. Whatever may be the result of the competition, it is useless to indulge in vain regrets, or, what is still more to be condemned, viz., useless abuse of the judges, and it is now when the judgment must be exercised, good use being made of any previously gained experience or advice tendered. Without an examination of the vegetables available for a collection, it is scarcely possible to offer perfectly trustworthy advice, but a few general hints ought not to be lost on those standing in need of it. Where the inexperienced too often err is in taking advice without well using their own judgment. If a friend recommends a certain selection of vegetables as being most likely to find favour with the judges, it does not follow that this must be closely adhered to, but, on the contrary, unless the schedule states exactly what kinds must be shown, a selection should be varied to suit the convenience of the exhibitors. I would always include the best dish of Potatoes available in a collection of vegetables, however limited in extent, but no other kind should be similarly honoured. Potatoes are simply indispensable, and to no other vegetable can a similar remark apply. Thus if Onions are not really good, substitute something else that really is. I would go so far as to omit poor or badly discoloured Cauliflowers in favour of well-grown Savoy's other than the coarse Drumhead, or even medium-sized and not too old hearts of common Cabbage. A nearly or quite perfect dish of Tomatoes, not necessarily large, but well coloured, firm, and even sized fruit, is of great value in a collection however limited; but no one should imagine that an inferior dish, and which includes perhaps some fruit much too ripe, the sizes also being various, must count well merely because they are Tomatoes. Better by far leave them out and substitute something that is perfect. Others imagine that because they have managed to force a bunch of

Seakale into a presentable condition, or have preserved a small dish of Beans or Peas, their collection is much enhanced in value thereby and fail to understand why the judges do not see things in the same light. In reality very little weight is attached to Seakale or even Asparagus at this very unseasonable date, nor are poor samples of Beans and Peas of much value. This season it is very probable that Globe Artichokes will be available in November, at any rate they are fairly plentiful now, but unless they are of good size and quite fresh in appearance and succulent, they had far better be left out of all but unlimited collections. Cucumbers, again, are of little assistance unless really well grown and presumably fit to eat, as it is very certain clean, well grown and well selected Beetroot would be accorded more points.

To make the preceding remarks thoroughly intelligible and for other reasons, I propose to discuss the methods of judging in vogue. When there are several collections of vegetables of apparently equal merit, it is impossible to do justice to the exhibitors other than by judging by points, judging by comparison being most unsatisfactory in the extreme. The former method is not nearly so often followed as it ought to be, and it is to be hoped the time will soon come when it will be generally adopted. Not only is it the most satisfactory to all parties concerned, but it is also the quickest in the end. Racing up and down a room or tent and comparing collections is a tedious and tiring business, added to which those who practise it have often no indisputable facts to support their decisions when these are called into question, and which they very often are; whereas those who have judged by points have the figures to show and prove their case. The only difficulty I have experienced in point-judging is with my fellow judges, opinions varying as to the comparative value of the different kinds of vegetables in competition. As a rule, the fairest plan is to fix a maximum of six points, the full number being awarded to all the best kinds in season, should their superior condition denote extra skilful culture. In this case perfect examples of Potatoes, Parsnips, Beets, Carrots, Turnips or Onions would score equally as well as well-grown Tomatoes, Celery, Cauliflowers, Cucumbers, or Mushrooms. At first, when judging at a large show in the midlands, I could not quite agree with this dictum, but in the end was obliged to admit that quite as much, if not more, skill was required to produce perfect examples of the six first-named as any of the succeeding five kinds, the points being awarded accordingly. When an agreement has been arrived at by the judges, overhauling and appraising the value of the respective collections are comparatively simple, and, all considered, sufficiently good. Being duly gone over, simple addition settles which are the prize winners and those to be commended in their order of merit.

The question naturally arises, Which are the vegetables in season and to which the greatest value, all other conditions being equal, should be attached? At the present time I would endeavour to have for a collection limited say to eight or ten distinct kinds, Potatoes, Cauliflowers, Tomatoes, Carrots, Onions, Celery, Turnips, Leeks, Brussels Sprouts, and Mushrooms, with Parsnips and Beet in reserve. Once more let me repeat how very unwise to include any one of these, other than Potatoes, in a collection unless perfect in every way, as one or two dishes to which not more than three points can be awarded are frequently enough to quite shut out the whole exhibit wherever

the competition is keen. At any rate, it would do so at either Bath or Bristol, and only by the most careless or unfair judging can one or two extra fine dishes drag an otherwise inferior collection to the front anywhere. Too often immense red Cabbages, common Cabbages, and Savoy's are set up prominently in a collection, whereas these and very coarse Brussels Sprouts count for very little with competent judges, or those who are well aware what class of vegetables are the best for the dining table. If any variety of Savoy must be shown let it be Dwarf Ulm in good condition, and none but medium-sized, very close Brussels Sprouts should be shown, the days for the bloated, strongly-flavoured Aigburth being past. Coarseness and roughness generally ought to be avoided, but, on the other hand, the preference, whether rightly or wrongly, is usually given to well-grown and properly selected samples rather above the medium size, those that are really the most serviceable not being imposing enough on an exhibition table. An extra point gained by superior arrangement sometimes turns the scale in favour of those credited with it, and all should therefore take every pains in staging.

W. IGGULDEN.

KITCHEN GARDEN NOTES.

AUTUMN CAULIFLOWERS AND BROCCOLI.

BOTH Eclipse and Autumn Giant Cauliflowers have been remarkably fine and very plentiful this season. Plenty of the latter had clean solid hearts about 14 inches in diameter, and that, too, under only ordinarily good culture. The earliest raised autumn Broccoli, including Veitch's Self Protecting, Michaelmas White, and White Cape, commenced hearting in long before they were needed, and these would have been of much greater service later on. The stock of Autumn Giant Cauliflower raised in the open air is far from being exhausted, and as neither these nor either of the Broccoli named can be said to be sufficiently hardy or self-protecting to withstand a moderately severe frost, the wisest course is to lift and store as many as possible either in houses or pits, or where they can be roughly protected. All are frequently damaged when the hearts are quite small or only just showing, no amount of leaves placed round them serving to save them. To lift the plants before the hearts are well advanced naturally checks their growth and renders them comparatively small. Seeing how much they are needed all through the winter months, it behoves those responsible in the matter to preserve as many small hearts as circumstances permit rather than risk having none at all. As severe frosts are likely soon to come, a portion of the crops at least should be lifted with a good ball of soil about the roots, and stored in pits or vine-ries, Peach houses, cold pits, rough frames, or even open-fronted sheds. It is advisable to cut off the very oldest or lower leaves, and to pack all moderately close together, firmly surrounding the roots with rich moist soil. Being kept cool, well supplied with water, and protected, if need be, from severe frosts, the roots soon take possession of the rich soil, and in the end a moderately large heart is formed. If lifted in batches a long succession may be maintained, it being quite possible to cut Veitch's Protecting (the best of the autumn Broccoli) as late as February, or till about the time Snow's Winter White is plentiful. The least that can be done is to bed in a lot of plants in a corner where they can be quickly covered with mats or other protective material.

LETTUCE AND ENDIVE.

Of the Cos varieties of Lettuce, the Black-seeded Bath is the only variety that blanches well at this time of year, the rest being more or less green right through. It can also be transplanted well, and seeing how uncertain is the weather, especially in November, in which month severe frosts are apt to come upon us very suddenly, no time ought to be lost in storing in frames or beds where they can

quickly be covered as many plants as there are fit. Care should be taken not to bruise them in any way, the leaves being tied up well together round the hearts and the plants lifted with a trowel. They ought to be packed together moderately thickly in good moist soil, the greater portion of the ties removed, plenty of air being given whenever the weather permits, and protection from severe frosts afforded. Thus carefully treated, Lettuce will keep many weeks, and by most are welcomed in a salad in conjunction with Endive any time during the winter. The Cabbage varieties are not so easily transplanted without injury, and the best plan with these is to cover them with frames and handlights if possible where they are grown. We have a bed of Early Paris Market in excellent condition at the present time. They are literally all heart and press against each other; consequently can easily be covered by a frame, one of which will enclose many scores of plants. This variety is of superior appearance and quality to any I have tried for either early or late sowing. Endive also ought to be taken good care of, as should the frost injure the points of the leaves the decay soon spreads to the rest of the plant. The autumn has been exceptionally favourable to the growth of the plants, and it would be a pity if such useful produce should be lost for want of a little temporary protection. A portion at least of the plants ought to be tied up, carefully lifted and bedded in either in cold frames, pits, cool fruit houses, or under an open-fronted shed. The least that can be done is to plant them thickly in a dry sheltered corner where they can be temporarily protected with the aid of rough frames and mats. In some instances lights can be spared from pits or the roofs of Peach houses, and if rough frames can be constructed of a few boards and stakes to suit these, they could be turned to good account in protecting large quantities of Endive. Rather than lose much of our stock we have in previous years constructed rough frames, and covered these when necessary with either wooden shutters or straw-thatched hurdles. Plenty of air ought to be given both Lettuce and Endive in frames, and additional coverings in the shape of mats, strawy litter or Bracken should be placed over and around the frames. Should frosts by any chance reach the plants they ought not to be uncovered till a gradual and complete thaw has taken place. The Endive may be blanched where stored either by tying up the outer leaves over the hearts, by covering with mats, or by placing some in a Mushroom house, sufficient to last a week or so being blanched at a time. Our best Endive at the present time is to be found in the seed beds, and these, duly protected, will afford several bushels of perfectly blanched hearts without any further trouble, the plants serving to blanch each other.

VARIOUS SALADING.

With abundance of Endive there is little or no need of Chicory, and the roots of this may well be preserved till there is a greater demand for the well-blanched tops so easily obtained and so profusely produced by them when placed in a Mushroom house or other darkened and warm place. Corn salad few care to use, but if well grown and the hearts somewhat blanched it might find favour, especially where Lettuce and Endive are scarce. As a rule, it is grown much too thickly, and in this case no heart worthy of the name is formed, though the flavour of the full grown leaves is liked by some. A little strawy litter is all the covering needed in frosty weather, and in some districts even this is unnecessary. Chervil ought to be covered by a frame or handlight, a small breadth of plants yielding sufficient leaves to last all the winter—a very little of this sufficing in salads. Tarragon where duly cut down in the summer will last till damaged by severe frosts, and after the roots have had a short rest a flat box may be filled with these and placed in gentle heat to produce tops during the latter part of the winter. Young Onions ought still to be plentiful in the open ground, and more can be had by sowing seed of any variety in boxes and placing these in heat. Mustard and Cress are considered indispensable in many establishments for the breakfast table, sand-

wiches, and the salad-bowl, and there is no reason why those with a little heat at their disposal should not keep up a regular supply. Sound new or nearly new seed and fresh soil for every sowing are prime conditions leading to success, and where so many fail is in attempting to grow this small salading in the same box of soil repeatedly, wholesale damping off or a failure to grow evenly and strongly being the sure consequence. Old Mushroom bed soil and manure is the best material for filling the shallow boxes used for the purpose of growing Mustard and Cress, this being made firm and smooth and well moistened prior to sowing the seed. It is unwise to sow both kinds in the same box, the Mustard being of quicker growth than Cress. Sow both thickly on the surface and press into the soil with either a flat board or the bottom of a flower-pot, but do not cover with soil of any kind. Place the boxes in a warm house or pit, cover closely either with mats or brown paper, and do not remove these till the stems of the seedlings are 2 inches long, this length of blanched stem greatly improving the appearance of the salad. Gradually expose to the light and remove to a cooler house before growth is far advanced. The soil ought never be allowed to become dry, but the water must be very gently applied. Sow more seed every week, or oftener if need be. Young forced Radishes are far preferable to any old ones that may be drawn from the open ground, being more attractive in appearance, tender and wholesome. Nor are they particularly difficult to obtain. A frame set on a gentle hotbed and partially filled with some of the shortest of the heating material, so as to bring the 9 inches of fairly good, fine, and light soil placed on this well up to the glass, is needed for the purpose. The surface should be watered, the seed sown rather thinly broadcast, pressed into the soil, and covered with about 1 inch of fine mould. Keep close and dark till the seedlings are up, then gradually expose to the light, thinning out the plants where at all thick, and giving air moderately whenever it is sufficiently mild. Growth in the short days of the autumn and winter months will not be very rapid, but if not unduly coddled, or, on the other hand, not neglected and exposed to low temperatures, the Radishes will bulb evenly and keep fairly well. A fresh frame ought to be prepared and sown a month later on. The short-topped forcing Turnip-rooted varieties are well adapted for sowing now, and a pleasing variety will be obtained by adding Crimson Olive and Forcing Carmine Globe.

W. I.

Potato The Puritan.—When at Colchester recently Mr. Cant informed me that he considered this one of the finest and best Potatoes. It is an American kind and described as a white form of the well-known Early Rose. This Potato is well worth the attention of English growers, as from inquiries I find Mr. Cant is not alone in his praise of it, as all who have tried it speak highly of it.—A. H.

Giant Sprouts.—At the recent vegetable conference a sample of a giant form of sprouts was shown by Mr. McIndoe. It had a taking appearance, as the sprouts, though very large, were closely set on the stems, and the cooked sample was found to be deliciously tender, having in it a combination of the flavour of the Brussels Sprouts with the delicacy of the Colewort. It so happened that growing samples of the sprout from the same strain were in the gardens close by the large vinery, and these showed such irregularity of form that no recognition of the variety could be given. It may not be known that myriads of this particular class of sprouts, a sort of bastard in the Brassica family, can be produced by seeding the Brussels Sprout and Colewort or any small Cabbage side by side. I have had precisely similar things from the Colewort cross, and very fine looking and pleasant eating have the sprouts been; indeed, more tender and delicately flavoured than from the Cabbage cross, as also rather smaller. We may not have much room in gardens just now for breaks of this kind unless they show some special excellence, as none of them displace the true Brussels Sprouts, which well grown is as profitable a crop in cottage gardens as in the gardens of the wealthy.

Only one fault may be found with the Brussels Sprout. It is at times rather strongly flavoured, but that defect is found more in the large than in the small sorts. The sprouts of the bastard form Mr. McIndoe had, though so big, were particularly delicately flavoured. If any of these cross breeds of Brassica are put into the market they should be severely tested and rogued first, and because they are biennials it is a long and tedious process. It is not large sprouts that are desired, but those which are very green, firm, and of delicate flavour. There can be no harm in working for such, although there is little prospect at present that the Brussels Sprout will be displaced.—A. D.

GARDEN FLORA.

PLATE 725.

TUFTED PANSIES.

(WITH A COLOURED PLATE OF ARIEL.)*

A COMPARATIVELY little known, but lovely Pansy is that which forms the subject of the coloured plate. It is one of the most distinct and beautifully coloured kinds ever sent out. Ariel is not a florist's flower, and the florists of the old school would probably have rejected it had it appeared in a batch of their seedlings, but Ariel cannot be dispensed with, for whilst pleasing in colour it is also delightful in its changes. Mauve-blue and white are the two colours found in the flower, but not in the form of blotches or encircling bands of geometric evenness. First one and then the other predominate, and the paleness and delicacy, or brightness and intensity of colour are ruled by the season; in fact a week may suffice to so change the colour, that one would hardly recognise it to be the same Pansy. On a spring morning Ariel will open flowers that are of a pale self-blue colour, which appears to overlie a white ground, and there is a distinct suffusion of white about the centre of the flower, this colour giving place to a soft yellow in the eye. But as the days grow longer and brighter the colour becomes lighter; the blue gradually fades to a delicate shade, and then appears to be absorbed in the white, which runs nearly through the entire flower. Mr. Moon has drawn it in one of the prettiest of its charming and changeable phases, which are so numerous and variable, that several plates might be prepared characteristically different in colour, the only point of resemblance being the form of the flower, which is maintained all through.

From the old florist's standpoint this colour variation would be considered a sad defect; he would tell us the colour was not fixed or decided, that one or the other would run out. Ceaseless change is apparently an inherited propensity of Ariel, and to fix the colour would be to deprive it of more than half its charm. Wishing to obtain a good stock of Ariel for autumn planting, I took a lot of cuttings in July and August, when the flowers were lighter even than those in the plate, and now there is ample proof that the flower remains true to itself, for fine strong plants resulting from those cuttings recently planted out have good flowers upon them, and will produce a few more till severe frost comes. The colour of the flowers now is, however, the same as that of those which appear in the spring, because the autumn days are cooler and less bright. Quaker Maid is another Pansy whose colour varies, but in an opposite direction, for in early spring the flowers are a French white or very pale mauve,

* Drawn for THE GARDEN at Gravetye Manor, Sussex, by H. G. Moon, July 11, 1889. Lithographed and printed by Guillaume Severeys.



TUFTED PANSY "ARIEL"

but as the days grow longer and brighter the colour becomes deeper, the summer flowers taking on quite a mauve tint. The picture shows one aspect, and I have attempted to describe the others, but to all who love the Pansy for its own sake and for its beauty in the garden rather than in its abnormally shaped and coloured forms which are exhibited, my advice is, grow Ariel, and by successional planting enjoy its changes and charms through spring, summer, and autumn. It is a good grower and free bloomer, of a close and dwarf, but spreading habit. The flowers are of a bold and fine form, and are borne erect on strong footstalks,

comparatively useless, and having just cited what they are for comparison's sake they can be dismissed entirely, but not so those that we call tufted Pansies.

In the flower garden tufted Pansies must play an important part. Spring ushers them in, and in April and May the garden where they are grown in quantity is a glorious picture, but not a gaudy one, for there is a soft delicate beauty in their many quiet shades. Gardens where Pansies are—not single plants, but the best kinds in broad masses—will be gay whilst the bedded out garden is yet bare. Moreover, as many erroneously suppose, the beauty of the Pansies

end of May or early in June it is advisable to remove them to the reserve garden, divide them, and put them in to form a stock for autumn planting. There should be a stock to go to the garden in April, not of course in the same positions as those just removed, but somewhere so long as they are not absent. The gaps may be filled with summer things, or whatever is desired. As carpet plants to a fresh group of Tea Roses that have not closed up, or as a groundwork out of which Gladioli or other tall bulbous plants that do not hide the ground might spring up, the tufted Pansies may be grown. If the soil be hot, much may be done by mulching, and in exceptionally dry gardens a little half-shaded border might be planted with Pansies alone. One such border I saw last season, and which, though planted in October of the previous year, was good till October came again. It was in that border that Ariel first unfolded and revealed to us its charms, and the group was a picture for seven months. Five good kinds have been mentioned in this article, and others might be added, such as Mrs. Gray (see illustration) and Countess of Hopetoun, creamy white varieties; Ardwell Gem, the best of the soft yellows; Mrs. Turner, a lovely kind, much used in the Hyde Park summer bedding arrangements, and many others. Tastes differ and fancies vary, and there is variety enough to satisfy all. A good way to gratify one's own desires, and to become acquainted with what kinds are to be had, is to write in Pansy-time to some nurseryman who grows them largely and well, and ask him to post a box of blooms with the names of the kinds appended. It is obvious that a much better selection can be made in this way than from a catalogue, in which the only guide is a necessarily short and often imperfect description of the respective kinds. In Pansies, as in other things, avoid a great collection, but obtain a good selection and grow each kind in quantity.

Concerning this tufted Pansy, Messrs. Dicksons and Co., Edinburgh, write as follows:—

Ariel was raised by us from *V. stricta*, an Indian species having remarkably long stems and unusually thick wax-like petals. Although the species does not produce such a profusion of flowers as some of the other tufted Pansies, they are much less easily affected by weather, and the flowers last so long that they are invaluable for glasses. Ariel is one of a group of seedlings from *V. stricta*, each one of which is marked by the characteristics of the parent. The other seedlings from *V. stricta* are *stricta alba*, *s. azurea*, *s. aurea*, *Indiana*, *Cygnets*, *Nugget*; these differ from other tufted Pansies in having no blotch or rays from the eye, and they all retain the thick, stiff,

leathery foliage peculiar to the species.

A. H.

Sparrows and caterpillars.—A good word has at last been said for the sparrow in America. In England this impudent bird is decidedly popular, but our kinsfolk in the United States consider him an unmitigated nuisance. Captain W. F. Segrave, British Consul at Baltimore, writing on the subject in a recent report, warns the Americans that their policy in waging war against the sparrow may prove to be a mistake. "The great 'blizzard' of March, 1888," he says, "destroyed multitudes of sparrows, and as a consequence, the past and present summers have seen a vast increase in grubs and



Tufted Pansy Mrs. Gray.

which are about 4 inches in length, so that the flowers can be gathered, and, lastly, they have a delicate, but delightful scent. This is the fifth fine tufted Pansy that has been quite recently figured. Abercorn Gem and Mrs. Kinnear appeared in *THE GARDEN*, April 30, 1887, Quaker Maid and Jackanapes in *THE GARDEN*, Dec. 1, 1888, and now we have Ariel. Figuring in colour these finer types of a beautiful race must of necessity popularise them.

The show Pansy is a long straggling grower, producing but few flowers, and to have these in perfection the plants must be highly and richly fed, but in the flower garden they are

does not fade with the advent of summer. Those groups that have been resplendent through the spring months may become shabby, but this does not imply that the flowering season is past, for except upon very hot soils Pansies will be good all through summer, and at the same time associate well with Tea Roses and Carnations. Remove the groups whose beauty is on the wane, but have others coming on. To grow Pansies extensively and enjoy their beauty through spring and summer, have a good stock of plants and put out in October and April. The October plantations are those that brighten the garden in spring, but towards the

caterpillars. Already in many large cities the inhabitants through the public press are complaining of the destruction of their ornamental trees, the diminished number of sparrows being unable to keep in check the vast increase which has taken place in noxious grubs, worms and caterpillars."—*Nature*.

FRUIT GARDEN.

W. COLEMAN.

HARDY FRUIT NOTES.

IN course of conversation with one of the great fruit tree producers a few weeks ago he wished most fervently for a sharp frost to settle the foliage, and quite recently the representative of another extensive manufacturer told me he could not conscientiously commence lifting until after a heavy rain. Each of these gentlemen has had his wish, and the ground just now being in splendid condition for lifting and planting, some millions of trees I have no doubt will have changed hands during the month of October. October is considered the best month for the transplanting of trees from the home nursery, as suitable days can be selected for lifting operations, and although in full leaf they do not suffer, as the roots never become dry. Trade lifting, packing, and despatching by goods trains to distant parts of the country, as all practical planters know, is a different business altogether, as many days may elapse before the roots are restored to their natural element. This being so, the buds should be well up and fairly matured before the trees are lifted, but this fact does not prevent buyers from sending in their orders; therefore, upon the principle that first comers get best served, I would impress upon procrastinating planters the importance of sending in their lists without delay. If November continues open and fine, this will be the great planting month of the year, not only with fruit growers, but also with nurserymen, especially if planters study their own interests by getting their trees direct from the quarters instead of from the reserve laid in by the heels. There is no harm in laying in young stock, but the operation hampers the trade, and unless very carefully performed, dry and frosty air gets in and seriously injures the roots. Growers themselves, I may say, are not always so careful as they might be, as I have seen most beautiful fruit and other trees, which have been delivered in good condition, very badly used by men who ought to know better. The elements sometimes render immediate planting impossible, certainly inadvisable, as no prudent person plants when the weather is very wet or decidedly frosty; therefore in either case the first attention should be given to the roots. If parcels arrive in a frosted condition, they should be placed in a dark, open shed where they can be covered up with plenty of long litter until they are thawed and can be unpacked and planted. But, assuming that the weather is fine and mild, they should be opened at once, then taken one by one, the roots generally, especially those which have been injured, should be neatly pruned with a sharp knife. If at all dry, the next operation is puddling or dipping the roots in a tub of grout made of stiff loam, reduced to the consistency of thick paint by the addition of water. When partially dry the trees will be ready for planting, provided the stations are ready for them. Trees received in autumn do not often receive or always require this attention, but grouting is an old-fashioned method of healing and protecting the dry and newly-pruned roots, which costs very little and cannot do harm under any circumstances. Trees received in February or March, or any time in

fact after the sap has commenced moving, should never be planted until they have been well puddled, especially where water is scarce and flooding home is difficult or impracticable. Another important operation is

STAKING, for the gardener may puddle and plant and Apollos may water, but unless the trees are made secure from rocking or wind-waving they will make poor progress. Some plant first and stake afterwards, but, uncertain as to the whereabouts of the roots, the latter sometimes receive injury. To avoid this, each stake, be it strong and tall for a standard or thin and short for a dwarf, should be driven right home into the solid subsoil before the tree is planted. If set true to a line and all the trees are placed, say, on the north sides of the stakes, these also will be true, not that they will grow one whit better than if planted crooked, but forming perfectly straight lines in every direction they will show the master hand, when stakes can be dispensed with. The art of tying well is equally important, for if left too loose the stems may chafe; if too tight, the compost will sink away and the roots will drag or strangle. To steer clear of these evils the stakes to which orchard standards are about to be made secure at the proper height should be well padded with a strip of old cloth, a piece of jute bag, or coarse canvas bound several times tightly round it, then with soft rope yarn the stem may be made safe with just sufficient play to allow for settling. Hay is a favourite article with the farmer, but it is a tempting material to young stock; moreover, it soon wastes and looks untidy. All ties should be examined and put right once or twice in the course of the season, but if well done the first set of stakes should give any tree a start, and when thoroughly anchored it will be all the better for wind-waving.

FAILURE OF YOUNG FRUIT TREES.

THE time has arrived for making arrangements in regard to planting fruit trees, and those who have to purchase these will do well to order early, and thereby in all probability escape disappointment. It is not, however, with the ordering of trees that I am most concerned, but rather with their treatment at the hands, first of nurserymen and their assistants, and subsequently of those responsible for their future well-doing. Too often the last are blamed for failures with these young trees, when in reality the blame, if any, rests with those who fulfilled the order. That the latter are callous about what becomes of the trees when once they have left their hands, I do not for one moment assert, as it is very much to their interest that all should give satisfaction to the purchasers. This being so it behoves them to look more closely after what is being done by their employés, and thereby save much future worry to those who have to take charge of the trees on arriving at their destination.

When trees apparently in perfect health and condition fail to grow after being carefully planted and tended, this, to me, is proof positive that either they were badly lifted or else that the roots were unduly exposed many hours, and it may be several days, to cold drying winds, and from which severe check they cannot recover. After so much labour and pains have been expended in training and otherwise preparing young trees for sale, surely it is not too much to ask nurserymen to see that these be carefully lifted, and as many roots preserved as possible. Too often this work is left to careless labourers, or I must in all fairness add, reckless gardeners who may happen to be employed in the nurseries at the time, and these not unfrequently literally drag the trees out of the ground. Then to make matters worse, all the newly-lifted trees have to take their turn in being carried to a packing shed as each order is made up, and there again their delicate roots are far too long exposed to both the air and cold winds. The least

that can be done is to save as many fibres with the main roots as possible, and further to protect these as quickly as possible with moist litter or short straw manure, some of the latter also surrounding them in the bales or baskets in which they are transmitted to the purchasers. If what I have taken particular note of in nurseries that I could name, and which are located in different parts of the country, are exceptions to the rule, why is it let me ask, that both small and moderately large trees moved with little or no soil about the roots from one part of a garden to another, or which may be fetched from a considerable distance, rarely fail to thrive after their removal? Is it not because more care is taken of the roots? As a matter of fact the nursery trees ought to move better than the majority of those transplanted in private gardens, simply owing to their having been frequently lifted and replanted, being thus better furnished with fibrous roots, and therefore less likely to experience a severe check. All I ask is that reasonable care be taken of all trees lifted and packed in the various nurseries of this country during the coming season.

When purchasers are content to obtain those trees they intend planting from vendors who may attend open markets in country towns, they must not be surprised if a considerable number of these fail to grow satisfactorily. In the first place, these are often too large in proportion to the roots, the majority being trees of varieties for which there is no demand, and which find their way into the markets when the growers cannot afford to keep them any longer. Both the appearance of these trees and the low price at which they are offered tempt inexperienced buyers, who, perhaps, in spite of any warnings given them, will "buy their learning" in the matter. The only exceptions I would make is in favour of trees rightly named and brought to open markets by respectable local nurserymen, but even in this case it is better to order the trees direct from the nurseries and have them, if need be, properly packed, even if this entails an extra charge. The largest trees are not always the best; in fact, in very many instances quite small ones or maidens quickly surpass those several years older when planted. Much of this is due to the fact that the former are proportionately better furnished with roots than the much older trees, and consequently do not experience such a severe check by removal. We rarely plant anything else but maidens of any kind of fruit trees, but if we could depend upon larger trees or those three or four years older being carefully lifted and the roots not unduly exposed to all weathers, the preference would be given to those that would commence bearing good crops much more quickly.

All the blame, however, must not be saddled on the nurserymen, as in some instances where failures have occurred proper care has not been taken of the trees when first received. Sometimes the trees arrive when either the weather or the state of the ground prohibits planting. To leave the trees in bales for several days is very unwise unless a severe frost happens to prevail at the time, in which case they ought to be placed just as they are in a cellar or other moderately warm, yet moist place. On no account should young trees be puddled in. If the ground is in a badly saturated state the trees cannot properly be planted, and it is better to wait for several weeks or till the ground is drier rather than plant them in soil near the consistency of mortar; yet this is not unfrequently done. The trees ought in wet weather, directly they are received, to be unpacked and at once laid in by the "heels" or roots, surrounding the latter by moist fine soil. It is also advisable to throw a little litter over the trees and roots when severe frosts are imminent. The young wood is thereby protected and prevented from shrivelling. Those at all experienced in the matter can usually detect at a glance when the trees arrive whether or not the roots have been long exposed to drying winds, and if they are fairly moist and fresh, they may, weather permitting, be planted at once, all the preparation needed being to merely cut back those much damaged and to cleanly sever the jagged ends the better to facilitate healing.

Any that are found very dry and somewhat shrivelled ought, however, to be laid in a tank or pool of water for several hours, this plumping them up somewhat, and is certainly better than watering the newly-moved ground directly after planting, thereby badly saturating it. Roots are not so easily injured by immersion for several hours, or even days, in water as might be imagined. What does prove injurious to them is a sour, cold soil, and which quickly results from first watering and then heavily mulching them when newly planted. We neither water nor mulch during the winter, this being far better done when hot, dry weather may reasonably be anticipated or while it is being felt.

The worst failure I noted last season was in the case of a row of trained Peach and Nectarine trees planted in a newly-built house. A rather high price was paid to a firm of good repute for the trees, and they were planted in a well-made border. When called in to discover, if possible, what was the matter with the greater portion of them, I learnt from the gardener in charge that the trees had been longer than they ought to have been on the road and were very dry at the roots. Unfortunately, they were not soaked in water, and no doubt the transferring of imperfectly ripened trees from the open ground to a dry house, coupled probably with long exposure to cold drying winds, first in the packing sheds and subsequently during their journey to this district, were the principal causes of failure. Too early lifting is also to blame for some failures, imperfectly matured wood being most likely to shrivel quickly if unduly exposed. In addition to soaking the roots of much dried trees in water, I would also recommend either the immersion of the tops in water, or else frequent overhead syringings, more especially when they are placed under glass.

W. IGGULDEN.

Medlars.—These have produced a very full crop this year. As a rule, they fruit with more certainty than Apples or Pears, and the trees are so ornamental in habit that they may be grown in the pleasure grounds. The fruit would not drop off the trees until December or later. During some seasons we have not required all the crop, and those left on have remained so most of the winter; but to secure the fruit at its best, it should be gathered not later than the end of October. If gathered on a dry day and taken in and spread out in a thick layer in any cool airy room, the fruits will remain hard until December, after which they will begin to become soft, as if decaying, and it is then they are ready for dessert, or converting into jelly. Medlars are not universal favourites for dessert, but few fruits are more delicious when preserved. They do not all ripen on one day, but the ripening extends over a month or more, and Medlars remain good for a considerable time after they become soft.—J. MUIR.

Persimmons and Loquats in California.—It is very seldom that any new species of fruit becomes quickly popular in the markets of even a large city. The conservatism of purchasers has become proverbial among fruit growers. Botanists and horticultural journals praise dozens of new species of fruits for one that ever pays to cultivate. Here, in California, where the climate justifies a wide range of experimenting, we have had almost all the native fruits of China, Japan, Mexico, and South America tested to some extent. Very few of the new fruits can be sold in the markets. The Japanese Persimmon is the most surprising failure. It is very beautiful, and almost world-famous; it was planted extensively ten years ago throughout California, even in fifty-acre orchards, so certain of profitable sales were the leading horticulturists. For a short time these views were seemingly justified; the Persimmon, in eight or ten varieties, took the markets by storm, as it were, and sold for really enormous prices. But, after several years of trial, the general public, strange to say, will not buy Persimmons. Japanese, Chinese, and a few Americans and English who have lived in Japan will buy them; but to the average fruit-seeker they are still only a curiosity, and orchardists are cutting

down their Persimmon groves. The Japan Loquat is now being planted extensively for market and seems to suit the popular taste better, but my experience with the Persimmon makes me rather shy of venturing on a favourable prediction concerning it. Both the Loquat and the Persimmon are beautiful ornamental trees, and are already in great favour for lawns and copses. The Loquat also takes high rank as an avenue tree. It is at its best through the winter and spring, producing during December and January its fragrant whitish green flowers, which are followed by clusters of yellow fruit, which ripen here, near the bay of San Francisco, early in May, and are very handsome. The Persimmon, on the contrary, is at its best during the latter half of the year, especially in the late autumn when the large leaves turn crimson and golden, and, after the leaves fall, when the brilliant, glossy, scarlet fruits hang for many weeks on the boughs.—CHARLES HOWARD SHINN, *Niles, California.*

NEGLECTED FRUIT TREES.

THESE are to be found everywhere, for, no matter where one goes, fruit trees in a very neglected and poverty-stricken condition meet the eye. It is true that many of the existing orchards are too old, and the best thing that can be done with them is to grub up the trees and start afresh with a totally different crop. There are thousands of trees, however, that are not really too old for profitable culture, but which have been utterly neglected. I will briefly describe a fruit garden of this kind, and the magical change that followed better treatment.

A friend of mine purchased an old-fashioned house, with large garden attached. The garden was in a very neglected condition, but having plenty of spare time, the owner at once started on a thorough renovation of the place. It was a by no means easy task, as the trees had become matted together at the top, while the bottom was so choked with Gooseberry and Currant bushes that it was impossible to force one's way among them. The soil was full of Bindweed, that in summer completely covered the bushes and festooned the trees. Many would have despaired of ever seeing a well-ordered, much less a prolific fruit garden in such a wilderness. But this has been done, and the heaviest work this year has been gathering the fruit and supporting the branches to keep them from breaking down with the excessive crop. The Apple trees were especially heavily cropped.

The way in which the owner set about reclaiming this wilderness was as follows: In the first place, all the worn-out Gooseberry, Currant, Raspberry, and Strawberry plants were grubbed up and burnt. Then, having space to move about between the trees, they were carefully thinned out in the centres by cutting out all weakly spray and shortening the longest shoots. The soil was then forked over, and an immense quantity of roots of Bindweed extracted. A dressing of farmyard manure was then applied and forked into the ground, which was left rough on the surface. The following year the whole of the soil was left bare, and every particle of Bindweed forked out as soon as it showed its head above ground. This season good crops of vegetables have been grown in the spaces that are quite clear of fruit trees, while the crops that these have borne have been enormous. I may add that a great quantity of water was given to the trees while the fruit was swelling, as the soil is light and well drained. I feel sure that many who have trees in a similar condition would be surprised how soon good treatment is repaid by better crops. Half the trees that one finds failing to fruit are robbed at the root by worthless rubbish. No Apple, Pear, nor Plum tree can continue to bear fine fruit if its roots are interlaced by those of Currant or Gooseberry bushes.

Gosport.

JAMES GROOM.

The birds and hardy fruit.—It has often been said that birds will not injure hardy fruit unless they are hard driven by dry weather. I have never seen Apples and Pears so much de-

stroyed as they have been this year. We were obliged to net our trees of Ribston, Blenheim, and all good Apples, and even then the birds got on the net, pecked them or knocked them down, and then ate them on the ground. Pears fared no better. When calling recently at Dillington Gardens, near Ilminster, I was astonished to see the havoc the birds had made with the Pear crop on bush and espalier trees. In many places two or three large fruit of such kinds as Marie Louise more than half eaten could be seen. This damage was done principally by blackbirds. So bold were they, that they would come close to my door and get the Ribston Apples off the trees. Although cider Apples are plentiful, the birds prefer the good dessert kinds. Some Jargonelle Pears on a south wall were more than half destroyed. It cannot be owing to the dry season, as during the damp weather of July the birds were just as hard on our Raspberries and early Pears. It is clear that in these country districts where birds are so numerous, let the weather be what it may, they will destroy a large portion of the choice fruit unless it is protected by netting.—J. C. F.

WORK IN FRUIT HOUSES.

PINES.

THE plants in each compartment having been rearranged and placed under conditions likely to suit them for the next two months, the most important work will be attention to daily details, which will maintain the progress made through the growing season. Growth under extraordinary circumstances may be encouraged throughout the winter, but light and solar heat being so essential to progress, the safest and best plan is to give the plants a thorough rest by a gradual and considerable reduction in the supplies of heat and moisture. Pines, no matter whether the collection be large or small, at this time will be found divided into three distinct sections, viz., those swelling and ripening fruit, those which have made their growth and are biding their time for throwing up, and the rising generation in the form of autumn potted suckers.

Fruiters now plunged in a good bottom-heat with their heads close to the glass must have a high temperature, say 65° to 70° by night and 80° by day to keep the fruit swelling. They will not require overhead syringing, but the atmosphere of the house must be kept moist by damping the walls, floor, and surface of the bed, and if possible night covering with some warm, non-conducting material. Blinds on rollers, of course, answer best, as they can be run up and down on the approach of storms by day, and always during the hours of darkness through the winter. Another important aid is the outside manure lining, at one time so much in favour, but now detrimentally neglected by those having full command of hot water.

All plants upon which fruit is swelling, slowly of course, will require water at the root occasionally, but no rule can be laid down for its application. The only pitfall against which the young beginner may be guarded is keeping want away by dribbling, a practice which cannot be too strongly deprecated. Therefore, when any particular plant has reached the dry side, it should have enough to moisten the crock roots, whilst its neighbour only semi-dry may be left over to the next examination. The bottom-heat being 80°, a good temperature for swelling Pines, that of the water should not be lower, but certainly 5° higher, especially when the warmth of the bed is waning. When the fruits have attained their full size the pots may be mounded over with dry, warm tan or leaves, but no more water, as a rule, will be necessary. Rothschilds and Cayennes take more water than is good for Jamaicas. Queens after this date do not swell; therefore they are out of the question and may be throw away as useless.

Successions.—The first batch of Queens now resting will hardly require another drop of water until the time arrives for exciting the roots at the date fixed upon. In some beds it is possible for the roots creeping round the insides of the pots to

suffer, but when danger from too much drought is apprehended, the tan or leaves surrounding the pots should be moistened with tepid water and pressed firmly about them. Also it is possible to keep the roots too cold, but a few degrees more or less will do no harm, provided the bottom-heat ranges from 65° to 70°. The air temperature of course will be proportionately low, say 60° at night and 70° by day, as tops as well as roots must be spared excitement. The main set of plants intended to succeed the early Queens may be kept warmer and moister, as the most of them will make a growth before they throw up fruit in the spring, when roots which have been kept slightly moving will be capable of giving a full supply of nutriment instead of drawing upon the stored sap in the formation of new ones. Younger plants which will not start until after midsummer must be kept close to the glass in light, efficiently heated pits, where the roots will keep progressing through the winter. If in fruiting pots and the plunging material is moist they will require very little water through November and December, especially if the compost is of a tenacious nature. Plants, on the other hand, in 8-inch or 9-inch pots which they had fairly filled with roots by the end of October must be looked over and watered occasionally, otherwise extreme drought may be followed by premature starting when shifted on in January.

Suckers potted in September and recently removed from moist beds where fermenting material was the only heat-producing agent will require careful attention now they are plunged in pits heated by hot water. Much mischief is produced by a too liberal application of water in winter, but plants in small pots well filled with fleshy roots and plunged over bottom-heat pipes soon get dry under sharp forcing. When this happens direct watering is imperative, but prevention being better than cure, the plunging material should be kept moist by the application of tepid water.

THE ORCHARD HOUSE.

If very early forcing is contemplated, the compartment usually devoted to this work should now be cleansed, as the time is at hand for placing the trees in position. In the selection of Peaches and Nectarines for starting in November, early varieties well set with buds and thoroughly ripe will answer best, especially if the pots are not too large and well filled with sound healthy roots upon good drainage. Hale's Early, Alexander, and Waterloo are considered good early forcing Peaches; A Bec, Early Grosse Mignonne, Doctor Hogg, and Alexandra Noblesse form a good succession. Lord Napier, Advance, and Stanwick Elruge will supply the Nectarines. When each tree has been carefully washed with soapy water, and the pots well scrubbed, the requisite number may be taken in and placed in position ready for starting. The heads of the trees should be kept well up to the glass, with plenty of room for the full development of summer growth, and mild bottom-heat being a great help, elevation on inverted pots or a few courses of dry bricks, whilst regulating the height of the heads, will favour the introduction of a body of fermenting leaves amongst the pedestals.

Pruning.—If well disbudded in the spring and all superfluous shoots were removed immediately after the crop was gathered, the trees will require very little pruning; they must, nevertheless, be overhauled, as some of the strong shoots may be the better for cutting back to triple buds, a matter of 12 inches from their origin, whilst others may require hard pruning to ensure a relay of young growths for another year. The leaders, too, in the case of pyramids may require shortening back always to triple buds, it must be understood, but weak side shoots, with only two wood buds, one at the point, the other at the base, must be left intact, certainly until the crop is set and the young growths are pushing freely. An experienced person can shorten back each shoot to a nicety, but those who lack confidence will act wisely in deferring pruning altogether until there can be no question as to the position of the wood buds, one of which must be left at the point of each shoot.

MIXED ORCHARD HOUSE.

If not otherwise occupied with Chrysanthemums, I may say this structure, like the preceding, may be put into working order at leisure, as the trees need not be housed certainly before Christmas. Washing the glass and woodwork and lime-washing the walls are annual operations which may be performed in wet or wintry weather, and once in three years the inside should be properly painted with white lead, oil, and turpentine. If, as so frequently happens, the centre row or perhaps the whole of the centre bed in large houses contains permanently planted trees, these may be carefully washed with soapy water, thinned out and pruned into form, always provided the shoots so shortened are left with a bud at their extremities. This care in the retention of wood buds must not on any account be overlooked, as it is so easy to render a shoot useless by their removal. When this work is finished, the house cannot be kept too cool and airy when the weather is not unusually severe, but the roots of the trees must not feel the want of water, as it is to this condition that the worst cases of bud-dropping may be traced. There is, of course, no reason why the trees should not be introduced at any time, but a structure of this kind being so useful, keeping them out of doors until Christmas is a great convenience. The buds of trees generally being so ripe and prominent, the position upon which they are packed away with their pots secure from frost should be open and airy, otherwise a mild winter may force excitable varieties into early growth. Birds in some places are troublesome; therefore the trees must be carefully watched, or, better still, bird-proof nets at once may be thrown over them. If potting has been neglected, it is not too late to pull up arrears, although an earlier date gives the roots more time to get re-established in the fresh compost. Maiden trees also may be lifted and potted up and plunged in open borders, but much time having been lost, the best place is the lightest and most airy part of the orchard house. Figs should be well stored away where they can be kept dry and safe from frost; in fact, cold house trees may be kept indoors all the year round with the greatest advantage. Pot Strawberries, on the other hand, may be kept out in the open air, no matter how severe the weather, until the buds on the fruit trees are swelling freely. In the selection of Peaches, Pears, Plums, and Cherries for potting, no second-class variety should be accepted, as it is better to have a dozen duplicates of one good sort than one each of a dozen varieties. Pears are specially adapted for cold house culture, and the day, I hope, is not far distant when large houses will be devoted to the growth of pyramids and cordons, not only in pots, but also in elevated borders made of rather strong sandy loam resting upon clean drainage. Certain autumn and early winter sorts succeed more or less well in all districts, but unless that fine old variety Glou Morceau comes good, there are a good dozen of the best which will pay for glass culture.

Pot Strawberries.—The most important work amongst these just now is storing for the winter. Although the crowns have ripened well, a great number of growers will feel inclined to delay the operation of plunging until fine autumn weather gives way to decided winter. The work, nevertheless, must be got through, and, provided the open block system in temporary pits is adopted, they may be plunged now and still have full exposure. A single board on edge back and front forms the plunging pit; short stakes driven in to keep them up, and left a foot or so above the tops of the boards, serve a second purpose, as the laths for carrying the protecting cover can be well nailed to them after the plunging is finished. If the natural soil is used as a plunging medium, it should be limed or watered with lime water to destroy worms, which otherwise will do much mischief by getting into the rich, moist compost. Cocoa fibre, old tan, or dry Oak leaves, however, answer equally well or better, as they keep in moisture, and heaped well upon the pots they protect the rims during severe weather. The worst of all methods is piling the pots, resting on their sides, into cones and filling in

the centre with ashes, tan, or other materials. The winter proving thoroughly wet, the plants take no harm; but then even the balls in due course become dry and sink away from the sides, when the air gets in and many of the roots perish. Pot Strawberries, like pot Peaches, should never feel the want of water; hence the danger of laying them on their sides, a position which prevents the entrance of a most important element. W. C.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

— Amongst the very best Peaches for flavour are the old Noblesse, Dymond, Grosse Mignonne, Stirling Castle, and Royal George. The flavour of new kinds I have found to be inferior, and as the above varieties can be had fit for use quite soon enough for ordinary purposes when grown under glass, and are, moreover, infinitely superior in point of flavour, the new sorts, such as Alexander, Beatrice, and others, should be planted sparingly. Hale's Early is, however, a good flavoured Peach. The chief causes of inferior flavour in market Peaches I believe to be the excessive heavy crops the trees are allowed to carry, the grower telling us that he must have quantity to pay; consequently the nourishment which should only be appropriated to twenty fruits is shared among sixty; hence poor quality, and eventually a ruined tree. To this may also be added the fact that in many establishments where they market the produce labour is short, and the attendance the trees get in regard to watering, airing, thinning, and tying is carried out in a slovenly manner, and must in the end tell upon the quality of the crop. I believe the stock that gives the healthiest tree in one district will not give it in another, and the chief cause of success or failure is the nature of the soil upon which it feeds, coupled with situation and general surroundings. In regard to the special stocks which tend to produce canker, I believe that one will produce it equally as soon as another if the trees are not properly attended to. Peach and Nectarine culture in this neighbourhood is most uncertain and unsatisfactory; in fact, no one should attempt it unless it is with such sorts as Alexander, Amsden June, Hale's Early amongst Peaches, and Lord Napier amongst Nectarines.—JOHN CRAWFORD, *Coddington Hall, Newark-on-Trent*.

— Below I append a list of Peaches I am acquainted with and have had in various places in which I have lived. Alexandra Noblesse, large and good; Alexander, fine and early; Dagmar, large, handsome, and richly flavoured; Dr. Hogg, good; Dymond, good (I consider this a very fine variety, the tree being handsome and hardy); Early Louise, early and of good flavour; Early Silver, very large, delicious flavour; Goshawk, very large, pale, very good; Grosse Mignonne, fine flavour, large; Hale's Early, medium size, flavour good, and very early; Teton de Venus—this Peach is very sweet, and I consider it an excellent kind. Walburton Admirable I much prefer to all late Peaches that I am acquainted with; it is an old, but favourite variety. The last of my selection is Royal George, and this I think the best flavoured when well grown. The worst of this variety is that it is more subject to mildew than any other sort,

but a simple remedy is found to counteract this by mixing sulphur with soot to the consistency of whitewash and applying it to the wall at the back of the trees in the spring, when nailing and pruning are being done. I have found this a perfect check to this disease. For flavour I have found nothing better than the following: Royal George, Grosse Mignonne, Dagmar, Dr. Hogg, Early Louise, Dymond, Early Silver, Teton de Venus; for a late kind, Walburton Admirable. Some new kinds of Peaches are very good, but I do not think they excel the old kinds in flavour. There are three causes I can give why Peaches have a bad flavour. I have known market gardeners to pick the fruit before it is ripe; in another case I have sometimes seen the trees carrying as much fruit as four or five trees ought to do, and when the fruit is ripening, thinnings take place after the principal crop is ruined. Of course, the remaining crop is worthless as regards flavour. The last reason why we sometimes meet with bad flavoured fruit is on account of trees being planted in an undrained, wet subsoil, also some trees I have seen left unwashed; these trees cannot be expected to give fine flavoured fruit. I have tried various stocks, such as the Brompton, the Almond, and the seedling Peach, but I am convinced that the Mussel Plum stock is the best and hardiest of all. I do not think the stock has so much to do with disease as the cold, undrained soil in which the trees are planted. I have at present three different stocks on which the Peach is grafted, some budded, and all looking healthy; but on the Mussel stock the trees seem to have more vigour, and there seems to be a better or closer affinity between the scion and the stock. Outdoor culture in this neighbourhood not very successful, trees generally being badly managed.—J. G. DEAN, *Titsey Place, Limpsfield, Surrey.*

— Peaches, Apricots, and Nectarines are of little account grown outside here, and they are not worth the trouble. Regarding the poor flavour of some Peaches it may be from various causes. First, it may be the variety; second, it may be from over-cropping, and it may be from insufficiency of sun getting to the fruit; or it may be from other secondary causes, such as unsuitable soil, or keeping them too wet with insufficiency of air. I might say that I do not know that I ever tasted a bad Noblesse Peach that was grown under favourable circumstances, ordinary attention with plenty of light and air.—ROBT. MACKELLAR, *Abney Gardens, Chesham, Cheshire.*

— Peaches for flavour, Stirling Castle, Royal George, Violette Hâtive, Thames Bank, Dr. Hogg, and Vanguard. A great deal depends on treatment, which is the cause of so many complaints about flavour. I certainly say over-feeding and a close atmosphere are the causes of the above; nothing but plenty of night air with a little fire-heat to dry up the damp will give both flavour and colour.—T. H. SUTTON, *Workshop Manor, Notts.*

— Peaches, Nectarines, and Apricots are not grown outside here, the climate not suiting them; but inside the two former have had fairly good crops, and the fruit fine in size and colour. All our trees are on the Plum stock, which I think is the best that can be used. For flavour there are few, in my opinion, that can surpass Royal George, Early Grosse Mignonne and Red Magdalen coming next in order of merit with us. As to the cause of canker, a great deal depends on the kind of structure (I am speaking now of indoor cultivation) which a gardener has to contend with. It is manifestly unfair to expect any man to cultivate a tree as clean, healthy, and free from canker in one of the cumbersome, badly ventilated, old-fashioned houses one sees in some places as might be done in the light, well-ventilated modern structures. With some of the old houses it is next to impossible after syringing early in the morning to get the trees dry again before night; whereas, with the more modern house, better lighted, better heated, and better ventilated, the syringe may be used more freely, and the trees get dry again in one-third the time, and they are in consequence kept in a more healthy and more vigorous condition with little or no sign of canker. This, I think, has more to do with canker,

together with careless disbudding and stopping, than the stock used. With regard to the inferior flavour so often found in market Peaches, I may say that I have had little experience, but what little I have had I do not admire the system of packing, and there are few fruits that require more care in this particular than Peaches and Nectarines if their flavour is to be studied.—B. ASHTON, *Glossop Hall Gardens, Derbyshire.*

STOVE AND GREENHOUSE.

NOTES ON GESNERADS.

NEARLY the whole of the Gesnerads are remarkable for the beauty of their blossoms, many of them for their handsome foliage, while in the case of several the season of the year at which they bloom depends to a great extent upon the

during the month of February, and if grown on freely they will flower soon after midsummer and continue for months. Many of them will before the flowering stems are quite exhausted push up secondary ones, that after a short interval flower away as freely as before. Seed may be sown in fine light soil about the time the bulbs are potted, and the seedlings being attended to in the matter of pricking off when necessary and potting when required, they will flower well the same year. Though commonly regarded as intermediate house plants, I have grown the Tydeas required for autumn blooming in a cold frame during the summer months, where they formed good sturdy stuff full of flower-buds, and being removed into a gentle heat about the end of August they then commenced to flower, and continued till Christmas. Seedlings raised from a few good varieties give a very interesting series of flowers



Gloxinia maculata.

treatment accorded them, and consequently their bright showy blossoms can be obtained during the autumn and winter months. This class is much mixed, but I will speak of them under the name by which they are usually known. The Tydeas form a pretty free-flowering class, whose bright, quaintly marked blossoms may be had nearly all the year round, though from August to Christmas is the time at which they are especially valuable. They are of easy cultivation, needing much the same treatment as the Gloxinias, that is, potting in good light compost and encouraged to grow away as sturdily as possible. Where Tydeas are purchased, they are usually obtained from the nursery in the shape of dormant rhizomes during the winter months. The rhizomes should be potted about the end of January or

but where it is intended to increase any particular form, division of the rhizomes or cuttings of the young growing shoots must be resorted to. This is best carried out when the plants are dormant, while the cuttings may be formed of the tops of the young shoots taken during the early spring months and kept close in a gentle heat. At this season most of the Gloxinias are past, though under very favourable conditions some of the latest are still in bloom, and there is one distinct species (very different from the garden varieties) that does not follow till the autumn months. I allude to *Gloxinia maculata* (see illustration), a very old plant, having been introduced to this country 150 years ago. This species pushes up from a large tuber a stout herbaceous stem, that reaches a height of 2 feet to 3 feet. The leaves are heart-shaped

and entirely clothe the curiously spotted stem, which is terminated by a number of mauve-tinted blossoms, about the size of those of an ordinary *Gloxinia*. *Isoloma hirsuta*, a plant which is in general appearance a good deal like a *Tydaea*, is also in bloom. It is of somewhat rambling growth, while the entire plant is covered with brownish hairs. The blossoms are tubular in shape, about 2 inches long, and of a bright vermilion colour. Many of the *Gesneras* and allied genera, such as *Eucondonias*, *Nægelias*, and *Plectopomas*, are also in bloom. One of the best is *G. cinnabarina*, whose large ovate leaves are covered with bright red-coloured hairs, thus imparting to them quite a velvety appearance. Apart from the beautiful foliage, the flowers of this are also very showy, being of a cinnabar-red marked with a paler hue. *G. exoniensis* has very handsome foliage, and to this may be added the old *G. zebrina*. These two last have bright scarlet, or orange-scarlet blossoms, and are consequently very showy both in foliage and flowers. *G. macrantha* is not yet in flower, but it is now rapidly approaching that stage. In this the leaves are rich green, and the flower-stem, which reaches a height of about a foot, is terminated by a head of tubular blossoms, each of them 2 inches or 3 inches long, and of a bright, glowing vermilion colour. The striking colour of this renders it very conspicuous during the dull days of winter. The pure white *G. longiflora*, of which a coloured plate was given in THE GARDEN, April 14, 1888, forms a pleasing contrast to the bright-coloured flowers of most of those previously mentioned, while various tints are to be found in some of them, such as *G. elliptica lutea*, bright canary-yellow, and of the hybrids we have *alba lutescens*, yellow and white; *bicolor*, yellow and red; *Reine Marie Henriette*, orange and pale yellow; *Donderstraal*, red and white; and *Nachtegaal*, white and rose. By some of the Continental nurserymen *Gesnerads* of this class are made a specialty of, but they are rarely grown in this country. One thing to be especially observed in their cultivation is that after the flowering season is over they must not be dried up directly, but water should be gradually withheld, in order to thoroughly ripen them, but at no time should they be allowed to become parched up, especially those with scaly rhizomes. H. P.

The newer Crotons.—Although during the last few years new *Crotons* have not been so plentiful as was the case some years previously, still there have been numerous varieties put into commerce during that time, among them being two or three most desirable kinds and fully worthy of extended cultivation. *Prince of Orange*, which was only put into commerce this year, is a very showy variety, the leaves being long and lanceolate, and about $1\frac{1}{2}$ inches in width. The variegation is of a rich golden yellow colour, some of the leaves being almost entirely of that hue, while others are irregularly blotched with green. It is undoubtedly one of the best among golden-leaved *Crotons*. Another very showy variety is *Memphis*, whose leaves are of much the same width as those of the preceding, but a good deal longer, and they arch over. The colouring of the leaves when young is pale green, blotched in an irregular manner with yellow. After a time the green becomes of a deep olive, the yellow changes to rich orange, marked with crimson, which colour at last suffuses the entire leaf. *C. Aigburth Gem* is very bright and effective, the leaves of this variety being about 18 inches long and three-quarters of an inch to 1 inch wide, with intense scarlet-crimson midrib and margins, which colour in some cases suffuses nearly the whole of the leaf; in others there is an irregular band of green freckled with crimson between the midrib and the edge of the leaf. It is of very

graceful habit, a singular appearance being presented by the blade of the leaf gradually diminishing about the middle, till for an inch or more there is nothing but the midrib, the upper part of the leaf being thus as it were secured to the lower by a single thread. There are several varieties in which this character is to be found. The last to mention is one I have grown for the last three or four years, but it seems to be little known. I allude to *ruberrimus*, the leaves of which are narrow and drooping, after the manner of the old *Johannis* and *angustifolius*, but the marking is quite different from that of these varieties. In *ruberrimus* the young leaves have a bright crimson midrib bordered on either side with yellow, while the margin is green. Then, as the foliage becomes mature, the greater part of the leaf changes to bright crimson, and in this stage the plant is very beautiful.—H. P.

NOTES ON CYCLAMENS.

THE first Cyclamen with pure white flowers I ever saw had narrow twisted petals. It was a poor flower, and very different from such fine varieties as *White Swan*, *Mont Blanc*, *Butterfly*, and *Charming Bride*, which in size and shape leave but little to be desired. It was a curious fact, however, and which caused many to grow these poor white forms of the Persian Cyclamen, that they were mostly deliciously fragrant, and it seemed that the poorer the bloom the richer the perfume. Some of them were so powerfully fragrant, that a plant or two filled a moderately sized house with delicate perfume, and it certainly is much to be regretted that the improvement worked in the Persian Cyclamen has had the result of almost entirely obliterating fragrance. I have bloomed some thousands of the large-flowered strains, and have never yet met with one that could be said to be sweet-scented. Fragrance was not, however, absolutely confined to pure white flowers. I have had deliciously scented plants among the bright hued ones, but these were much rarer. I do not know how it may be with others, but in my case it is a long time since I possessed a plant bearing sweet-scented blooms. It seems a pity that this very desirable property in flowers should be lost in the Cyclamen, to which it appears to be in some degree natural. I have no doubt that there are still fragrant Cyclamens in existence, and there ought to be little difficulty in raising a race of them distinguished as much by fragrance as by size of bloom. With perfume the Cyclamen would be without a rival among winter-blooming plants. Some of the pure white forms of this flower never appear to have become widely grown. *White Swan*, which, I believe, originated with Mr. Little, I never had the good fortune to grow, for I do not think seeds of it were ever distributed, this being, I believe, the case with all Mr. Little's named kinds. *Butterfly*, sent out several years ago, is a beautiful variety, the habit being neat and the flowers broad at the base and tolerably large. The gem of pure white-flowered kinds, however, is *Charming Bride*. It will be difficult to improve on this, for it possesses in a high degree all points of worth that render Cyclamens so valuable. A great deal of care, moreover, seems to have been exercised in saving the seed, for although I have obtained some from several firms, the whole of the plants have come true, which is more than can be said of named Cyclamens generally. It is, however, rather difficult to keep any particular variety quite true, and the pure white kinds so quickly show the influence of foreign pollen, that complete isolation is the only way to ensure getting good results. For market purposes *Charming Bride* is admirably fitted, as it blooms very freely. It is the custom with many Cyclamen growers to have a good lot of pure white Cyclamens in bloom at Easter, when white flowers are so much in demand. For this purpose it would be difficult to find a better variety than *Charming Bride*. The most decided contrast to this is *Brilliant*, sent out a few years ago. There is a peculiar glitter in this kind that I failed to see in any other. Its only defect is a great liability to burn, and for this reason but little

more than a gleam of sun should fall on the blooms from the beginning of April onwards. All the crimson flowers are, however, liable to injury in this way, and I have seen the blooms turn almost black after being exposed for a time to a spring sun. It is in this direction that improvement is most needed in the Cyclamen. It is difficult to see how much advance is to be made in the white, pink, and purple forms, but there is, I suppose, just the possibility of getting a scarlet-flowered Cyclamen. Seeing what a wonderful stride has been made in the way of bright colour during the last few years, we are justified in hoping that very much more will be made in this direction. At present the tendency is rather towards crimson than bright red, and even the best of the bright flowered kinds are somewhat deficient in size. *Brilliant* was a grand break in colour, and we may all at once obtain another quite as striking. Of purple-flowered kinds, that sent out some years ago under the name of *Duchess of Edinburgh* is very good. The flowers are large, though rather deficient in form, and the footstalks are rather too long. All who aim at perfection in the Cyclamen should bear in mind that a long footstalk is a serious defect. So long as the blooms rise well above the foliage that is enough. A very large flower-stalk necessitates support, and this is a drawback to the market grower, involving loss of time. To me it seems quite as unnatural to tie up a Cyclamen as a *Primrose*, and when growers give themselves the trouble, as is frequently done, of tying each bloom to a piece of wire, I cannot help wishing that they may be so busy in other ways as to prevent their doing so. The great charm of the Cyclamen is its free, graceful growth, and this, I hold, in a great measure is destroyed when the blooms are tied out at equal distances. A bold, effective variety that all should grow is *Rose Queen*, and other very striking kinds are *Phoenix* and *Reading Beauty*. I suppose, however, that the generality of Cyclamen growers are content to cultivate a good strain without troubling about named kinds, but it is just as easy to grow really good varieties as inferior ones, and, as I know from experience, it is sometimes difficult to get all the colours in their highest degree of perfection from seed obtained in the ordinary way. It is with Cyclamens as with other things, the finest kinds are the most shy in giving seeds, so that from mixed packets one must always reckon upon a proportion of inferior flowers. For this reason I should counsel, whenever practicable, the purchase of plants in bloom. There is nothing like making a good start, and where profit is the object it is of the highest importance to have large flowers and good, decided colours. It would pay anyone going in for Cyclamen culture for market to give 5s. per plant to begin with. Nothing can be more vexatious than to find as a reward for a season's labour that the majority of the plants have inferior flowers that are passed by in the market when others are being sold off briskly. Some years ago I grew Cyclamens rather largely for Covent Garden, and I made a point of going wherever there was a chance of picking up anything good. I have willingly given 10s. for a small plant that was a good advance on what I had. In this way I succeeded in working up a fine strain, and this is what one of the largest Cyclamen growers for market did. I have known him make a long journey on the chance of finding something extra good, and his pains were so well rewarded, that in the course of half a decade his strain became the finest in the London markets. Once one has a good strain it is a comparatively easy matter to keep it. It is only necessary to isolate a plant or two of the various colours and carefully fertilise the blooms. It is well to do this in March or early in April, before the work of the bees has to be reckoned with. The two hours that precede noon are the best time to do this. At this time there is a natural discharge of pollen, and by grasping the flower with two fingers, holding the thumb under it and then tapping it, the pollen falls on the thumb nail and can then be used with ease. A large market grower proceeds in rather a peculiar way. As is well known, the flowers of a Cyclamen do not come up all at once. The great display is pre-

ceded by the production of a few blooms at intervals on each plant. These are cut and sold in bunches, but as they are taken off the pollen is made to fall in a shallow receptacle. When there is enough it is taken out with an egg spoon, and in this way the pistil of each bloom can be well and rapidly smothered with pollen. Where it is a question of fertilising some thousands of blooms, a simple plan like this is needful to economise labour and time. I have found that by fertilising at the early period mentioned and by going over the blooms two or three times, quite seventy per cent. of the young plants will come true.

J. C. B.

ÆSCHYNANTHUSES.

HAVING had a truss of bloom to name from a reader in Scotland, it has occurred to me that a long time has elapsed since I saw these plants doing well; they are all natives of the mainland of India and the Indian Islands, and by banishing them from our stoves we have discarded a most beautiful genus of plants, and have brought in nothing to take their place. Æschynanthuses are magnificent basket plants, and form a beautiful addition to an Orchid house, supplying that greenery which is often wanting in these houses, besides producing showy flowers. These plants grow naturally on the branches of trees, and under cultivation require to be grown in baskets and hung up near the roof glass, where if subjected to strong heat and an abundance of moisture, they rapidly increase in size and bloom profusely. They succeed either in an ordinary stove or in the East India Orchid house; the baskets should be well drained, the whole inner side being thickly lined with Sphagnum Moss in order to prevent the soil from being washed away when the plants are dipped, which must be done every day in summer. If the plants are to succeed in a proper manner, the soil should be good fibrous peat, a little light turfy loam, and some chopped Sphagnum Moss, to which may be added a little sand, a few nodules of charcoal, and, what is too often forgotten by gardeners for basket plants, a little manure, the best being that from sheep or pigeons. I used to keep pigeons, and saved the manure for choice plants such as these. It requires to be used very carefully on account of its strength, but it is excellent; the plants should be made solid and firm in the baskets; too often they are to be found in quite the opposite condition, and then they do not grow well, but if planted properly they will soon fill the baskets and hang thickly all round for several feet in length and be a blaze of flower. The following are the best known kinds. They are mostly summer blooming plants, continuing to give flowers for two or three months:—

Æ. CORDIFOLIUS.—Flowers tubular, produced in clusters from the axils of the leaves; they are red, broadly striped with black, the inside of the spreading tube orange.

Æ. FULGENS has very long flowers, crimson, the under side of the tube orange-yellow, and the lips streaked with purplish black.

Æ. GRANDIFOLIUS is a plant which I frequently see treated as a pot plant; it, however, thrives best in a basket; flowers large, crimson and deep orange-yellow.

Æ. JAVANICUS has brilliant red flowers, which are deep yellow inside.

Æ. MINIATUS.—Flowers of a very deep crimson.

Æ. TRICOLOR.—Flowers very deep red, throat orange, the spreading lobes of the tube lined with black.

Other handsome kinds are longiflorus, Lobbianus, pulcher, speciosus, and splendidus.

W. H. G.

The Manettias.—The Manettias are a very pretty free-flowering genus of plants nearly related to the Bouvardias, and if in an intermediate house they will flower nearly throughout the year, but the greatest profusion of bloom is borne during the autumn and winter months. They are all slender-growing climbers, with small tubular-shaped blossoms of various shades of scarlet and orange, although among the species not yet introduced white and blue flowers are both represented. The Manet-

tias are very easily struck from cuttings, and grow away freely if potted in good open soil, kept in a light position, and liberally syringed. This last is very necessary, as the foliage is somewhat liable to be attacked by red spider, which soon inflicts considerable damage. A good way to grow them is to allow the shoots to ramble at will over a few twigs, which should be stuck in the soil of the pot in which the plants are growing, for when covered with their neat foliage and profusion of bright coloured blossoms, they present a very attractive feature. They also form a pretty screen at the end of the house in which they are growing if a few strings are run up for their support, as the thin flexible shoots will mount up quickly, and make their way from one to the other, so that in time the plants will present an almost unbroken surface of leaves and flowers. The most commonly known of the Manettias is *M. bicolor*, with bright green lanceolate leaves and small tubular flowers, a good deal like those of a *Cuphea*, their colour being bright scarlet, tipped with yellow. *M. cordifolia* is a more vigorous grower than the last, with heart-shaped leaves and flowers of a uniform bright red colour. The blooms of this are larger than those of *M. bicolor*. A third species is *M. micans*, introduced into this country in 1865, the two preceding having been in cultivation before this. *M. micans* is a very slender growing plant, whose flowers are of a rich orange colour, with yellowish lobes. In the United States, where the summers are hotter than ours, *M. bicolor* will grow and flower freely for months together if fair-sized plants are put out in the spring, or at least early summer. Of course, the plants are killed during the winter, but it is very easy to strike a few cuttings and keep them under glass for planting out the following season.—T.

WORK IN PLANT HOUSES.

TUBEROSES.—The treatment this sweet-scented favourite requires is better understood now than formerly. Where white flowers are much in demand for bouquets, sprays, or button-holes, Tuberoses play an important part. Some bulbs should now be potted. They may be put two or three together in pots no larger than will fairly hold them. It is better to thus restrict them, for their roots are impatient of moisture, especially when they first begin to move, and on this account they are more likely to suffer if more soil is used than necessary to carry them through the period of blooming. Fresh loam that contains a fair amount of vegetable matter, with a little leaf-mould and some sand, will answer in every way. Drain the pots well and press the soil moderately firm. Leave the crowns of the bulbs visible above the soil in potting. It is necessary to use the soil in right condition for moisture, neither too wet nor too dry; if too wet the bulbs would be likely to suffer, and if too dry it would be necessary to give water sooner after potting than is desirable. If possible, no water should be given until after young roots are formed. The best way to avoid this is to stand the pots on a moist bottom, such as the earthen floor of a house or pit. As soon as a fair amount of fibres have come, the plants may be put in a temperature of about 70°. If a gentle bottom-heat can be given it will encourage the production of both roots and leaves. After the latter have begun to move give some water, increasing the quantity as the growth proceeds. When the tops have made some progress the plants should be stood where they will be near the glass. This will, to some extent, correct the naturally tall straggling habit which is more or less common to the several varieties.

AZALEAS.—The quantity of white or light coloured flowers which are used at the present day in floral decorations of all kinds is greatly in excess of those which were required when red in its different shades entered so largely into combinations of most cut flowers. To a like extent, stiff, formal double flowers, such as Camellias, find much less favour than they used to. To meet this change of fashion, gardeners have to direct their course accordingly. Amongst the plants that provide a con-

stant succession of bloom of the most suitable character during the greater portion of the year are Azaleas. With a sufficient number of plants they can easily be had in flower from the beginning of November until the end of spring. Fielder's white and the old white have still no equals in the numbers of varieties that were intended to supersede them. Of this no further proof is needed than the preference which the growers for Covent Garden Market give to the old varieties named, and which they now manage to have in bloom through the autumn and winter. The less formal shape of the flowers and the purity of their colour are not the least of the merits of the two sorts in question. Another advantage possessed by them is that when properly treated the plants make shoots long enough to admit of the flowers being cut with double the length of wood attached to them that the less free-growing race of newer varieties is capable of giving. Plants that after blooming last winter were pushed on in a little heat and allowed to remain under such conditions until they had set their flowers and the buds were large and prominent, will bloom without much forcing. They should now be put in a gentle heat of from 55° to 60° in the night. Stand them close to the glass and sprinkle them overhead once a day.

AZALEAS—GENERAL COLLECTION.—Azaleas do not suffer from a low temperature to the extent that most greenhouse plants do provided they are not absolutely frozen; consequently where a succession of flowers that will last until late on in the spring is required, it is better to keep enough of the stock to suffice for the purpose as cool as possible. It is scarcely necessary to say that now when there is no growth going on, the plants require much less water than was needful in the summer. Yet the roots must never be allowed to get so dry as those of some things would bear. When the buds go blind in the way that not unusually takes place, it is through the soil getting too dry during the winter, or for want of their being sufficiently developed at the end of the season. The latter condition is most frequently attributable to the plants having been turned out of doors before the buds were properly formed. To this mischievous proceeding where practised with plants that have bloomed late may be traced most of the failures that occur in the flowering of Azaleas.

SALVIAS, AUTUMN-FLOWERING.—The autumn-blooming sorts of Salvia will now soon beat their best. Whilst the flowers are opening and when fully expanded, avoid keeping the plants in houses where the atmosphere is too cold and damp, or where there is more warmth than necessary to keep up a circulation of the air and dry up damp, as either of these extremes will shorten the duration of the bloom. The later flowering sorts that come in towards spring should be kept in a house or pit where they will not be in danger of getting frozen, but with no more heat than will prevent this, for it is not desirable that they should make any appreciable amount of growth. These plants are mostly strong, vigorous growers; the late flowerers, such as *S. gesneriflora*, are especially so, filling their pots with roots to such an extent as to completely exhaust the soil, however rich it may have been. To make up for this it will now be necessary to frequently give them manure-water; in the absence of support of this kind the lower leaves will decay and leave the plants in an unsatisfactory state. Allow enough room between the plants for the light to reach them on all sides.

PLUMBAGO ROSEA.—Where the advice given for the treatment of this Plumbago has been followed, the stock should now be vigorous and capable of yielding quantities of brilliant-coloured bloom. The flowers are somewhat thin in texture, and are sometimes liable to flag when cut if means are not taken to counteract this tendency. To impart the necessary strength and substance, no more heat should be used from the time the panicles of bloom appear than is requisite for the free development of the flowers. In addition to this the tops of the plants ought to be as near the roof as they can be got without their touching the glass. Where there happens to be a shelf on which the pots can be

stood so as to admit of the heads being spread out thinly under the glass, the flowers come much more vivid in colour, and have more endurance either when cut or allowed to remain on the plants.

SERICOGRAPHIS GHIESBREGHTII.—The advantage of growing a sufficient stock of this bright-flowered Acanthad, as well as the rose-coloured Plumbago and the Salvias above named, is that, independent of the attractive appearance of their flowers on the plants, their loose feathery sprays come in so well for arranging when cut with Chrysanthemums, which, when used alone have a stiff, formal appearance. Forethought in providing flowers that are sufficiently diverse in character, and that come in together at the different seasons, needs to be exercised by those who aim to make a display out of the ordinary run. A sufficiency of flowers of the various colours, without regard to their suitability for arranging together, is not all that is required at the present day. Form is quite as much a necessary consideration as colour and shade, for though a deal may be done to lighten up any arrangement by the use of Ferns, Asparagus plumosus, and the numerous other kinds of foliage that is suitable, still any combination of the sort in question is always wanting when there is too much sameness in the shape of the flowers.

POINSETTIAS.—Medium-sized heads of the flaming bracts which these favourite winter-blooming plants produce are to some extent the most useful. These can be had from examples that are comparatively dwarf, such as result from striking the tops. Where dwarf stock is wanted, the tops should at once be prepared for striking by ringing the bark round with a knife, so as to leave the top that has to be struck from 12 inches to 18 inches long. If this is done ten days before the tops are severed, the bark will within the time callus so that the production of roots will be effected in much less time, and there will be correspondingly less danger of any of the leaves going off. As soon as the callus is effected in the way described, sever the tops and put them singly in 5-inch or 6-inch pots, drained and half-filled with good rich soil. In the holes made to take the tops put a little sand, and fill up with soil to which a liberal amount of sand has been added. Confine in a cutting frame where, if possible, there is a brisk bottom-heat; if the frame contains so much moisture as to endanger the destruction of the leaves give a chink of air. Immediately roots are formed, give air gradually until the plants will bear full exposure to the house.

T. B.

SHORT NOTES.—STOVE AND GREENHOUSE.

Ixora macrothyrsa (Duffi).—This species is far superior to all the other varieties in colour, size of truss, and in duration of bloom. I have a plant here which has produced five monstrous trusses, one on each growth the plant has made. Four of the trusses each measured 16 inches across, and lasted fresh and bright for nine weeks. It has been said that it is a shy bloomer, but I have not found it so.—N. BLANDFORD, *Moor Hill, Southampton.*

Seedling Tree Carnations.—Although it may be difficult to obtain any great improvement on existing varieties as far as quality and colour of flowers are concerned, yet there is a great advantage in growing seedlings, for the reason that there will be much more vigour in plants propagated from one-year-old seedlings than in those propagated from older varieties. We now have a batch of plants flowering which were propagated from selected seedlings of last year. As compared with the named sorts they are remarkably vigorous, whilst the flowers almost equal those of the named varieties of similar colours. Some of the old sorts of Tree Carnations maintain their good qualities, and do not deteriorate much in vigour, but others, after a few years, become almost valueless. By sowing seed early in January, strong plants, the forwardest of which will begin to bloom about September, may be obtained the same season. If seed is obtained from a reliable source, the greater portion of

the plants will produce fairly good blooms, and many will equal those of the named varieties.—F. H.

HORTICULTURE AT THE FRENCH EXHIBITION.

ONE hardly recognises the old-fashioned tall Michaelmas Daisy in the compact dwarf strains seen in so many parts of Paris, and notably in one superb mixed bed near the fountains in front of the Palace of the Trocadero, in which these Daisies form the strongest feature. The plants are little more than a foot high, and the flowers double the size and of darker hue than those of most of the older types. The habit is more dense and branching, and the plants form dense heads of bloom, more like Cinerarias of a somewhat ragged form than the usual strains of Michaelmas Daisy. The mass of colour formed by the Daisies was so novel and unique in character and form as to constitute the eye or centre of perhaps the finest bed in the exhibition. The Daisies were flanked profusely with crimson and orange-feathered Cockscombs, dwarf Marigolds, Indian Pinks, white Ageratums, with lighter dashes of blue and white Brachycome hybrida, Acroclinium roseum and album, the seldom seen dwarf yellow Linaria, and dwarf white Alyssum about 3 inches high, with a few sprays of yellow Nasturtium relieving the centre of the bluish purple Daisies. The corresponding bed on the other side had absurdly dwarf Sunflowers, the whole being only about a foot high for a centre, with masses of Petunias, Indian Pinks, dwarf French Asters, Zinnias, Marigolds, Ageratums, feathered Cockscombs. The chief features of these twin beds were their fulness, dwarfness, and their rich and satisfying diversity, and yet, whether by accident or design, pleasing blending of colour.

The Begonia groups, especially of the bulbous varieties, about here and also in other portions of the grounds are also very dwarf, as are the feathered and common Cockscombs, brilliant and effective, the first as used here really furnishing some of the most telling masses of colour in the landscape. Our own nurserymen are getting the tuberosus Begonias nearer to the ground, if not by leaps and bounds, at least pretty steadily, but Mons. Vallerand's exhibit in the tent on the left going up to the palace makes most of our dwarfs tall in comparison. This magnificent group has a rich spread of leaves, with forests of flower-stems starting from the ground, surmounted with flowers of great size, substance, and brilliancy. Bold groups of his purest-coloured strains were shown in quantities.

But outside in the grounds as well as in this tent one of the richest treats was in reserve for visitors. This was found in enormous masses of Carnations, dense, dwarf, and covered with bloom and buds in the first week in October. These were mostly dense bushes rather than plants full of vigour and of crops of bloom and buds in succession, promising a good supply up to Christmas. Quantity of flower, dwarfness of habit, vigour of growth, and continuity of blossoming were their chief characteristics rather than any great merit of individual bloom. Obviously they were either seedlings or cuttings from the perpetual flowering varieties. Either way, it is hoped that some of our French friends will favour us with some special notes as to the time of sowing, rooting, and the style of selection or culture adopted, so as to obtain and perpetuate this dwarf habit. That the latter is not the result of climate nor of culture only was clearly shown in these grounds, as side by side with a group of Carnations in the sere and yellow leaf, and with flowers such as may be found in most gardens at home, were many of these dwarf plants, full of buds and richly furnished with bloom, apparently indifferent to the cold buffetings of the east wind and the chilling embraces of the white frosts, which are just as chilling as at home. The splendid groups in the flower show were mostly in 8-inch and 10-inch pots, while those outside seemed planted out. All the plants had evidently been grown in the open air until quite recently, and possibly by their appearance planted out.

As to climate, there seems a difference in favour of France in the spring, but at this season I must say I have failed to see or to feel it. Limes are more defoliated in East Anglia than in Paris. Horse Chestnuts have it in some parts of Paris. In the Avenue du Trocadero, for example, some of the trees are almost leafless, and most of them are showing a few second flowers fully expanded. But trees to the right and the left of them are still clothed with foliage in abundance, and show no sign of second blossoming. Planes are about abreast in Paris, London, and East Anglia.

Then, judged by the practices of horticulturists, the climates do not greatly vary. *Salvia splendens* makes a splendid mass in the open in Paris, but it does likewise in East Anglia, and for that matter also in Argyleshire. Then the Parisians do but little in sub-tropical gardening in the garden of the Exhibition, and make few or no essays in carpet bedding. In the more sheltered Parc Monceau and other parts they do more in tender plants. The common and hardy mixtures that abound, and are on the whole so effective, are finger-posts to climate as well as to taste. The scarcity or entire absence of *Coleuses*, *Alternantheras*, &c., in the grounds of the Exhibition reveal severities of climate as much or more than mere caprices of fashion. I did not note any *Alternantheras* in the grounds, and what was far more marvellous, any or many *Fuchsias*, and certainly none of the striking stature and telling types of those used to such good purposes in Hyde, Regent's, and other parks this season, though the grounds of the Exhibition furnishing many charming sites for *Fuchsias*, singly or in masses, of imposing stature and dignified or graceful forms.

D. T. F.

ORANGE CULTIVATION IN SICILY.

THE United States Consul at Messina, in a recent report, states that the province of Palermo is the great Orange district of Sicily. Throughout the province of Messina the Orange was exterminated in 1865-70 by the "gum," and the Lemon budded on the wild Orange has taken its place. The bulk of Oranges shipped from Messina comes from the province of Reggio on the mainland. In Calabria they begin gathering the Orange in October; the fruit is hard, sour, and of a whitish appearance, and is shipped to England. In Sicily the Oranges are gathered in November, except small shipments to London of unripe and undersized Oranges from Milasso, thirty miles to the north-west of Messina. This poor fruit is quoted at about 3s. a box in October, and is bought by confectioners. The climate of Southern Italy being warmer in summer than that of Sicily, and the Oranges being grown on a light, sandy soil, account for their maturing earlier in Calabria. Most of the Oranges, however, are gathered in December and January. The Sicilian grower prefers running the risk of damage by frost, which, however, is small, to gathering his Oranges when they are still immature. Sicily Oranges, which are, of course, not fully ripe when gathered, keep well for forty days. Frequently the fruit when gathered is allowed to sweat in the groves from two to three days, piled on the ground and covered over with tarpaulins; it is then wrapped in tissue paper, put in boxes, and sent to Messina. Fruit is also sent directly from the groves. All fruit upon reaching the exporters' warehouses is carefully inspected and selected, wrapped in fresh tissue paper, and re-packed. Exporters ship their Oranges as soon as packed. During the shipping season large firms in Messina employ as many as 300 women and girls, paying them 10d. to 1s. a day of nine hours' work. The women select and wrap up the fruit. Men are employed to pack the fruit and handle the boxes. The stevedores handle the boxes with great care, and the steamers give all possible ventilation to the fruit during the voyage. Fruit possessing the greatest keeping qualities is sent in sailing vessels to the United States. Exporters frequently buy the fruit on the trees. The cost of preparing and shipping a box of Oranges or Lemons to New York is about 4s. 6d. Years ago Oranges were preserved in sand for from four to five months for family use.

This practice no longer prevails, as it would not pay on a large scale; such enormous warehouses would be required and so great would be the expense of handling the fruit. Preserving Oranges in bran has been tried, but it proved too heating. The soil has great influence upon the maturing and keeping qualities of Oranges. The fruit ripens earlier on light sandy soil than on clay soil. Fruit grown on the former cannot be left long on the trees without deteriorating in quality, whereas on stiff clay it can remain with impunity until the end of April. The former kind is small and of a pale yellow, and keeps only for a short time, while that grown on a clay soil is large, keeps well, and is of a reddish colour. The fine large Oranges that bring a high price in Palermo in summer are allowed to remain on the trees until the end of May, when they are stored in subterranean grottoes. They are produced on clay soil abounding in alkalis and well-decomposed organic matter. In the sides of the mountains near Palermo are many grottoes that are cool and well ventilated, in which Oranges keep well during the summer; they are spread two layers deep upon large mats placed at convenient distances one above the other. Every day or two the fruit is turned over and all the defective Oranges are removed. This fruit finds a home market.

DAMP.

THE October mornings have become dark and misty, the days are wet, the ground is saturated with moisture, and there is little of sunshine and drying influences to dry soil and leaf. Damp is sometimes a most destructive agent, and the gardener needs to be on the alert to stay its ravages when it shows signs of spreading among his plants. The natural decay of leaf and stalk on plants is simply a law of their being, and the gardener wisely removes these as they fall away. Decaying leaves left on plants harbour damp, and are sometimes the means of spreading it to choice subjects the gardener is loth to lose. In the greenhouse, where fire-heat is applied, the gardener has the means at his command to lessen the effects of damp by applying a little fire-heat on cold, dull, misty, or wet days, and giving some air at the same time. The shelves on which the plants stand should be kept as clean as possible, and it is well to cause as little drip as possible upon the floor of the house, unless the plants are of a character that will take no harm from the presence of moisture on the floor. It is in the cold house—a house unassisted by any fire-heat—that the trouble from damp is most severely felt, and the same applies to a cold frame. The difficulty experienced in bringing plants successfully through the winter in unheated structures is greatly increased in cases where the house or frame is within the range of London fogs. This is a difficulty I, in common with others, have to contend with. It is not merely fog, it is what the fog brings with it that one dreads. It appears, at certain times of the year, to roll across to the west from London, bringing with it atmospheric impurities and laden with conditions that are decidedly injurious to vegetation. Then when such fogs prevail one has to close the house, stopping up every crevice, if that were possible, if by so doing the enemy can be kept at bay. Mr. Roberts, late of Gunnersbury Gardens, informed me not long since that he found it more and more difficult each succeeding year to bloom *Bouvardias*, *Tree Carnations*, and other things during the winter owing to the injurious effects of the London fogs. However closely he might shut up his houses, the fogs found their way through the crevices, and damp and decay followed as surely as night follows day. More than that; these fogs leave a sooty deposit on glass, leaf, and branch, which requires a hard driving rain to clear away.

Many amateurs about London put up a plant house in the rear of their dwellings, and they can prevent harm from frost by using an ordinary spirit lamp, but it is during mild misty weather—such weather as we experience in November and December and also in February—that so many plants fail from a damp, cold atmosphere. I have made many attempts to keep tender plants, such as *Fuchsias*, *Pelargoniums*, *Begonias*, &c., through the winter in

a cold house, and could succeed in doing so were it not that they are frequently killed by frost at the roots at a time when it is unusually severe. All that one can do is to keep the house as dry as possible; to keep all decaying foliage gathered from the plants; to stir the surface soil so that damp cannot gather there, and to give air on all favourable occasions. The soil about the roots must be kept dry. It is surprising how long plants will endure in a dry state during the dull winter months; they are then best able to resist frost. All the tenderest plants should be placed in the warmest and sunniest part of the house. R. D.

SOCIETIES AND EXHIBITIONS.

NATIONAL AURICULA AND CARNATION AND PICOTEE SOCIETIES.

(SOUTHERN SECTION.)

By favour of the Horticultural Club the annual general meeting of the members of these societies took place at the Hotel Windsor on the 22nd ult. After disposing of some preliminary business, the place of holding the exhibition in 1890 was considered. The secretary, Mr. J. Douglas, reported that the council of the Royal Horticultural Society were prepared to make the same grants to the funds of the two societies, and give them the same accommodation as last year, and it was agreed that, subject to the arrangements of the council, the Auricula show should take place at the Drill Hall, Westminster, in connection with the society's meeting on April 22, and the Carnation show at Chiswick in connection with an exhibition of Ferns and Carnations on July 22 and 23, when it was proposed to hold a Carnation conference on one of the days, and a Fern conference on the other. Additional interest will be imparted to the Chiswick meeting from the fact that it was intended to hold at Chiswick during the coming summer a trial of border Carnations. A letter was read from Mr. William Holmes, acting on behalf of the Royal Aquarium Company, offering to afford accommodation to the two societies at the Royal Aquarium, and promising liberal contributions to their funds. A letter was ordered to be sent to Mr. Holmes, thanking him for his offer, which the meeting felt it expedient to decline. The offer of the Royal Horticultural Society was therefore accepted, with the proviso that the society should arrange for the Carnation conference to take place on July 22, and Mr. Martin Rowan was requested to read a paper on the culture of the Carnation in towns, and Mr. Richard Dean one on border Carnations.

Mr. T. E. Henwood, the hon. treasurer, then submitted his financial statement, showing a balance in hand in the accounts of the Auricula Society of £7 18s. 9d., and in those of the Carnation Society of £4 17s. 11d. Mr. J. Douglas, the hon. secretary, also read a report bearing upon the exhibitions held during the past year and the prosperous condition of the societies. The officers and committees of the societies were then elected, and Baron Schröder, Lady Wolferton, Lady West, and Miss Tufnell were added to the patrons of the Carnation Society. It was resolved that the judges for the shows should be appointed at a meeting of the committee to be held on March 11. All the rules were carefully revised and brought more into harmony with the procedure of the societies. The schedules of prizes of last year were accepted as those for the show of 1890. Votes of thanks were passed to the treasurer, secretary, and chairman, and to the Horticultural Club for the use of the room.

The Gardeners' Orphan Fund.—A meeting of the committee took place at the Caledonian Hotel on the 25th ult., Mr. George Deal presiding. The balance at the bank was announced to be £424 17s. 10d., and it was resolved that the sum of £61 15s., the quarter's allowance to the children on the fund, be paid, and £300 be placed on deposit at the bank. Some special receipts were announced, including £6 10s. obtained by opening the gardens at Heckfield, per Mr. Wildsmith, and £2 12s. from Ketton Hall Gardens, per Mr. W. Divers. The day

on which Ketton Hall Gardens were thrown open was unfortunately wet, otherwise the receipts no doubt would have been larger. Mr. C. W. Allen sent £4, the proceeds of a concert at Swallowfield, and Mr. J. Wallis sent from Keele Hall the sum of £1, a portion of the offertory at the Church Harvest Festival. Donations amounted to £8 2s., including £5 from Mr. Joseph Broome, Didsbury, and money boxes from various persons amounted to £9 13s. 1d. The proceedings closed with a hearty vote of thanks to the chairman.

LAW.

Claim for prize money.—On Friday, October 18, Mr. Alfred Winfield, of Hounslow, sued Mr. Alex. Dean, of Bedford, at the Brentford County Court, for the sum of fifteen shillings, the balance of the value between the 1st and 3rd prizes, for an exhibit displayed by the former at a recent flower show held at Hounslow. Mr. Charles Robinson appeared to defend the Horticultural Society. At the outset of the proceedings, the plaintiff asked how many witnesses the solicitor for the defence proposed to call, as he should wish the Court to be cleared of them, but Mr. Robinson replied that he had none. Mr. Winfield, who appeared with a number of papers in his hand, then commenced to address the Court, but was immediately stopped by his Honour, who said he merely wanted the facts of the case. Plaintiff said that at the last exhibition held by the Hounslow Horticultural Society, he exhibited a model garden, which he contended was the only one shown. (At this point Mr. Robinson got up and stated that there were several exhibited, two others being placed by the defendant and fellow judges 1st and 2nd, and the defendant's garden was 3rd.) The plaintiff, however, still stated that his was the "only model garden," and for which he was awarded 3rd prize, and he thought he should have had the 1st. At the close of the show he saw the secretary about the circumstances, who told him to write to him, which he did, but he had received no reply. He (Mr. Winfield) was of opinion that defendant was the instigator of his not receiving the 1st prize. The case was here stopped by his Honour as a non suit. Mr. Robinson applied for costs for his client, and 5s. was allowed. At the close of the Court, Mr. Winfield paraded the streets of Brentford with his "model."—*Middlesex Chronicle*.

Gooseberry Roseberry.—Can anyone tell me where this Gooseberry may be had?—W. R.

Preserving Pampas Grass.—Can any of your readers inform me how Pampas Grass can be prepared as you buy it in shops, so as to look fluffy and white and not to drop off?—WINTON.

Cattleya aurea.—Will you kindly inform me if you consider the enclosed a good variety of *Cattleya aurea*; the veining on the lip was much darker, but it has gone off a little? I have larger flowers on the same plant, but they have gone off still more.—H. KRUSE, *Dean Farm, East Farleigh, Kent*.

*A very good form, we should think, but the flower was much faded.—ED.

Bamboos out-of-doors.—This spring I planted out in a sheltered border the following: *Bambusa Fortunei*, *mitis*, and *Simoni*. Will they stand the winter protected by a little Cocoa fibre? *B. Metake* has been out (in same border) for several years and has done well. Two of the three above named have made vigorous shoots. Under glass in a cool house I have *B. Mazelli*, *aurea*, *nigra*, *violascens*, and *Arundinaria falcata*. Would these stand the winter if planted out in the spring?—F. COWSLADE, *Erleigh, Reading*.

Names of plants.—*Horti*.—1, *Crataegus Pyracantha*; 2, *Elæagnus* sp.; 3, *Escallonia macrantha*; 4, *Ceanothus* var.; 5, *Piptanthus nepalensis*; 6, *Olearia Haasti*.—*J. D.*—1, cannot name *Crotons* from a bit of leaf; 2, *Pellionia Davourea*; 3, send better specimen.

Names of fruits.—*D. H.*—1, *Flanders Pippin*; 2, *Damus de Septembre*; 3, *Fondante d'Automne*; 4, send better specimen.—*Veritas*.—1, *Emperor Alexander*; 2, *Beauty of Kent*.—*Fury*.—1, *Apple, Yorkshire Beauty*; 2, send better specimen.—*John Morris*.—1, *Norfolk Beaufin*; 2, *Mabbot's Pearmain*.—*W. R. S.*—1, *Black Pear of Worcester*; 2, *Duchesse d'Angoulême*; 4, *Beurré Diel*; 6, *Alexandre Lambert*; 7, *Knight's Monarch*; 8 and 11, *Winter Nellis*; 10, *Easter Beurré*; 12, *Glou Morceau*; 13, *Gansel's Bergamot*.

WOODS & FORESTS.

THE SCARLET OAK.

(*QUERCUS COCCINEA*.)

THE brilliant autumnal colour assumed by the large leaves of this handsome American Oak renders it a tree of particular value for ornamental planting, and a general favourite with cultivators of hardy trees and shrubs. Planted here and there amongst Birches, Horse Chestnuts, and Aspens, whose foliage usually dies off of a deep golden hue, the Scarlet Oak has a most distinct appearance, the large regularly lobed leaves, which remind one much of those of some of the rarer Maples, dyed in crimson, being so distinct from everything else around.

For planting here and there around the margins of hardwood plantations, particularly such as skirt roads and drives, and from which it may be seen, few trees, in my opinion, equal the Scarlet Oak, for whether during spring or autumn it is at all times beautiful, the bronzy-red of the young shoots and deep scarlet of the fading leaves being very conspicuous. Just now in many of the woods at Holwood, the Scarlet Oak looks beautiful almost beyond description, for the fully developed leaves are, both in shape and tint, larger and brighter than I can remember to have seen them either in Scotland or Wales.

Few persons are aware, or have noted how beautiful are the young shoots of the Scarlet Oak; indeed, at that period of growth, when they assume a peculiar bronzy-red, they are quite as worthy of praise and notice as when steeped in their autumn hues. Second growths of this Oak are also rendered very conspicuous by the rich deep shades of red and bronze for which they are so remarkable. But not only for the richness of its foliage is the Scarlet Oak of value to us, for the whole contour of the tree is pleasing in the extreme, it being neat yet destitute of stiffness or formality, and therefore of especial use in ornamental planting.

A well-grown and well-placed specimen of this Oak is, indeed, a desirable object at any time, and to be seen to advantage it should be planted clear of other trees, and all the better if backed up by a Pine wood or clumps of Yew and Holly. The contrast afforded either in spring or autumn by the scarlet of this Oak and blue and green of the Firs or Holly is peculiarly pleasing and far from common in our woods and grounds.

Some of the largest Scarlet Oaks I have seen are growing in gravelly loam and in almost pure gravel, and from my own observations of a number of trees, I think that this is the soil best suited for their perfect growth and development. A few days ago I was shown several young trees of the Scarlet Oak that some five or six years since were planted for purely ornamental purposes in a low-lying and damp meadow, but the experiment has turned out far from successful, the majority of the trees looking anything but healthy. Fine, strong, and well-grown plants they were when planted, but gradually a change has come about, and these promising trees are now but lank poles with only a few branches, and tufts of foliage atop.

It is rather unfortunate that, as in the case of the Purple-leaved Beech, there are several forms of the Scarlet Oak in cultivation, these differing greatly in the intensity of autumn leaf-colouring. Some of these that I have seen turn of a reddish brown before falling off, and at no time exhibit that wealth of scarlet for which the typical tree is so remarkable, and for which it is solely cultivated in this country.

Generally speaking, the Scarlet Oak requires but little attention in the way of pruning, for it is of gainly shape with a conical head of twiggy branches, and not at all inclined to ramify or expend its strength in the formation of clumsy side branches.

There is a remarkable variety of the Scarlet Oak under the name of *Q. coccinea major nova*, and which, I believe, was a chance seedling raised in Lee's nursery at Isleworth. It is undoubtedly, in a young state at least, far superior to the typical

plant in leaf-colouring, it being of almost a vivid scarlet all over the leaf, not, as we sometimes see in the parent, patched or mottled. The leaves, too, are larger than in the parent plant and more regularly and deeply divided. Should these peculiarities remain constant in all the offspring, we will certainly be in possession of a variety which for richness of leaf-colouring cannot be surpassed.

There can be little doubt about the value of some of the American Oaks for their depth of autumn leaf tints, and whether they may ever turn out commercially valuable does not much matter, the ornamental side of the question sufficing for us at present.

In Ireland there are several large trees of the Scarlet Oak, some of the finest I have seen being near the shores of Lough Neagh, and onwards to the English Channel.

At Hafodunos, in North Wales, in a beautifully wooded glen that runs through part of the estate, are several tall and well-grown specimens of this Oak, which in autumn afford a rich contrast to the general tone of the native dying off foliage. The Scarlet Oak is quite hardy in this country.

A. D. WEBSTER.

SERVIAN FORESTS.

ONE of the effects of Servian independence appears to be an almost total disafforestation of the country. The Vice-Consul at Nisch says that during the Turkish occupation Servia was covered with magnificent forests of Oak, Beech, Chestnut, and Walnut trees, by means of which the country was assured of a regular and plentiful supply of water, and in the recesses of which the natives found shelter and refuge from their foreign conquerors. From the date of her independence, a destruction of these invaluable treasures commenced, and has been carried on with remorseless and unreflecting perseverance, and it appears as though there was, at the present day, a race against time to complete the havoc. From time to time the consciences of Ministers and Governments have been roused to interfere, but beyond the passing of laws, which remain a dead letter, hardly anything has been done to arrest the evil. The authorities to whom the work of supervision has been confided do not appear to have attained to a proper apprehension of the importance of the duties devolving upon them; it has even been remarked that such action as the highest authorities have taken has been rather prompted by considerations relative to the supply of Acorns and Beech Nuts for feeding swine than by a proper regard to the preservation and planting of timber as a national need. Floods in winter and drought in summer were declared by Mr. Borchgrave in 1883 to have already begun to exact the penalty which carelessness or want of forethought must be called upon to pay; but the peasant and his goats continue their work of destruction, whilst the authorities are apparently more solicitous of avoiding occasions of discontent which restrictive measures would create than of applying such remedies as legislation has placed in their hands. Whole mountains may be seen completely denuded of timber, with the exception of a low worthless scrub, which were a few years ago covered with woods, but which have lately fallen victims to the innumerable herds of goats which are allowed to browse at will. The peasants, amongst whom the land was divided at the time of the Servian independence, have cleared vast tracts for the purposes of agriculture, and possess the right of cutting timber for firewood in those forests which are under the management of the different communes. Very little coal is used for household purposes, and the amount of wood required for daily consumption adds enormously to the drain on the national resources. The best wooded parts of Servia at the present day are the districts of the south and south-east, but especially the department of Toplitza, which may be said to contain the only remaining virgin forests of Servia, and whence are annually drawn large supplies of Walnut trunks and Oak staves for casks. Walnut trees which attain to any enormous growth have been mercilessly dealt with, the value of this wood having attracted the attention of Aus-

trian merchants, who send their agents to choose and cut the wood for exportation. The Fir and Juniper are found in the central and western valleys, and on the great Kopanik range, on the south-east; the Pine on the heights of Zlatibor. During 1888, 5,000,000 kilos. of cask staves were exported to Austro-Hungary and France, and 300,000 kilos. of Walnut trunks for gun-stocks and furniture to Austria, this large supply being obtained from Toplitza. About 8,000,000 kilos. of planks, firewood, and other small timber circulated in the Nisch district during the same period.

The Corsican Pine (*P. Laricio*) for exposed poor land.—This is one of the best Conifers for planting on poor land in exposed situations with a view to a permanent crop of timber. I lately saw a quantity of it planted out on a bleak plain in a thin, poor, brashy soil, growing away at a rapid rate and quite overtopping the Larch and Scotch Fir. *P. Laricio* appears to shape itself so well for a timber-producing tree, that I believe it will prove to be the best of all the Pine family yet introduced. It has other good qualities, too, for hares, rabbits, and boring beetles rarely injure it. It has, however, one drawback—it transplants badly; but this may be overcome by growing it on in a nursery and carefully shifting it every autumn until it is ready to plant out.—S.

Beauty of the Birch.—It seems surprising that the Birch, which is sometimes called "the Lady of the Wood," is so seldom seen in the garden and pleasure ground. In habit, general style, beauty of stem, colour, and form of leaf, what tree is more beautiful than the Birch? It looks well singly, in groups, or associated with almost any other tree. Standing up among Arbutuses, what a contrast of habit and of colour is produced! Birch trees also look grand towering up with clear stems far above the heads of glossy Laurels or Hollies, or glowing Rhododendrons. Indeed, everywhere they have a graceful appearance, and, unlike so many other trees, their roots prey but little upon those of their neighbours. And yet, somehow Birches are comparatively little used for ornamental purposes.—T.

A good fence.—A post and rail fence, cheap and strong enough to keep out horses and cattle, may be made as follows: Set the posts 9 feet apart, or 2 feet less than the length of the rails used. Bore 1½-inch holes through the posts 1 foot from the ground, and at right angles with the direction of the fence. Bore three holes above this, about 9 inches apart, one above the other, and drive in wooden pins in all four holes to project 4 inches on each side of the post. Lay the rails on these pins, close to the post on each side. Bore a three-eighths hole above the top rail, and another one 1½ inches below the bottom pin. Take a piece of wire 10 feet or 11 feet long, and pass half its length through the top hole, and cross it under the top rail; cross it again under the second rail from the top; cross it again under the third rail, and finally cross it under the bottom rail by slipping the ends of the wire through the small hole, and bring them around in front of the post and twist them together. If sheep are kept, a board should be nailed at the bottom, or a fifth rail added.—A. A.

The Weeping Hemlock is the queen of Evergreens. Its sprays have a permanent beauty that we only see equalled, in a fleeting way, by some stray forms of common Hemlock. Not less striking, in its way, is the broad-leaved Hemlock, the dark, massive foliage of which contrasts finely with that of the golden *Retinospora*.—S. P.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

ROSE GARDEN.

T. W. GIRDLESTONE.

ROSES IN 1889.

IN reviewing the past Rose season there is no particularly salient feature to note, such as the drought of 1887 or the deluge of 1888, and 1889 may fairly take rank as an average Rose season.

The effects of the cold and wet of 1888, however, were only too apparent among the plants, for in consequence of the pithy and ill-ripened condition of the wood, Rose trees generally suffered very considerably during the winter, especially the short-wooded Hybrid Perpetuals of Baroness Rothschild race, and even the majority of the old-fashioned summer Roses did not escape uninjured. This winter injury of the wood resulted during the summer of 1889 in the bulk of summer Roses being almost flowerless, while perpetuals of all classes produced blooms whose lack of quality and finish would have been deplorably conspicuous but for the beauty of colour induced by the favourable conditions at the flowering time. For it cannot be gainsaid that the season this year seemed to be making every effort to atone for its vagaries in 1888. At pruning time, in view of the effects of the winter among the unripened plants, the prospects were anything but cheerful. The plants broke weakly and seemed quite unable to make any headway, but the spring proved one of the most genial on record, and for once there were no terrible late frosts, while the warmth of May coaxed the hesitating plants into some sort of growth. Their lack of strength seemed to invite the depredations of every kind of insect pest, but careful picking assisted by some beneficial rains got rid of the marauders, and the fine weather continuing throughout the month of June, the plants began to present quite a respectable appearance, so that, incredible as it appeared in April that there should be a fine display of bloom at all, by the first week in July the Rose garden seemed almost as gay as usual. Some flowers lacked size, and, as has been already hinted, many were wanting that perfect finish that is characteristic of modern Roses and had confused centres or folded-in petals, but owing to the fine weather the flowers opened clean and the colours were very bright, so that the effect in the garden was not lacking in brilliancy.

More than ever this year was it found necessary to rely for early bloom upon the Tea-scented and the single Roses, for although even the singles bloomed less freely than usual, they flowered freely compared to the majority of the Albas, Gallicas, Hybrid Chinas and other summer Roses. Even the Teas were not so early as usual, and with the

exception of *Maréchal Niel*, which came into bloom in the third week in May, it was not until the 1st of June that anything like a gathering of Tea-scented Roses was possible. The singles began to be gay about the middle of May, and although the different kinds varied a good deal, many of them, including the single Austrian Briers, *R. Beggeriana*, *R. macrantha*, Hebe's Lip, the rugosas, *R. pomifera*, and *R. spinosissima*, bloomed in great beauty.

The last two or three seasons should at any rate have the effect of making the managers of Rose shows fix the dates of their exhibitions with greater confidence. Early in the present year it certainly looked as though Roses would be very late in coming into bloom, and the usual panic set in among the societies that had fixed an early date that there would be no Roses in time for their show. Postponements were talked of and in a few instances effected—notably with most unfortunate results in the case of the great Rose conference organised by the Royal Horticultural Society at Chiswick; for owing to the continued fine weather in June, the season ultimately proved a decidedly early one, and by the first week in July the bulk of the Roses in many southern gardens were already past and gone, so that the conference, designed to be the great event of the Rose year, was robbed of much of its interest actually from lack of Roses.

At the earlier shows the Teas were in many cases magnificent, and the wonderful blooms exhibited by Mr. Frank Cant of Ethel Brownlow and Francisca Kruger, and by Mr. George Prince of Comtesse de Nadaillac, Princess of Wales, and Princess Beatrice, will long remain prominent among the recollections of the exhibition season of 1889. It was most unfortunate, in view of the great heat of the day, that unforeseen circumstances should have necessitated the holding of the National Rose Society's great exhibition under canvas, for the lack of space and fresh air, combined with the high temperature, soon robbed the flowers of all their freshness. However, the Shah of Persia is not likely to pay another unexpected visit to the Crystal Palace for some time to come, so it may be hoped that the Rose show will not again be crowded out of the main building.

One of the most striking features of the show from the exhibitor's point of view was the prominence with which the new Roses sent out in 1887 by Messrs. Alex. Dickson, of Newtownards, were exhibited. Fine blooms of Earl of Dufferin and Ethel Brownlow came from almost all parts of the country, and Lady Helen Stewart, though preferring a cooler season, was finely shown, notably by Mr. Pemberton. It says much for the constancy of Earl of Dufferin that six blooms of it should have won the first prize in a class with so many entries as that for six blooms of any Hybrid Perpetual exhibited by an amateur, whose stock of plants of a new Rose is generally limited; and it is also worthy of note that in the list of Roses most successfully exhibited

this year, Mr. Dickson's variety has surpassed even the very fine and constant Mrs. John Laing (Bennett, 1887), while his Ethel Brownlow, which is undoubtedly a Tea Rose of quite the first rank, has already worked up to a place among the best twenty-four.

Other recent Roses that have maintained their good character this season, although not all conspicuous at the Crystal Palace, have been The Bride (May, 1885), which is every bit as good as her lovely mother, Catherine Mermet; Viscountess Folkestone (Bennett, 1886), most beautiful and one of the freest of all Roses, flowering very early and continuing till the very last; Mme. Bois (C. Levet, 1886), one of the best and most beautiful both in colour and form of the Victor Verdier family; Mme. Joseph Desbois (Guillot, 1886), a very lovely Rose, almost pure white externally, with a delicately flesh-tinted centre, and the flower, although large, the very acme of refinement; Mme. Henri Pereire (Vilin, 1886), a very vigorous really dark Rose of great promise; L'Idéal (Nabonnand, 1887), a charming addition to the bud Teas; Mme. Hoste (Guillot, 1887), a very valuable and distinct novelty that will rank among the best of the Teas; Silver Queen (Wm. Paul, 1887), a finely formed and reliable Hybrid Perpetual like Queen of Queens, but far more pleasing in colour; Sir Rowland Hill (Mack, 1888), a handsome plum-coloured Rose of Charles Lefebvre race, and quite distinct; and Souvenir de S. A. Prince (Prince, 1889), the beautiful pure white sport from Souvenir d'un Ami, which deservedly received the gold medal of the National Rose Society as the best new Rose of the year. Bennett's Her Majesty was very extensively and finely shown, and is unquestionably an invaluable variety to the exhibitor; but as a plant for general garden cultivation it is not to be compared to the same raiser's Mrs. John Laing, which though less delicate in colour is at once the most vigorous and constant of modern Roses.

Amongst older varieties that were exceptionally conspicuous during the season of 1889 were Captain Christy, which appeared constantly in great perfection; Suzanne-Marie Rodocanachi, of which even some little grafted plants imported from the raiser in France to prove the correctness of the name, produce some most beautiful flowers; Marie Finger, always good, but this year unsurpassed—in fact, all the Roses of Victor Verdier race were well suited by the past season; there is little doubt that the English springs are generally colder than they like; Comte Raimbaud, a lovely crimson Rose giving beautiful maiden blooms on dwarf Brier stocks, and one which has now quite vindicated its claim to distinctness; Comtesse de Paris (Lévêque, 1882), freest of rose colours; Duke of Connaught (Paul), exceedingly fine this year; Rosieriste Jacobs, another good crimson, much exhibited this summer; and, curiously enough, both Alfred Colomb and Marie Baumann, which are rarely seen to great advantage in the same season. Of Teas, the most beautiful of all

was also the most frequently exhibited, and Comtesse de Nadaillac was seen everywhere; Catherine Mermet, The Bride, Innocente Pirola, and Mme. de Watteville bore her good company, as did Princess of Wales and Princess Beatrice, while two Teas of about equal beauty and value, Francisca Kruger and Comtesse de Panisse, were both seen to great advantage, and are now taking the more prominent positions to which their unquestionable merits entitle them. Probably the finest bloom of Francisca Kruger that has ever been seen was staged by Mr. Frank Cant in his splendid box of Teas at Bagshot on July 3.

The fine and exceptionally hot weather that characterised September this year, in addition to ripening the abundant growth of Roses of all classes, was the means of bringing to perfection one of the finest possible crops of autumn blooms of Tea-scented Roses. It was anticipated that after the comparatively weak spring growth of the plants, there would be a great access of vigour and consequent profusion of bloom in the autumn, but rarely have the individual flowers been so fully developed and so pure in colour as this year, and that in the case not only of a few, but of almost all varieties, including Maréchal Niel and the new climbing Niphetos (Keynes, Williams, and Co., 1889), which it may be noted makes the most amazing growth and flowers with great freedom.

The past Rose season, therefore, which opened, after a long winter that was very trying to the plants in consequence of their ill-ripened condition, with many anxieties to the rosarian, ultimately proved an eminently pleasant and interesting one, and however much Roses may have suffered in the melancholy season of 1888, it is beyond question that every inducement to recover their normal condition and to make preparations for a grand display of bloom next year has been afforded them by the Rose season of 1889.

Lifting and replanting Roses.—There are cases when it is best to "let well alone," and we have often found it so with Roses; but when they seem to be doing extra well, as far as growth is concerned, it may be advisable to reduce the vigour of wood-making to flower-producing. When soil is extra good, depth of tilth has at planting time been attended to, and other conditions favourable, root action becomes strong and gross wood follows. I have often had such Roses to deal with, and never failed to induce more moderate and uniform growth, which is a precursor of abundance of fine flowers. At the present time we have some hundreds which are to be lifted. They are all dwarfs on the Manetti and Brier stocks, with shoots growing from 4 feet to 9 feet high. The long gross roots are shortened, any suckers are removed, and each tree is replanted with some fresh loam put next the roots, covering the junction below the surface an inch or two. A mulching of rotten manure is then given, and covered neatly with soil for appearance sake, as well as to help in preserving the virtues of the manure. We grow Roses on pillars, arches, as dwarf bushes, and peg numbers of them down over the surface. The strong growths answer well for this purpose, and they throw out shoots from their base. At the present time (end of October) we are able to cut large quantities of flowers. Three of the best are General Jacqueminot, Gloire de Dijon, and Souvenir de la Malmaison. Roses at this season

are sometimes seen in stunted condition and subject to mildew. Lifting them carefully and renewing the soil about their roots soon impart health and vigour.—M. T., N.B.

ROSE SPECIES AND THEIR FRUITS.

THE great beauty of the Japan Rose (*R. rugosa*) in its autumn dress of bright yellow leaves and abundance of rich red fruits which terminate each shoot is not confined to this species alone, but of late we have given so much attention to the fine hybrid Roses, that the species which are many and beautiful have in consequence been neglected. The whole Rose family is so large and varied, that it is easy to understand how a section of it might be almost forgotten, and certainly of late years we have been so busy obtaining and cultivating fine hybrid kinds, that we have quite forgotten the beauty of the original forms. Many of the species, however, are unaffected, or rather not improved, by high cultivation; they do not need it, but succeed with and are best treated much as we do the flowering and fruiting shrubs.

Associated with the shrubs or even in bold beds by themselves in the wilder parts of the grounds, many of the Rose species will add quite a new interest to the garden, for they have an added beauty in their richly autumn-tinted leaves and glowing fruits which we cannot have or appreciate by confining ourselves solely to the hybrid kinds. This beauty had been almost forgotten until lately, when *Rosa rugosa* having become so popular and extensively grown, its qualities in this respect could not but be recognised, seeing that in this species they are of a very high order of merit. Some of the best of the many species should be grown largely, and with all the variety of leaf, flower, and fruit, they will prove as attractive and interesting as the beds and groups of the finer flowered kinds. In addition to the typical form of *R. rugosa*, there are selected and improved varieties of it, especially the pure white one. *R. pomifera*, the Apple-bearing Rose, is a fine kind rarely seen in gardens. *R. gymnocarpa* is covered with a dense crop of hews, each about the size of a Pea and of a red colour, whilst *R. pisocarpa* is called the Pea-fruited Rose, owing to the resemblance of its brilliant little fruits to Peas.

R. mollis is a fine one which ripens its fruits early, and *R. hispida* is interesting because its fruits are black. *R. lucida* is highly ornamental at all times. The wood is brightly coloured; the leaves, as the name implies, are clear, glossy, and shining; the flowers are red and borne profusely, whilst the fruits which succeed them are of a rich, glossy red hue, and they hang for a very long time. *R. microphylla* is a vigorous kind, producing red flowers and fruits, which are sometimes as much as 2 inches long. The fruits of *R. microphylla* are very curious, as they are of a greenish-yellow hue, prickly, and somewhat like an Acorn. *R. microcarpa* is a very small-fruited kind, as in size and shape the fruits much resemble the berries of a Hawthorn. *R. caroliniana* is the Swamp Rose of Carolina; it has rosy-pink flowers and roundish, red, hairy fruits. *R. acicularis* is one of the most spiny of the whole genus. In summer its shoots are clothed with a rich glaucous foliage; the flowers are bluish-white, and the fruits which follow of an orange-yellow colour, and largest at the apex. The foliage of *R. alpina* is so richly coloured, that if the plant never flowered it would be worthy of culture. It has rosy flowers followed by an abundance of bright fruits. *R. pyrenaica* is a smaller form of the above, and is a pretty kind not unfrequently met with. *R. cinnamomea* is another kind that is pretty in foliage, flower, and fruit, whilst the dwarf fierce-looking *R. ferox* makes a spreading, much-branched bush, and has fruits of a blood-red colour. Even our own Dog Rose and the Sweet Brier come into the category of fine-fruited kinds, for their rich crops of scarlet hews form some of the brightest pictures in the district where these native wild Roses abound. The Sweet Brier should never be absent from the wilder portions of the grounds, as its delightful fragrance alone entitles it to a place there apart from its beauty of flower

and fruit. *R. nitida* and *R. nutkana* are two good kinds. The first-named is brilliant in both flower and fruit, and the autumn foliage is very dark and rich. *R. fraxinifolia* is a distinct and handsome plant. The flowers are crimson and very sweetly scented. These kinds are but a random selection from a very extensive genus. They are those most commonly met with, although they are not nearly so common as their merits warrant. Probably there are many others not mentioned here. Even some of those referred to above are never seen outside of a botanic garden, and probably are not obtainable in the trade. However, if a demand arose, a supply would soon be forthcoming, as such Roses as these are readily increased by seed, layers, suckers, or cuttings. Even starting with a single plant of some of the more uncommon kinds one could soon raise a stock, for it should be borne in mind that to enjoy the full beauty of the wild Roses they should be planted in masses and left alone. A. H.

TEA ROSES—WHAT AND WHEN TO PLANT.

I AM not careful to defend my selection of six varieties chosen for garden and not show purposes, though there happen to be several good show flowers among them. I was only asked to name six, and not sixty, or more or less. I am, however, sorry that any rosarian meditates giving up growing *Homère*. True, it comes curious at times in the spring. But give it its head and see how beautiful it will become throughout the late summer and autumn. For general usefulness *Homère* runs either abreast or a close second to the most useful of all Roses, *Gloire de Dijon*.

As to the time of planting, that may very well vary in different localities and in varying conditions of soil and climate. Primarily my instructions related to dwarf Teas and autumnal rooted cuttings. These are far safer left undisturbed till the late spring or early summer. In regard to such, the adage, "the more haste the less speed," is too often verified. Great mortality often ensues from the late potting or planting of rooted Rose cuttings in pots or under glass. The loss is greater when attempts are made to plant them out in the open. In cold localities it may also often be safer to defer the planting of Tea standard Roses till the spring. Of course, in warmer climes no distinction need be made between Tea and other Roses. As a rule, however, Teas are the more tender, less from any constitutional difference between them and Hybrid Perpetuals, but because the Teas are perpetual growers, while the others are not. Roses that bloom right to the end of the year are necessarily more tender than those that seldom bloom after July.

Some of the most satisfactory results ever obtained with Tea Roses were realised thus: The plants were lifted in growth and bloom towards the end of October and planted pretty closely on the floor of an orchard house, being syringed overhead for a few days until re-established. They went on opening their buds through the winter and early spring as if nothing had happened, wintered in safety, and were transferred to the open beds and borders in April. Less than a week's nurturing sufficed to re-establish them in their summer quarters, which they furnished in a way that would have satisfied "A. H." I have also seen Tea Roses wintered closely in cold pits, their roots placed in a light mixture of leaf-mould and loam. The frost was merely excluded, the tops kept as cool and as airy as possible, and the plants moved carefully, a perfect network of roots, towards the end of April or the first week in May, weather permitting. These ways of planting Teas are more troublesome than the ordinary ones, but they yield a lower mortality, and enable these lovely Roses to be grown in many localities where it might otherwise be too cold to grow them.

The preservation of Tea Roses is nearly akin to their planting; at all events, it is to little purpose we plant and plant if the Teas do not survive our winters and springs. The mortality among Teas, and especially dormant buds, is at times most depressing. One of the surest modes of preserving these in quantity is to lift and place them in cold pits, sheds, or orchard houses for the winter,

and plant them out in the spring. Established plants may be to a large extent grown into a hardier state. Give Teas their heads and let them scramble over rocks or up trees, or run into rough bushes as standards or dwarfs, and we do our best to make the Roses protect themselves. Their very bulk forms their canopy of safety, while one such Rose in a free scrambling mass is worth a hundred of the prim formal plants so generally met with in beds and borders.

On one point I trust that "A. H." will agree with me, viz., that the more Tea Roses we plant at all seasons the better, so long as they mostly live and grow, and so furnish our gardens and landscapes with higher beauty and sweeter fragrance.

D. T. F.

ORCHIDS.

W. H. GOWER.

CATASETUM CHRISTYANUM.

THE genus to which this plant belongs, if not useful for general decoration, yet contains some of the most curious flowers in the vegetable world. This remarkable plant I noted flowering recently in Sir Trevor Lawrence's Orchid house, and I am glad to find that he is devoting considerable attention to these plants, which must in the end again become favourites, and that, too, in a very different manner to what they were in the earlier days of Orchid growing, when many plants were grown because they were Orchids. These growers were called Orchid specialists. I do not like specialists. One may devote himself to a class of plants in a great measure without becoming a specialist. If anyone, however, is inclined to be so, this plant now under consideration will make him one, its colours are so curious and the shape so fantastic. It fully bears out Reichenbach's words, "Take Catasets into your stoves and you are pretty sure to become more or less bewitched earlier or later." Catasets during the summer months require an abundant supply of heat, and I like to grow them in the East India house, that is to say, in the hottest house at my command. They must be kept in a very moist atmosphere and have a fair quantity of moisture at their roots, or in all probability they will suffer from the attacks of thrips, which greatly disfigure the plants and exhaust their energies. Good drainage is indispensable. If this is attended to and abundance of heat given, Catasets will grow well. After growth is finished and the leaves are all shed, which is a sure sign that the bulbs have ripened, these plants may be set upon a shelf in the Cattleya house and kept quite dry. The bulbs of *C. Christyanum* attain a height of 6 inches or 8 inches, although in the case of Sir Trevor's plant they were smaller. The scape is erect and bears numerous flowers. The dorsal sepal and the petals are large and stand together in an erect manner; the lateral sepals spread out at right angles and are of an intense deep brown; lip almost globose, of a slightly paler brown than the petals. The middle lobe is brownish green, toothed round the edge; the side lobes are bright green, with long blackish purple hairs on the lower edges. The column, standing erect, backed by the dark brown petals, is green, with a long beak and two projecting arms, which give it much the appearance of an Indian idol. It is a wonderful flower, and I for one should be glad to see it more frequently.

Cypripedium Spicerianum.—This Orchid has done uncommonly well with me. From a small single-crowned plant in 1886, it is now a huge mass in an 8-inch pot. It has recently produced forty flowers, and there are still a few buds to open. It is growing in pure, well-drained fibrous loam. When done flower-

ing the plant will be placed in a cool house, kept nearly dry at the root, and rested until February, when it will be put into a forcing pit and given abundance of moisture.—J. M.

Lælia Dayana.—A flower of this species marked No. 3 comes from Mr. Powell. This is the true plant named *Lælia Dayana* by Reichenbach, and is a very different plant from *Lælia pumila*, although some authorities consider it a variety only. The lip, however, is not so closely adpressed; it has more raised lines on the disc, and to me it is quite a different flower, so that I quite agree with the authority for giving it specific rank. The other two flowers marked No. 1 and No. 2 are those of *Lælia pumila*, sometimes called *Cattleya marginata*. Your flowers, although they may be large for the plant which produced them, are not really large for the species. They may be accepted as typical flowers of *L. pumila*.—W. H. G.

Epidendrum cinnabarinum.—This beautiful species is very nearly allied to *E. radicans*. It is a particularly free-blooming plant, and its racemes of flowers are large and persistent. On a raceme now before me there have been altogether thirty flowers, half-a-dozen or more of which are open together. The flowers last a very long time, and before they have lost their beauty the spike has grown and developed other blooms, so that a continual display of rich colour is maintained. The sepals and petals are firm in texture, rich deep orange-vermilion, with a few freckles of deep red irregularly scattered over them; the side lobes large and deeply lacerated, middle lobe small, finely toothed, rich deep yellow, and with a few spots of rich crimson near the base. The colour of this with age becomes deep vermilion. It is a scendant species which is said to grow in sandy, bushy places, about Pernambuco and Bahia, and therefore requires more warmth than *E. radicans* and such like species. It is now flowering in Sir Trevor Lawrence's collection at Burford Lodge, Dorking.—W. H. G.

Cattleya Dowiana aurea.—From Mr. Cannon, of Merton, Surrey, comes a flower of this *Cattleya*, which he says he thinks a fine variety of *Dowiana*. It undoubtedly is, and I also think it is a very fine variety of *aurea*, the plant that exists such a distance away from the original habitat of the species, no intermediate localities being recorded. The sepals and petals are large and full and of a rich clear yellow without spot or streak of any other colour in them, whilst the large velvety lip is rich purplish-crimson profusely netted with golden veins. It is a magnificent form, and it is, I believe, somewhat more amenable to the dormant treatment through the winter months than the typical *Dowiana*, a condition which I maintain is necessary to obtain flowers, and I also believe it is this which has led to the statement that *aurea* blooms more freely than *Dowiana*. "It is all very well," said a most enthusiastic Orchid grower to me the other day, "to write and say the plants must not be allowed to grow through the winter; but how is it to be prevented?" This appears to be difficult of accomplishment, but it must be done if flowers are to be looked for. Another collection which I recently visited had growths upon *C. Dowiana* over 2 inches long. I said, "Those growths will not flower." The remark made was, "I intend to keep them growing well and I expect them to produce flowers." I am quite sure, however, that they never will.—W. H. G.

Cattleya velutina (G. G.)—A remarkably fine variety of this plant comes to me for a name. It is about the finest I have ever seen. This plant was originally thought to be a natural hybrid between *C. bicolor* and *C. guttata*, but it has been imported in too great quantities for this theory to be of value. It is now nearly twenty years ago since this plant first flowered in this country. It has now become plentiful, although some very inferior forms are from time to time seen. A good variety of *C. velutina* has three recommendations: firstly, its flowers are large and showy; secondly, they appear at a very dull season of the year; and thirdly, its blossoms are gratefully perfumed. The flower before me is upwards of 5 inches across the petals. The sepals and petals are of a rich tawny orange,

heavily spotted all over with purplish crimson; lip large, white marked with broad veins of purple, the marginal border of the front lobe being tawny yellow with a downy appearance. It is delightfully sweet scented. Now that this Orchid can be obtained, I would strongly recommend all who may have the convenience to grow *Cattleyas* to obtain it. It is a plant which grows from 1 foot to 18 inches high, its stems being slender and bearing a pair of thick leathery leaves. It enjoys an abundance of heat during the summer season.—W. H. G.

NOTES OF THE WEEK.

Calanthe curculigoides.—This rare and beautiful *Calanthe* was in bloom recently with Mr. Bull. It reminds one, as far as the inflorescence goes, of the pure white *C. veratrifolia*, but the flowers are rich orange-yellow, and very welcome at this season.

Pleiones.—These are beautiful Orchids for the autumn, and several pans of *P. lagonaria* were delightful the other day in Mr. Bull's Chelsea nursery. *P. birmanica* was also in bloom. It is a pretty Burmese species, the flowers light purple, and with three toothed keels on the disc, spotted brown on a white ground.

Cistus florentinus is a very useful autumn plant for the rockery. It is one of the hardiest, and at present is a most interesting subject with its huge bright purple calyces, pure white flowers, and wealth of dark green foliage. It may be increased by cuttings which root readily under a handlight or in a cold frame.

The "Hall and Fraser" Fund.—We are pleased to know that over £300 have so far been collected, towards which Lord Rothschild and Leopold de Rothschild have each contributed 21 guineas. Gardeners are asked to send subscriptions, however small, to this deserving fund.

Odontoglossum Insleayi splendens.—This, one of the finest of autumn-flowering *Odontoglossums*, was in full bloom the other day with Mr. Bull. The flowers in good forms are over 4 inches across, and rich brown, tipped with yellow. The lip is large, yellow, and remarkably showy from the brilliant carmine spots at the margin.

A new park for Reading.—Mr. George Palmer, head of the well-known biscuit firm of Huntley and Palmer, has signalled the majority of his son, Mr. George William Palmer, by presenting to the town 21 acres of land in the eastern suburb of the borough to be used as a public recreation ground. Mr. Palmer has also promised £300 towards the cost of laying out the ground.

Cyclamen africanum, or *macrophyllum*, though not one of the best, is a very handsome species with its numerous large, prettily marbled leaves and deep rose-purple flowers. It is a native of Algiers, and is not hardy in the open air, though it may be very successfully grown in a cold frame. *C. hederaefolium* is just now very handsome as a foliage plant, the huge masses of marbled leaves being very attractive.

The Grass-leaved Crowfoot (*Ranunculus gramineus*), though not one of the most beautiful of the family, is still not without interest and beauty as a rock plant. Its dark green Grass-like leaves are not without beauty now, and these are followed in spring by abundance of large golden-yellow flowers. Parkinson figures a double-flowered variety, but we have not seen it in cultivation. It affects dry places, and is most suitable for dry banks. Native of S. France and Italy.

Horticulture at the French Exhibition.—Like "D. T. F." (*THE GARDEN*, Nov. 2, p. 420), I was impressed with the great beauty of the bed of Michaelmas Daisies near the Trocadero, and with the apparent dwarfness of the plants. Having taken a great fancy to one kind in particular, and being kindly promised a piece of it, when the gardener dug the plant up to take it off, I found the roots had been tied up in straw and then buried a depth of some 18 inches to produce the regularity and denseness of the bed which was so pleasing.—HENRY BUCKLEY, *The Upper Boon, Linthorst, near Broomsgrove.*

The Montpellier Milk Vetch (*Astragalus monspessulanus*) is a very handsome plant for the rockery. It is a native of the south of France, growing in dry places about Montpellier, a perennial in duration, and so dwarf and free-flowering as to make a very beautiful subject for the rock garden or mixed border. It, however, always does best in a position sufficiently elevated to allow of its flowering stems to

trail or droop, thus displaying to better advantage the large bunches of pretty purple flowers. It is best increased by seeds, division being a dangerous way in the case of this species. It has been in cultivation since 1776.

Blueets (*Houstonia cærulea*) is a great favourite as a rock plant, and we know of no alpine that gives so much pleasure in a restricted space as does this gem from North America. It is perfectly hardy, and the cause of its being, as a rule, short-lived is not so much its constitution, as its flowering itself almost to death in positions suitable to its welfare. In a half-shady spot it soon makes dense tufts, and the poorer the soil the less likely it is to be weakened by excessive flowering. The flowers of the form generally seen in cultivation are almost white, with just a tinge of blue. The typical form, though in cultivation, is still rare. It is by far the best and the most desirable of the two. They may both be increased quickly by division.

Corydalis glauca is a splendid winter plant, whether for the rockery or the border. It is such a free grower as to give no trouble when once established. The lively bright yellow and purple colour of its flowers is very pleasing all through the summer months. Just now it is an object of interest on account of its attractive leaves, which have a bluish tint which gives it a distinct character of its own. A native of Canada. Its near ally, *C. lutea*, so abundant and useful for crumbling walls and such places, also makes a pretty rock plant. The flowers are bright yellow, and the only objection, if such it can be called, is the rapidity with which it increases by the free distribution of its numerous seeds.

Dahlias in November.—It is not very often that Dahlias escape the effects of frost until November is upon us, yet such is the case this year, and we have lately cut some good blooms of the white Cactus kind Lady Constance and the scarlet Jaurezi, and in a neighbouring garden many varieties are in bloom. This is to a great extent owing to our close proximity to the sea, for a little further inland all such tender plants as the Dahlia were cut off six weeks ago.—J. G., Gosport.

* * In the Royal Horticultural Society's garden at Chiswick, on the 3rd Nov., all the Dahlias were flowering freely and cut blooms could be had in quantity. It is very strange that all the Marrows were cut down by the frost we had in October, while the Dahlias were uninjured.—Ed.

Chrysanthemum Mrs. Alpheus Hardy.—Mr. Owen has in his nursery at Maidenhead a nice bloom of *C. Mrs. Alpheus Hardy* partially open, and, as far as can be seen at present, it corresponds with the published description of this American novelty. Generally this variety has not done well, the plants when obtained being small, and, unfortunately, the tops of our two best were broken off, but two buds on others are set and swelling, and may produce some late flowers. Among incurved varieties Mr. Owen has secured the stock of a new sport from Princess of Wales (named Mrs. Coleman), flowers of which will be open in a few days. It is of a deep golden-bronze colour, the centre of the flower when fully expanded being of a deep golden-yellow, quite distinct from Miss M. A. Haggas, and likely to prove a great acquisition in this class. *Perle Precieuse*, purple, tinted with silvery-rose, and *L'Automne*, buff, are bearing good blooms, although the latter seems to be scarcely a true incurved variety.—H.

Tropæolum tuberosum.—It is usually thought that a sunny and warm spot is necessary for this pretty climber in order to promote its growth and freedom of flowering, but in passing through the village of Chidcock, in Dorsetshire, a few days ago, I saw it on the north side of several cottages and in places where not a ray of sunshine could fall on it during the longest summer day. The plants were growing rampantly, covering doorways and blooming profusely, but Chidcock is favoured as regards climate and aspect. It lies in a semi-circular hollow, perfectly sheltered from east, north, and west winds, and opening southwards towards the sea, which is distant about half a mile. On the villa walls Magnolias, Myrtles, and

Pomegranates flourish, and on the sunny side of cottages Gourds and Marrows are trained, their ponderous and pendent fruits having a fine appearance. I often think this is the most pleasing way of growing these things where suitable sites are at command, and when the eaves project far, as is often the case in old cottages, the plants escape frosts that would be fatal to them in the open, and continue to flourish unscathed till the end of autumn.—J. M., Charmouth, Dorset.

Monstera deliciosa.—An interesting exhibit at Chiswick on Tuesday was the fruits of this *Monstera*, brought by Mr. Wythes from the Syon House Gardens. The *Monstera* genus is small, but interesting. The present plant has large leathery leaves, rich green, perforated with holes, the fruits resembling Indian Maize. They are succulent, mealy, and in flavour something like that of a Pine-apple with a trace of Banana in it. When planted out against a damp wall of a stove so that the aerial roots may cling to it, the plants make a splendid growth. It is sometimes used in subtropical gardening, and its ample foliage can resist well both winds and rains. It is a Mexican species, and known also as *Philodendron pertusum* and *Tornelia fragrans*.

Epping Forest.—An interesting ceremony took place on Saturday last within Epping Forest. The Epping Forest Committee attended to take formal possession, on behalf of the Corporation of London, of the Oak Hill Enclosure, comprising 12½ acres of land, situate between the Wake Arms and Theydon Bois. The Epping Forest Commissioners, whose functions ceased in 1877, had decided, after a long contest, that this enclosure was private property. Fearing that it would fall into the hands of builders, Sir T. Fowell Buxton and his brother, Mr. E. North Buxton, two of the verderers, recently purchased it and presented it to the Corporation to become part of the Forest for the recreation and enjoyment of the public for ever.

Iris alata speciosa.—You asked me to send you any specially beautiful flower I might happen to have here. I forwarded one to you this morning whose excellence is only rarely exceeded. If *Iris alata* holds a very foremost place amongst the Irises, then it stands to reason that *Iris alata speciosa* must be quite out of the common, and so it certainly is. The only alteration that I could suggest about its name is that it be called *speciosissima*. The extreme delicacy and refinement of its very tender blue, the gently crumpled edges of the falls, its pleasant green leaves, and, beyond everything else, the thread of gold which picks out and wonderfully lightens up the whole flower, have made *Iris alata speciosa* such a picture of beauty in my greenhouse as is not often exceeded. If your artist could have taken an express train and seized it at its best, I think he would have been rewarded for his pains. I got this precious rarity from Messrs. Dammann, of Naples, and also a sister plant, *alata* var. *alba*, but this is rather more coy than the other, and as yet it has not bloomed.—H. EWBANK, St. John's, Isle of Wight.

Notes from Baden-Baden.—*Ophiopogon muscarioides*, the best of this tribe, has been in flower for fully two months; the large spikes are of a showy deep purple. The deliciously-fragrant flowers of *Cyclamen cyprium*, now re-introduced, are white with purple blotches, and resemble in form those of *C. neapolitanum*; the edged leaves are brownish green with pale markings. *Crocus iridiflorus* major is a very superior form, and very deep in colour. *C. Karduchorum*, new to cultivation, has been introduced from Armenia; its flowers are of a pretty purple tint. *Gladiolus Eckloni*, with its dense spikes of small, white, crimson-tipped flowers, is a late-flowering plant, very singular and striking. *Syringodea bicolor* also is autumnal. The flowers, resembling those of a well-shaped *Crocus*, are white shading off to purple; the delicacy of colour is quite lovely. The starry flowers of *Romulea rosea* var. *alba* are very conspicuous and showy—snowy-white and open in succession. The Cape of Good Hope still yields novelties. A beautiful *Moræa* with large blue flowers, half-a-dozen new species of *Gladioli*, the pure white *Sparaxis pulcherrima alba*,

and a bulb having balloon-shaped purple flowers, quite new to us, are under cultivation here. Among *Nerines* must be mentioned as novelties *N. compacta*, having very short pedicels, so much so that the umbel seems to be but one flower of an orange-scarlet colour; *corusca pallida*, pale scarlet; *amabilis alba* and *pubica rosea*; *pubica major*, a seedling showing bigger flowers. *Rosita* is a hybrid; *pubica* × *flexuosa*, of a delicate peach-blossom tint. Novelty is a very large-flowered seedling, probably *pubica* × *Planti*; it is very striking, and of a copper-rose shade. *N. minima* is the smallest among this family; the very wavy flowers are scarcely larger than a sixpence and pale rose.—MAX LEICHTLIN, Baden-Baden.

Hardy flowers in November.—In spite of the great amount of wet we have had in October, I never saw the autumn display of hardy flowers better or lasting longer in Suffolk, where we have had no frost to speak of. The following flowers are still in bloom at Tostock House Gardens: *Dahlia* in variety, *Heliotropes*, *Cuphea platycentra*, *Malva moschata alba*, *Chrysanthemum segetum*, *C. coronarium*, *C. Burridgeanum*, *Geranium* in variety, **Calceolarias*, **Rudbeckia Newmanii*, *Sunflowers*, **Carnations* in variety, **Lobelia cardinalis*, **Salvias*, **Larkspurs*, **Pentstemons*, *Gazanias*, *Godetias*, *Convolvulus*, **Sedum spectabile*, *Eschscholtzia*, *Mignonette*, **Gaillardias*, *Salpiglossis*, *Fuchsias* in variety, **Tradescantias*, *German Scabious*, **Coreopsis* in variety, **Phlox decussata* in variety, *P. Drummondii*, *Roses* in variety, **Erigeron grandiflorum*, **Nicotiana affinis*, *Petunias*, *Zinnias*, **Wallflowers*, **Primroses* in variety, **Auriculas*, **Polyanthuses* in variety, **Violets*, *Pink Mallow*, **Michaelmas Daisies*, *Begonias*, *Sweet Peas*, *Ageratums*, *Stocks*, *Verbenas*, *Sweet Sultan*, *Marguerites*, *Nasturtiums* in variety, **Tropæolum canariense*, *Pansies*, *Blue Cornflower*, **Lathyrus latifolius*, **Colchicum autumnale*, **Veronicas*, **Anemone japonica*, *Antirrhinums*, *Tree Lupine*, *French Marigolds*, **Senecio pulcher*, *Gladioli*, **Geum coccineum*, **Solidago*. Those marked (*) are all hardy and good for cutting; in fact, with a list like this we can have flowers from April to November.—W. H. TUCK.

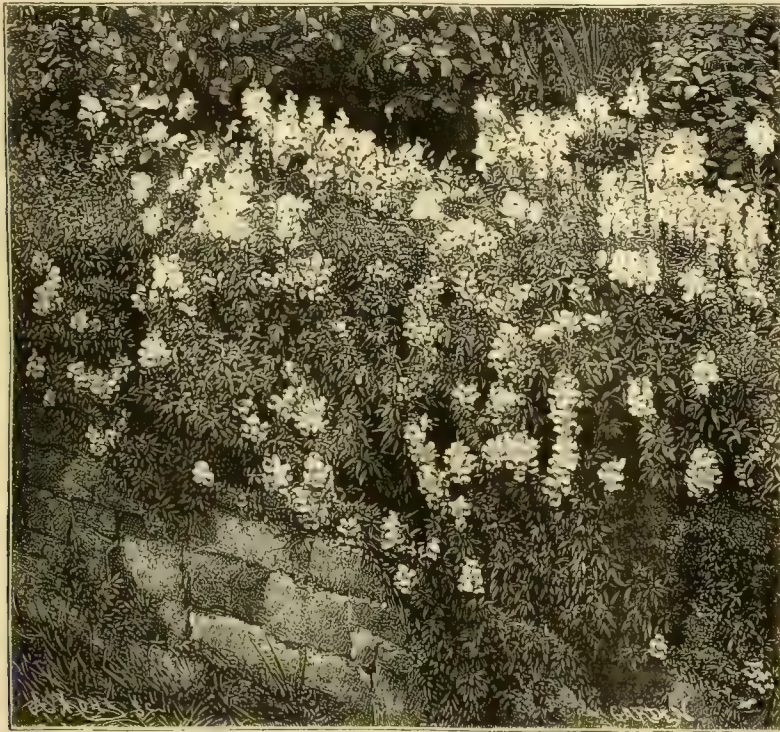
— I send you some flowers cut to-day (Nov. 4) to show the mildness of the weather here. Among the number will be found *Gladioli*, *Cactus Dahlia Constance*, *Roses* (three varieties), *Carnations*, *Primroses*, *Stocks*, *Daisies*, *Violas* (seedlings), *Campanula persicifolia alba*, *C. alpina alba*, *Sweet Peas*, *Centaurea montana alba*, *Hieracium aurantiacum*, *Foxgloves*, *Escallonia macrantha*, *Veronicas*, *Lithospermum prostratum*, *Verbascum*.—W. STRATTON, Broughty Ferry, Fife, N.B.

A Reichenbach injustice.—"A. B." was a very successful botanical collector and discovered several new Orchids in the East Indies and Indian Archipelago. Some of these were imported alive into Europe and are now in general cultivation, and the discoverer has received due credit for them. But he discovered several species, if not some genera, new to science, and of which he was able only to secure herbarium specimens. On returning to Europe he sent these together with complete information about and drawings of them to Reichenbach, but he has never heard anything further of them, and now they are locked up in the Reichenbach herbarium to remain there sealed from the world for the next twenty-five years! In the meantime it is quite probable that "C. D.," "E. F.," and others may rediscover these new plants in their native wilds and secure living or herbarium specimens of them, and submit them to the authorities at Kew for identification of name, and have the credit of being the original discoverers. This is very galling and ill requites the dangers, privations, and sickness "A. B." underwent, his enthusiasm in the field and his passionate love for Orchids. But it is a stinging lesson—it teaches us how unsafe it is to trust our eggs in any one man's private basket. Had Kew or some other public institution of the kind been entrusted with the identification and classification of Orchids, no such injustice as that done to "A. B." could possibly have been done.—F., in *American Florist*.

FLOWER GARDEN.

SNAPDRAGONS ON WALLS.

A PRETTY picture in a garden is an old Moss-covered wall, with Fumitories, Snapdragons, and other simple hardy flowers established in the chinks. Glimpses of true natural gardening of this kind are far too seldom seen, and the rich beauty of such features makes a deeper impression from its unusual occurrence. It is well known that the Snapdragon will flourish as well on an old weather-beaten wall or ruin as in the ground, and the annexed illustration shows it amidst happy surroundings. Mrs. C. Henderson, The Riding, Hexham, Northumberland, who kindly sent us the photograph from which the engraving has been reproduced,



Wall covered with self-sown Snapdragons. Engraved for THE GARDEN from a photograph sent by Mrs. C. Henderson, The Riding, Hexham.

writes that it "shows a sunk fence in her garden, the wall (100 feet long) being entirely covered with self-sown Snapdragons of all different colours most charmingly mixed. When the plants are in full bloom they make a beautiful sight." A wall of such length smothered with such a homely flower as the common Snapdragon would be a true garden of beauty in the summer months. There is no trouble in cultivation, the plants simply reproducing themselves from self-sown seed—a perpetual succession of flowers without the necessity for either sowing or planting. The old walls that surround large country seats are often surmounted with a rich growth of Snapdragons, that flourish in the chinks where there is scarcely a scrap of soil. Those who have walls cold and forbidding in their bald ugliness should sow seeds

of the yellow Fumitory, Snapdragon and other wall plants to hide the bricks or stones. What charming results may be obtained the illustration will tell. Then there are a number of Ferns that will revel in such spots as the charming Wall Rue. Contrast this picture with a wall unadorned by vegetation of any kind!

CARNATIONS IN AUTUMN AND WINTER.

I HEREWITH send you blooms of a yellow Carnation which is just coming into bloom, and which will continue flowering till after Christmas. The flowers were grown in the vicarage garden at Tilmanstone, a little village in East Kent. During the Christmas holidays of last year I was staying in the adjoining village, and the day before I left I saw a bunch of yellow Carnations which had just been gathered from the garden in question, and although unable to visit it, I noted in THE GARDEN

but certainly it is not that variety. The garden at Tilmanstone is low-lying and wet in winter, and hence, probably, Mr. Hadlow's somewhat novel mode of treatment. A piece of ground is dug and trodden firmly down, and cuttings are taken and made in the ordinary way, but in the unusual months of October and November. The cuttings are dibbled in in rows at about 6 inches apart, but they do not root till April. Meanwhile, timely attention is given to making firm any that may have been loosened by worms or frost. By the end of May or early in June, the cuttings, having become well rooted, are transplanted to where they are to bloom. Mr. Hadlow finds it is useless to insert Carnation cuttings in the open ground in July or August, as they dry off before they have had time to root; but the success of his method is demonstrated by the plants, which, inserted as cuttings, are now coming into flower, many of them having 100 blooms and buds. There is one border filled with cuttings that were inserted during last Christmas week and allowed to remain. These, too, now have flowering shoots. Probably if treated as a summer Carnation and layered at the usual time it would flower in summer, because Mr. Hadlow has found that the Mrs. Sinkins Pink, treated like his Carnations, flowers when they do, and he sent me a flower to confirm the statement. One thought suggested by Mr. Hadlow's experience is whether, by the extension of the experiment, we might not considerably prolong the Carnation season in the flower garden. Last year we had Comtesse de Paris Carnation flowering freely from July to November upon strong plants put out in September of the previous year. Now, supposing cuttings had been inserted in the following month, these would have rooted by April, and would have been growing while the plants from layers were flowering, and be coming into bloom as they were going out.

We cannot know too much about such a fine flower as the Carnation; therefore it is well to experiment in various ways. I am trying experiments as regards striking them, with the aid of modern conveniences, about which I hope to have more to say another time. I am doing so because whilst admitting that layering is at once expeditious and fairly certain, yet sometimes strong plants flower so freely that shoots for layering cannot be obtained. I believe if we can strike cuttings in autumn and grow the plants on in the nursery through the next summer, they will make fine strong stuff to go out early in autumn. Had we not found out the contrary, it might have been imagined that the Carnation blooms would have rotted rather than opened in the wet weather which usually characterises the last few months of the year. But the flowers do open and they do not fade so soon as beneath a scorching summer sun. With Miss Joliffe Carnation under glass in different batches it is possible to have flowers the whole year round, and in the open air we may yet have Carnations from June till the end of the year.

A. H.

SHORT NOTES.—FLOWER.

Anemone palmata alba.—This is a very pretty hardy plant and well worth growing. I bought a few roots about three years ago, and planted them in a bed among some English Irises in a rather dry position. This seems to have suited the Anemone, as the roots have grown stronger each year. In "Alpine Flowers" the height of the type is given as from 6 inches to 8 inches, but last spring the white variety grew fully 18 inches.—E. BUTTS, *Leigham Court, Streatham Hill*.

Old Geraniums.—Many, especially amateurs, are always anxious to save some of their old Geraniums for another season, but frequent failures occur in this for the simple reason that the plants are not lifted and protected before being injured by frost. As a rule it is labour in vain to attempt to winter them after the ends of the shoots have been softened by frost, but if taken in when these are quite sound the majority of them may be kept good throughout the winter with little trouble.—M.

Funkia grandiflora.—"A. H." in THE GARDEN, October 26 (p. 383), appears to have difficulty in blooming *Funkia grandiflora*. Has he tried it on a

the fact of this Carnation being then in full flower. Now, thanks to the kindness of the Rev. J. Jacquet in giving me cuttings, and to his gardener, Mr. Hadlow, for giving me the origin of the Carnation and the treatment which brings about such unique results, some interesting facts are brought to light which may have an important bearing upon open-air Carnation culture.

Yellow-flowered Carnations are generally considered somewhat tender and not at all satisfactory in the open air, but here we have a yellow Carnation which is not only hardy and vigorous, but which actually blooms in winter; therefore, we cannot but agree with what Mr. Hadlow claims, namely, that he has "raised a perfectly hardy and vigorous, free-flowering winter Carnation," for it is one of five others raised by him in France and brought to England. In colour it is a soft canary-yellow, and there is a faint suspicion, only seen on close observation, of pink on the edges of some of the petals, and insufficient to detract from the colour of the flower. Mr. Hadlow says that some who have seen it have called it *Pride of Penshurst*,

low mound of rather moist, light loam in full sun? It blooms well under these conditions in our Wisley garden, and the buds come out well in water. I should be much obliged if any of your correspondents could suggest a means of circumventing water rats. Our *Aponogeton distachyon* (Cape Pondweed) was in beauty, when a rat of the river sent rats up to the ponds, and they have eaten a great many of the flowers off.—(GEORGE F. WILSON, *Heatherbank, Weybridge.*)

FLOWER GARDEN NOTES.

FLOWER GARDENING—A RETROSPECT.—Devices worked out with plants have, it is to be hoped, disappeared for ever, and now flowers and fine foliage are admired for their own sake. We are now better able to appreciate the quieter beauty afforded by mixtures of various species of plants. Thus a decided advance has been made in the direction of what we may call natural flower gardening, *i.e.*, hardy flowers in clumps, groups, or large beds supplemented in summer by *Pelargoniums*, *Petunias*, *Heliotropes*, and *Fuchsias*. But good as this phase of flower gardening undoubtedly is, what a poor affair the art would become were this to be the only phase, and, happily, that is not likely to occur in our day. Good flower gardening, in my opinion, will never prevail so long as there is so large a lack of originality. What I mean is, that we copy one another to such an extent that it is impossible to obtain that variety in gardens that we should have were each resolved to strike out a line of his own, both as to kinds of plants and mode of arranging them. Of course, no one will deny but that of late years flower gardening has made rapid strides, but some things are neglected. The *Tulips* of forty years ago, *Ranunculuses* of a later period, the grand beds of *Hepaticas* that one admired as a boy, the lines of *Gentiana acaulis* that we used to see everywhere, and the grand Indian *Pinks* and *Sweet Williams* now but little grown, all show neglect. The past season has essentially been one of flowers. We have heard little or nothing about novelties. The introduction of *Fuchsias* into the bedding arrangements of the parks cannot possibly be classed as anything novel, because they have for years been similarly used in private gardens and with excellent effect. I can personally vouch for their popularity, and the remarks of approval made on them show a growing taste for the beautiful rather than the gaudy. Thus the introduction of *Fuchsias* into the public parks is a step in the right direction, and the danger now is that we may get too much of a good thing. A few specimen plants in sheltered nooks and on the turf are all desirable by way of adding to the variety of lawn plants, but to place them at every turn in suitable and most unsuitable spots will soon end in the general repudiation of them as bedding plants. The form in which they show to the greatest advantage is when planted thinly, each plant having full room for development, over the entire space of a large bed with an undergrowth of white or light blue *Violas*, pink *Geraniums*, or *Mesembryanthemum cordifolium variegatum*.

TUBEROUS BEGONIAS.—These seem to have done well everywhere, and thus have asserted their right to be included amongst the best of summer bedding plants. Like *Fuchsias*, they look best grouped in beds, yet sufficiently apart for each plant to be free of its neighbour, and this, of course, necessitates undergrowth plants, and I have neither seen nor myself used any plant that seemed to harmonise so well with the *Begonias* as the grey *Sedum glaucum*. A groundwork of blue *Lobelia* I once tried, but it was a failure. White *Lobelia* would no doubt be better. Single and Cactus *Dahlias* are another feature of the past summer. It is true the plants flower late and are the first to succumb to frost. But knowing this, it is a part of our duty to strive to mend matters, and we can do it. Early propagation and growing the plants on without check till planting out time will always end in early flowering, and the safety of the flowers in autumn for the longest period can be secured by planting in the most elevated positions. There is a striking proof of the correctness of this opinion here. On this 31st day of October

the *Dahlias* on high ground are still in good flower, and in low-lying places only a mile off they were killed to the ground on the morning of the 17th of September, quite a fortnight earlier than in the majority of seasons. But, apart from this defect, which in reality is but what happens to all tender flower garden plants, decorative varieties of *Dahlias* deserve the high position they have held in the embellishment of flower gardening. The season, too, has been remarkable for the revived interest taken in respect of seedling flowers. I may instance the grand masses of *Petunias* that have been seen here and there, also of that once favourite, but long neglected plant the *Verbena*, and the numerous places in which one has seen *Phlox Drummondii* holding a conspicuous position. In respect of hardy flowers, no plants have gained more, if as much in popularity as herbaceous *Pæonies*. The spring was favourable to their flowering well, there being no frost to injure the buds before they had expanded, as not unfrequently happens if the plants are unprotected. Whilst the plants were in bloom I had more questions asked as to their cultivation than about all other hardy plants put together. The sweet scent of many of the varieties is not the least of the merits they possess. They are moisture-loving plants, and therefore, if the soil of the garden is of a light porous description, they must either have several drenchings during the summer or be kept heavily mulched with manure to prevent evaporation of moisture. They are most impatient of removal, and once they are planted, if the soil is good they should be left alone for years. Any offsets needed for increase of stock may, by laying bare the roots on one side, be cut clean off with a sharp edging iron. The stems are now matured, and cutting may be done now, and the pieces planted in permanent positions at once. *Pyrethrums* afford another example of flower gardening progress in respect of hardy flowers. A short while ago they were only to be seen in a very few gardens; now the rule has become the exception, and both single and double kinds are raised to their right position. The single kinds are to be preferred for cut flowers, but as border flowers the double varieties make the finest show. There are many named kinds, but they really come so fine from seed that naming ought to be discontinued. Other plants that have lately come to be regarded as indispensable in all good gardens are the several classes of *Irises* and *Lilies*. It is no exaggeration to say that where one plant of either of these was grown eight or ten years ago there are a hundred now, and of the last plants I shall name, that of summer and autumn flowering *Chrysanthemums*, the increase is still greater. They furnish flowers at a season when they are greatly wanted.

W. WILDSMITH.

Rock Knot-weed (*Polygonum vacciniifolium*).—This little creeping Knot-weed is one of the brightest of all rockwork plants at the present season. The slender trailing stems are plentifully furnished with neat, deep-coloured leaves, and studded with dense spikes of bright rosy-pink blossoms that remain in perfection some time, especially if not damaged by heavy rains. It is not particular as to soil and situation, though a moderate amount of peat is preferable, and it must not be dried up during the summer months. Perhaps it is seen to the greatest advantage when falling over the face of a rock, but I have also seen it used as a carpeting to some *Rhododendron* beds, where it grew luxuriantly. This Knot-weed is a native of the Himalayas, and quite hardy here.—H. P.

Spring-flowering bulbs.—There are several sorts of these so cheap as to be within reach of all, and they should be largely used by all who have gardens to adorn. Very pretty and pleasing effects may be produced by planting some of the kinds amongst the Grass under deciduous trees, as in such places *Crocuses*, winter *Aconites*, *Snowdrops*, *Squills*, *Dog's-tooth Violets*, *Chionodoxa*, and others look quite at home, especially in cases where the trees are on raised ground, as then the flowers show off to the greatest advantage. All that is

necessary in the planting is just to dibble the bulbs in and to fill up the holes with light rich soil, putting them in in patches here and there, so as to make them look as natural as possible. By leaving them to make their growth and ripen off, the bulbs will become established and come up from year to year.—S. D.

TREES AND SHRUBS.

THE MEDLAR.

(*MESPILUS GERMANICA*.)

JUST now in the lake wood at Holwood few trees have a more ornamental appearance or associate so nicely and harmoniously with the *Beeches* and *Pines* as does the common Medlar. For the sake of its unusually vivid autumnal tints this tree is worth a far greater share of attention than it has hitherto received, while its fine ample leaves and great wealth of showy white flowers render it one of the most attractive of spring-flowering subjects. That it is a neglected tree few persons who take an interest in our woodland occupants will deny, for few indeed are the specimens one meets with in our English parks and grounds, unless here and there a single tree only valued for the sake of its fruit. Planted here in rather stiff soil along the lake margins, and in company with drooping *Willows* and *Silver Birches*, the Medlar is a most distinct and handsome low-growing tree, the careless mode of growth—for it is destitute of all stiffness or formality—and somewhat pendulous branches rendering it quite distinct in general contour from any other tree I can call to mind.

During summer the leaves are of a deep and distinct green, but towards the end of autumn they turn to a russety brown, and at that time, with the wealth of fruit and long calyces which accompany these, the Medlar is about as distinct and pretty a tree as could well be desired. Then it is one of those trees that requires neither care nor attention, for if once planted in any soil of fairly good quality it grows apace, and soon forms a graceful, well-rounded big bush or small tree of from 20 feet to 30 feet in height, and half as much, or perhaps more, in spread of branches. It seems to me that the Medlar delights to grow in a damp situation, or at least where its roots are within reach of water; certainly the healthiest looking specimens and those that produce the greatest abundance of fruit are growing under these conditions.

In the last three seasons I have noted how plentifully the fruit is produced on such Medlars as grow on the banks of the lakes when compared with those on higher ground in the same woodland.

SMITH'S MEDLAR (*M. Smithi*) can hardly be placed on an equal footing with the foregoing as an ornamental tree, but for all that it is well worthy of attention. In appearance it greatly resembles one of the large-flowering *Hawthorns*, but the individual blooms are of better substance and not so freely produced. Here it forms a well-branched, small-growing tree of neat proportions, and flowers freely enough during early summer, the individual blooms being each fully half-an-inch in diameter and pure white. We have it doing well where the soil is largely composed of peat resting on rough gravel.

Both these Medlars should, in my opinion, receive a greater share of attention than they do from those who have the beautifying of parks and woods under their supervision. Certainly they require not one half of the coddling and attention that some of our more commonly cultivated and not half so ornamental trees must have bestowed upon them before a healthy and thriving condition is brought about. They

bear exposure well, do not suffer from the severest of English winters, and are as easily cultivated as a Willow or a Beam tree. The fruit, too, is not without its value, another point of consideration in the selection of ornamental flowering trees.

An isolated specimen of either of the above Medlars, if planted in a conspicuous spot on the lawn, will always be an object of admiration, for from the time the young leaves expand and the showy flowers appear, and through the fruiting season until clad in its autumn garb of russet-brown, the Medlar can well hold its own.

Holwood.

A. D. WEBSTER.

AUTUMN TINTS.

FORTUNATELY, notwithstanding the vicissitudes of fortune and the caprices of taste, there are yet a good number of native trees left. The rage for exotics and Conifers has also well-nigh burned itself out. It was the fashion at one time for planters to darken landscapes with Conifers without sense or reason. The family—not their fitness—passed them in. That sombre mania has passed, and has left hosts of dark starveling skeletons behind it; and now our native deciduous trees have once more a fair chance of assuming their proper place, and asserting their legitimate power, in avenue and glade, park and landscape.

As to avenues, who ever saw an effective avenue of Conifers? The best ever seen by the writer have been of Spruce and Silver or Scotch Firs. But as to Araucarias, Wellingtonias, Cryptomerias, what ragged regiments and incongruous battalions they form contrasted with Limes, Chestnuts, Beeches, Planes, Sycamores, Elms, Oaks, Ashes, or even Birches, Hornbeams, Maples, Apples, Pears, Cherries, and Plums!

And then, as to autumnal tints in Conifers, they may be described as *nil*. In the autumn and winter the majority of them sink down to a dead level uniformity of verdure, as if fearful to disturb by any shade or dash of brilliancy the leaden dullness of the earth and sky.

True, there are the cones of Conifers and the coral berries of the Yew; but beyond these variations a dead dense canopy of green needles shuts out the light and air and enshrouds the landscape in semi-darkness. How widely different the autumnal and winter dress and undress of our native deciduous trees! No sooner do the chills of autumntide lower the temperature of the air than the leaves are lit up with the most brilliant admixture of brown, crimson, and gold. Poets and philosophers have disputed over the question as to which of the seasons of the year is the most beautiful. Some have claimed spring; others autumn; more perhaps have answered, both. But the palm rests with the autumntide. Those glowing masses, patches, and spots of colouring are so warm, rich, and full of mellow beauty. The very air of autumn days seems made on purpose to reveal them in all their depth and fulness, delicacy and richness of colouring. The air is so pure, so transparent, the sun without spot or cloud, the gentle breezes just enough to give that measure of motion most favourable to the perfect display of their beauty. The feeling, too, that it is passing away even while we gaze upon it adds the finishing touch and zest to our enjoyment.

Then the form of the tints of autumn is infinitely varied. It is not only that the leaves differ in size, form, and colour, though that is true, but see how great patches of gold crown the yet wider masses of verdure on the same Elm tree. Here a huge branch or series of branches shining like burnished gold in the setting sun, whilst all the tree beside is yet green. Few trees manifest this tendency of mellowing into autumnal tints piecemeal like the Elm, but almost each has its own mode of fading, and develops its own distinctive beauty in the process. And when the last leaf has fallen, a wonderful network of beauty in their marvellous ramification of twigs and branchlets remains; the bald bare trees are, shall we call them, skeletonised beauties. But when these, and especially trees of

such delicately ramified sorts as Elms and Birches, are clothed with heavy dews, fogs, and hoar-frosts, who can refrain from admiring their exquisite beauty?—D. T. F.

—The fall of the leaf now so generally in progress serves to remind us of the autumn in a very prosaic way, and many gardeners are just now more troubled about the keeping of the ground beneath the trees tidy than with the colouration shown by the leafage. To realise the beauty thus so lavishly furnished, we must literally lift our eyes from earth to heaven, that is, overlook the earth's carpet of leafage and all the work and worry incidental to the clearing of the same, and allow the vision to rest only on that which is heavenward—the masses of foliage still borne aloft by trees and shrubs in every direction. Then in realising how varied the hue and how diverse the form of leafage, it is needful to have a wide area of woodland lying out before the eye, and thus discern to the full how lavish Nature is this season at least in dyeing the trees' clothing with wondrously varied and glorious tints. We had no such colouring last autumn; the season had been too cold and wet to create the natural tints of the season. We had no such show in the autumn preceding that, because the season had been so hot and dry, that the leaves generally withered on the trees rather than went gradually to their death. The past season has been one affording plenty of ripening heat and plenty of root moisture, and thus is now presented one of the most glorious of autumnal seasons we have had for several years. Our noblest of deciduous trees present effects rarely seen in any previous autumn; simultaneously the Oaks are clothed in a rich russet brown, the Elms in straw yellow, the Chestnuts are of rich golden brown, and the Beech foliage glistens in the sunlight like cloth of gold. The tints vary in life and colour as the trees stand out boldly or are somewhat retiring amongst their fellows, or are influenced by the alternations of light and shade which the passing clouds cause to flit over the landscape. Sometimes the whole scene is aglow with life, lighting up the foliage as with fire; at others, the colour is subdued and softened by the passing shadows. Here and there, where a Liquidambar or a Maple, or one of the too little grown American Oaks stands, there is found a big patch of blood-crimson. Perhaps it is because we too seldom get what is so generally known as an Indian summer that we have planted so little for autumn foliage effects. Probably few persons in planting regard the production of autumn tints as within the range of the planter. The summer leafage is of long duration, and the summer effects must have first consideration; but, none the less, many of our most richly autumn-tinted trees and shrubs will give some of the most pleasing of summer leafage if properly planted. Many of the trees with silvery leaves shed their foliage early and abruptly in the autumn. They are of no service. The nobler the leafage, very often the more pleasing the autumn effects, as may be found in the fine foliage of the Plane, the Tulip Tree, and the Catalpa, all of pale soft yellows, yet very pleasing, indeed, amidst the deeper tints so lavishly shown in smaller-leaved trees. When we want truly glowing crimson and heavy red tints, we must turn in other directions, and it was a very happy thought on the part of Messrs. Jas. Veitch and Sons to send to the late meeting of the Royal Horticultural Society a collection of deciduous leafage, varied in form and colour, from their Coombe Wood Nurseries. The various groups of leaves were laid flat on green baize. Had they been placed on a sloping table, covered with dull white paper or cloths, the effect would have been much more striking, but as it was, and under the horrid gloom of the Drill Hall, which kills beauty and colour, the effect was so pleasing as to command admiration. Of these the Japanese Acers stood out with particular effect for their beauty, both in form and colour—*palmarum sanguineum*, leaves intense blood-red; *palmarum septemlobum elegans*, bright red, finely-cut edges; *palmatifidum*, reddish yellow, very fine Fern-like leafage; *rubrum*, intensely deep red; and *platanoides digitatum*, coppery yellow. Bright

clear yellows were found in *Populus fastigiata* and *candicans nova*, *Philadelphus grandiflorus speciosissimus*, the Tulip Tree and its variegated variety, all fine foliage. The Catalpa leaves were of a soft pale yellowish green. *Quercus coccinea* and *laurifolia* were of fine deep colour, the former showing intense rich hue, the latter having coppery-shaded foliage. *Prunus Pissardi*, of a heavy maroon tint, and *Viburnum tomentosum* and *Opulus* gave deep hues very brilliant when lit up with sunlight. Very beautiful indeed, literally aglow with vermillion, were the small leaves of the *Rhus Cotinus*, whilst the Sumachs, especially *typhina* and *Osbecki japonica*, had truly grand leafage. A bushy variety of the *Ampelopsis japonica*, having large oval leaves not unlike those of the Dutchman's Pipe, gave very beautiful colouring, some leaves where exposed to the light being of a rich blood-red, and other portions of a clear yellow. The collection, which included several other things, afforded some insight into the colour beauty found at this time of the year in a nursery. This beauty could be widely distributed did planters know of the lovely autumn foliaged trees at their disposal, or make the development of decaying foliage coloration one of the prime objects in planting trees and shrubs, especially where soil and climate favour colour-production.—A. D.

—The Oak, Elm, Sycamore, Beech, Chestnut, Poplar, Lime, and Maple are the trees that have been and still are lighting up the whole countryside with a warm glow of colour. Throughout the year the wealth of fine foliage upon all trees has been a matter of general comment, and as the fresh green tints of spring melted into the fuller and deeper greens of summer, so summer's richness has been lost in the autumn maturity, which is the zenith of leaf beauty. The planter of the future, if trained on broad lines, will take a lesson from these autumn landscapes, and give us some of their beauty in the garden or park. Why should we fill our gardens with Yew, Box, Laurel, Spruce, Scotch Fir, Cypress, or Arbor-vite, confining ourselves almost entirely to Evergreens to the exclusion of deciduous trees and flowering shrubs, which by the budding in spring, flowering in summer, and by the tints of their autumn foliage give greater interest and variety? Evergreens about our gardens become monotonous. We need them for shelter and for enlivening the dreary winter aspect of the landscape, but we ought to be moderate in their use. In the garden we should have effects characteristic of the seasons, and it is possible to obtain these by due consideration of what subjects we use and how we use them when planting a garden. To plant a garden well requires much care and thought. Azaleas are quite vivid in their many-tinted autumn dress and their proximity to Rhododendrons, whilst in itself quite right would materially enliven the all too sombre present aspect of large plantations of this valuable shrub. I lately admired the pretty effect of several fine spreading bushes of the Venetian Sumachs growing in front of some tall American Arbor-vites. They were glowing masses of crimson, and hardly less beautiful than when in summer they were graceful masses of purplish hairy plumes. If those who have the opportunity will observe and chronicle for our benefit the names of those shrubs that are especially beautiful in their autumn dress, I am sure quite a long list will be compiled, and with some things there is other beauty besides that of leaves, for who in the dead of winter can see and not admire broad masses of the red and yellow-barked Willows or the crimson-barked Dogwood? These things are never more beautiful in summer; moreover, in the naked stems and branches of trees and shrubs we often discern a beauty of form that is entirely hidden by the summer mantle of leaves.—A.

—The present season is an exceptionally good one for studying the various tints of autumn foliage, as we have not yet (October 26) experienced frost of sufficient severity to bring the leaves down quickly. I cannot call to mind any season in which the various glades and vistas of the pleasure ground presented finer or more varied features than the

present one, and there is no doubt that the planters of bygone days had an eye to the beauty of the autumn foliage. As far as their autumn garb is concerned, our native trees, with very few exceptions, are far more beautiful than the exotics. The latter are principally represented by two classes, those whose decaying leaves are unattractive, and those apparently more tender trees which shed nearly the whole of their foliage with the first frost. Noticing these facts, particularly in a walk through the pleasure ground, I thought they were worth noting for intending planters, for the grand features of the autumn landscape are nearly all the result of the judicious mixture of native trees. I noticed a few exceptions, one in which the Sugar Maple, just now a mass of bright gold, figured prominently; and another, the result of a background of the common Plane for *Pyrus Sorbus*. This *Pyrus* is a very handsome tree in the decay of its leaf, not unlike the brighter forms of Beech at a distance, but of a clearer and more pronounced colour as one approaches it closely. Of the two varieties of Plane, *orientalis* is considerably the later in shedding its leaves. *Ginkgo biloba* is not an attractive autumn tree, the foliage seldom assuming the gold or brown of autumn, but falling whilst of a dingy green hue. In exceptionally mild seasons we get the golden shade on the leaves, but the latter quickly fall after this change. Another ugly autumn leaf is that of the Cucumber tree—a dirty brown. Two very quick-shedding exotic trees are *Gymnocladus canadensis* and *Pterocarya caucasica*. I have seen both these quite bare by the beginning of October after a September frost. Virginia furnishes us with a couple of fine subjects for the autumn landscape in the shape of the Fringe Tree and the Virginian Bay (*Laurus Sassafra*). A fine, compact specimen of the latter, some 30 feet high, is here just now very handsome. About the latest of exotic trees is the deciduous Cypress, and of shrubs the well-known *Wistaria chinensis*. The Beech is indeed many-hued this autumn, from quite a golden shade to those glorious masses of reddish brown that one sees to perfection in the southern slope of the downs running from Dorking to here and Albury. There is a marked difference between the contemplation of the picturesque side of foliage and the consideration of its practical utility. One thing is certain, that from a gardener's point of view the autumn leaves are likely to prove a nuisance for another two months. There will be an abundance of work in large pleasure grounds until Christmas, for one is obliged to go over the same ground many times—in walks, to prevent the accumulation of a mass of decayed matter, and in lawns, to separate the chaff from the wheat. Thus, whilst the Horse Chestnut, Lime, Plane, Sycamore, and most of the exotics either find their way to the rubbish heap or amongst the undergrowth, to swell the ever-increasing depth of leaf-soil, the leaves of firmer and more enduring texture are carefully carted to some large heap, to assist by-and-by in the growth of early forced produce. The Oak seems little inclined as yet to put on its autumn dress.—E. BURRELL, *Claremont*.

—I noted lately two specially beautiful scenes in foliage colouring. The first was at Castle Hill, where in the afternoon sunlight two large Beech trees, covered with golden-brown foliage, were seen with the sun shining on them and lighting them up as with fire through some moderately-branched Scotch Firs. The foreground of deep green with the background of brilliant golden-brown proved to be the most beautiful of any similar effects I have ever seen. At The Dell Mr. Ballantine kindly took me over to the back of the mansion that I might see the wondrous wealth of colouring found in the noble Beeches which border the gorge in Windsor Great Park. The scene was indeed a lovely one. The green herbage in its hollowed outline beneath, on which numerous deer were placidly feeding, the huge castle in the distance, the chatter of thousands of starlings in the branches overhead, with the declining sunshine lighting up the golden leafage, formed a picture which no artist could faithfully represent, or, if attempted, would probably be charged with exaggeration. It was a scene in which Nature had done most, the art of man little

beyond perhaps the planting of the trees and the erection of the monster building in the distance. It would be difficult to find Nature pure and simple and gardening in its highest aspects more singularly contrasted than is to be seen in the back and front views from Baron Schröder's delightful residence.—D.

—At this season, when flowers become fewer, a bit of colour in the garden is valuable. My friend Mr. McIntosh advised me to plant *Vaccinium pennsylvanicum* for the beauty of the autumn tints of its leaves. When getting it from Woking, Mr. Waterer recommended, in addition, *Andromeda arborea* and *A. Mariana*. All these are now very beautiful. We have Dutch Azaleas and Liquidambar near them, but their colours are much the brightest.—G. F. WILSON, *Heatherbank, Weybridge*.

Ulmus viminalis variegata.—This is one of the best of variegated-leaved trees, for the leaves do not become seared by the sun, but remain bright and cheerful till they drop. By Loudon, *U. viminalis* is considered a variety of our English Elm (*U. campestris*), but it is easily recognised by its small leaves and numerous twig-like branches. In the variety *variegata* the major portion of the leaf is of a greyish green tint, irregularly edged with white. Occasionally a green shoot will make its appearance, but in a general way the variegation is very constant and not sickly. Under the propagator's hands in spring many variegated trees and shrubs are very beautiful, but in the open ground by August they wear a totally different aspect.—T.

Rhododendrons.—"I expect one of the finest blooms on Rhododendrons next year we have ever had," said Mr. Ballantine at The Dell the other day, and the promise of bloom on the thousands of plants there growing fully justifies the remark. Not only are the buds plentiful, but they are very fine, whilst the foliage generally is good. The collection at The Dell is a wonderfully fine one and includes all the best varieties. At The Dell there is no im-muring of beauty thus obtained, as beauty of another kind may be imprisoned within stone walls, or pictures and statuary of the most valuable kind are excluded from the common gaze. There seems to be singular pleasure found in showing to all comers the treasures at The Dell, whether found in the beautiful Conifers and hardy ornamental shrubs and Rhododendrons in the pleasure grounds, or in the astonishing and varied collection of Orchids. If any fault could be found with the pleasure grounds next June, it would be in the brilliant glow of colour which will be seen. But all the same, Rhododendrons do not all bloom at one time. They begin even with the earliest months of the year, and thus a succession of glorious hues can be had for several months, the final scene of brilliant colouring being gradually led up to until midsummer closes the beauty for the year.—A. D.

SHORT NOTE.—TREES AND SHRUBS.

Prunus Pissardi.—I quite agree with all that "R. D." says of the rich colouring of the leaves of this plant from what I saw of it at the Paris Exhibition. Whether as an isolated specimen or in larger masses, it was by far the most brilliant and effective of all the foliaged plants in the grounds. Without doubt one of the most telling groups in that gathering of effective shrubs and trees of all sorts was a mass of fifty or more of this striking plant.—D. T. F.

The American Cranberry (*Vaccinium macrocarpon*) is a highly ornamental plant for rockeries, &c. The forms cultivated in America and Canada, however, have much larger fruit than the one com-

monly seen in our gardens. The large fruits are doubtless the result of cultivation, and as they are much in demand for making sauce, we will no doubt see them larger still. Even in a small-fruited state, it will take rank amongst the best of our autumn-berried plants, the bright fruit, the handsome bronzed leaves, and purple red wiry stems making a very attractive group.

STOVE AND GREENHOUSE.

WINTER-FLOWERING BEGONIAS.

In common with the tuberous-rooted section of Begonias that flower during the summer months, those that bloom throughout the autumn and winter have within the last few years become far more popular than hitherto, and some of our most prominent hybridists have devoted their attention to the production of new varieties. Among the older winter-flowering Begonias may be mentioned several of the original species and hybrids raised therefrom, most of which are more or less of a shrubby character, while recently the curious peltate leaved *B. socotrana* and some of the tuberous-rooted class have been



Begonia weltoniensis.

successfully employed in the production of the newer hybrids. Of varieties not springing from either of these two just mentioned and of original species valuable for their winter-blooming qualities may be especially mentioned—

B. ASCOTENSIS.—A very free-growing kind, producing numerous stout stems, which are terminated by large drooping clusters of bright red blossoms. This variety will also be found very useful for the flower garden during the summer months, and if the plants are carefully lifted, potted, and placed in a warm house, they will continue to flower freely up till Christmas.

B. CARRIERI.—A hybrid between *B. semperflorens* and *B. Schmidtii*, combining to a great extent the dwarf branching character of the last with the foliage and flowers of *semperflorens*. It is of Continental origin, and was first brought into general notice by Messrs. Cannell. In taking cuttings of this variety, they must be always formed of the growing, not flowering shoots, as the latter, if struck, will still continue to flower and cannot then be induced to grow freely.

B. CORALLINA.—This is widely removed from either of the preceding, being a tall-growing, woody-stemmed species, with the under sides of the leaves purple, and bearing long pendent racemes of bright coral-red blossoms. It may be induced to flower at almost any season of the year, and is a very distinct and beautiful species.

B. DIGSWELLIANA.—This pretty pink-flowered variety is said to be the result of a cross between *B. odorata* and *B. fuchsioides*. It certainly shows a great affinity to the last-named, but the habit of the plant is dwarfer, the leaves somewhat larger, while the flowers are not so richly coloured.

B. ERECTA MULTIFLORA.—From a foliage point of view alone this is a very desirable Begonia, the large oblique leaves being of a deep reddish-bronze colour, while the rich pink blossoms are borne for months together.

B. FUCHSIODES, one of the very finest of all

clusters and of a very pleasing shade of deep pink. As a rule, this does not commence to flower till after Christmas, but a succession is then kept up for three months or thereabouts.

B. LYNCHIANA.—This was figured in Vol. XXIV. of THE GARDEN under the name of *B. Roezli*, which name, however, had been previously bestowed upon another species. *B. Lynchiana* is a tall, sparsely branched plant, with very large heads of bright reddish crimson-coloured blossoms. This flowers continuously throughout the winter, and the blooms last a long time when cut.

B. MANICATA.—The large branching spikes of small pinkish blossoms render this species, if less showy than most of the others, still very ornamental, especially where arranged with other plants. Of this there is a variety whose leaves are spotted with yellow after the manner of *Farfugium grande*, but the variegation is not very constant.

B. NITIDA.—This species, with its deep shiny green leaves and clusters of white or pink sweet-scented blossoms, is too well known to need any detailed description, and the same remark applies to

B. ODORATA with flowers somewhat in the way of, but smaller than those of *B. nitida*. They are also more highly fragrant. This species is also known under the name of *B. suaveolens*.

B. SEMPERFLORENS.—The specific name of this species is well bestowed, for it will bloom continuously throughout the year. In the form most commonly met with the flowers are white tinged more or less with pink, but in some the blooms are pure white, while in others they are very richly tinted. One of the very best of winter-flowering Begonias is usually classed as a variety of *B. semperflorens* under the cumbersome name of *B. semperflorens gigantea carminea*. It is of Continental origin, and when first sent out was announced as a cross between *B. Lynchiana* (*Roezli*) and *B. semperflorens*. The entire plant, however, bears a far greater resemblance to *B. Lynchiana* than to its other reputed parent, the principal difference being that it is less liable to run up naked at the base

than *B. Lynchiana*, which often does not break out freely even if pinched back during its earlier stages, while this can be induced to form quite a bushy plant. Other kinds known as *B. gigantea rosea* and *B. gigantea elegans* seem to differ but little from that above described.

B. WELTONIENSIS is an old hybrid variety raised by Colonel Trevor Clark, its parents being the white-flowered *B. Dregei* and the peculiar orange-salmon *B. Sutherlandi*. The neat bushy habit of this plant, combined with its handsome foliage and the profusion in which its pretty pink blossoms are borne, render it very popular. Not only can this be induced to flower during the winter, but it is also a first-rate Begonia for summer blooming and a good bedding plant.

B. SCHABEFFIANA is a recent introduction from Brazil, the general aspect of the plant being well

shown in the accompanying figure. The flowers of this are pale pink covered on the exterior with reddish hairs.

The advent of the curious, yet beautiful *B. socotrana* caused quite a sensation when it first flowered in this country, and in the hands of the hybridist it has since given birth to a totally distinct race of winter-flowering Begonias. One of these, *B. John Heal*, was most truthfully shown in the coloured plate issued with THE GARDEN for March 9 of the current year. It was obtained by crossing *B. socotrana* with pollen from one of the tuberous-rooted South American section. The rich rosy-carmine blossoms of this plant are borne with the greatest freedom during the autumn and winter months. It is easily increased by means of cuttings, and so free-flowering is it, that even little plants in 2½-inch pots will bloom freely. This Begonia first flowered in 1885, and was awarded a first-class certificate at Kensington in that year. A second of this section was *B. Adonis*, which in general appearance more nearly resembles the tuberous-rooted class. This resulted from fertilising a large-flowered tuberous variety with pollen from John Heal. The blooms are



Begonia Lynchiana.



Begonia Scharfiana.

shrubby Begonias, is seen at its best when employed as a pillar plant in an intermediate structure. In this way it forms quite a column of rich deep green foliage, while the very bright scarlet, coral-like blossoms are freely borne at all seasons of the year.

B. GLOIRE DE SCEAUX.—This was announced by Messrs. Thibaut and Keteleer as the result of a cross between *B. socotrana* and *B. sub-peltata*, but it certainly shows little, if any relationship to *B. socotrana*, though for flowering during the first three months of the year it is unsurpassed. It is a bold, free-growing variety, well worth cultivation for its foliage alone, which is of a dark metallic green tint. Where allowed space for its full development it naturally forms a pyramidal-shaped specimen that retains its leaves to the base of the plant. The flowers are large, borne in good-sized

each about 3 inches in diameter and of a rich bright pink colour. A third of the same section is *Winter Gem*, which resulted from crossing the flowers of *B. socotrana* with pollen from a crimson-flowered Begonia of the tuberous-rooted class. It is more compact than *B. socotrana*, and the flowers are almost crimson in colour. The culture of *B. socotrana* and the above-mentioned hybrids is different from that needed by any other class of Begonias, as they go to rest after flowering and remain dormant till past midsummer. Then they should be shaken out of the soil and repotted, when, favourably situated, they will commence to grow and flower during the autumn and winter.

For quite a different race of Begonias that flower at this season we are indebted to M. Lemoine, of Nancy, who has succeeded in crossing the large white-flowered *B. octopetala* with the best of the tuberous-rooted class. This section of Begonias is characterised by a bold stately habit, flower-stems a couple of feet high, while the flowers, each of which attains a diameter of 3 inches or more, are composed of six or eight large oval petals, somewhat in the way of an *Anemone*. In colour these varieties range from white to scarlet, and produce a beautiful show of blooms at a season when the brightness of the tuberous Begonias is over. Of these, M. Lemoine an-

nounced three for distribution last spring, viz., Anemone, white; Fleur d'Automne, satin rose; and Ville de Nancy, magenta. H. P.

VIOLETS UNDER GLASS.

DURING the last eight years immense strides have been made in Violet culture under glass, a frame or frames being devoted to them in the majority of comparatively small gardens, while to meet the demands in larger places whole rows of frames or brick pits are called into requisition. Pot culture is also attempted in numerous instances, and altogether it is hardly possible to estimate the quantity of Violets now annually grown. Much of this very satisfactory state of affairs is largely due to the introduction of Marie Louise or New York (for the two are very much mixed), and to these the beautiful Comte de Brazza's White has more recently been added. All of them partake very much of the character of the old Neapolitan, but being of a more robust character and wonderfully free flowering, they are naturally, easier to cultivate as they are better able to withstand the greatest of all enemies to Violets, viz., red spider in the summer and damp in the winter. Although so many now cultivate one or more of the three first named easily grown varieties, all are by no means uniformly successful with them. Some succeed in rearing a capital lot of plants in the open ground during the summer, only to spoil them under glass during the early part of the winter, over zealousness being not unfrequently the primary cause of failure. Where so many err is in imagining they can hasten or otherwise improve the value of the flowers by keeping them somewhat close and warm, when in reality no greater mistake can well be made. What they really require is an abundance of light and air and protection from severe frosts. If the frames or pits have been properly prepared, these will have been filled with any kind of rough material of a somewhat imperishable character, so as to bring the 9 inches of good loamy soil placed on to the top to within 10 inches of the glass, and in all cases where possible the lights ought to slope rather abruptly to the south. The plants being duly lifted with a fairly large ball of soil about the roots and cleared of all blind runners, or those with no small plant attached, should then be firmly planted all over the bed so as to be well clear of each other. We usually mix a liberal quantity of burnt garden refuse and good leaf soil with the surface compost, and this appears to suit the Violets well. The principal portion at least of the plants ought to be already in their winter or flowering quarters, but unless they are put out in the lights somewhat after the lines just laid down, I would advise that it should yet be done, as it is very certain if the Violets are planted at a much greater distance than 6 inches from the glass they will not long remain in a healthy free-flowering state. Where an extra early supply is needed it may be advisable to afford a portion of the plants a little gentle bottom-heat, such as a mass of decaying leaves would generate, but the plants subjected to this must still have abundance of light and air, and in any case do not long remain in a profitable state. Supposing, however, the plants were well prepared, that is to say, were healthy, well-rooted runners when first put out in May or June and properly attended to afterwards, these would have commenced flowering early in September and at the present time be well furnished with blooms, no forcing, therefore, being necessary. Too much warmth in the atmosphere of a frame or pit soon promotes the growth of leaves rather than flowers, and as the foliage is under such conditions inevitably of a weakly character it is the first to succumb to damp or mildew. Once mildew effects a lodgment in a frame or pit, it quickly spreads, and it is no easy matter to prevent the rapid decay of the majority of plants. Whenever the weather permits, or is all but very wet, foggy, or frosty, the lights ought either to be blocked up alternately at the back and front, or, better still, be drawn clean off, a sturdy growth and abundance of flowers which rainy or bad weather rarely injures being the result. Plants thus treated will also stand a moderate amount of frost, but ought

not, however, to be unduly subjected to this, the wisest plan being to cover the lights with both mats and litter whenever a severe frost is imminent.

Much of the foregoing also applies to Violets in pots. These must not be placed anywhere near hot-water pipes, nor be kept in other than a greenhouse temperature, or otherwise the flowers produced are puny and the plants soon fail. Violets succeed admirably on greenhouse shelves or on the shelves in vineries or Peach houses not being forced. Neither the plants in pots nor those in frames should be allowed to become dry at the roots, and the former ought to have liquid manure occasionally. We sometimes hear a complaint of the flowers being too small, but the remedy is usually in the power of those for whose benefit the Violets are grown. If kept closely gathered at the outset and no respite allowed the blooms have not sufficient time to expand; and I believe I am within the mark in asserting that one-half of the Violets belonging to the Neapolitan or the double-flowering sections generally are picked much too soon or when not more than half grown. Allow the flowers full time to develop, and one bloom will be equal to two or three of those usually seen. This fact ought especially to be noted by those who cultivate double Violets largely for marketing purposes, and should be taken good note of by growers generally. Comte de Brazza's White is considered by some to be much more shy-flowering than the Marie Louise, but such is not the case with me. It is somewhat later, it is true, but that is the only difference, as far as freedom of flowering is concerned, discernible. It is a most valuable addition to the list of winter-flowering plants, and for button-hole purposes its blooms are much superior to those of the coloured varieties. Last winter we had six large lights filled with this Violet, in addition to two long rows on a ridge of added soil in the front of a cool Peach house, and nothing grown here at the same time was more highly valued. W. I. M.

Arum Lilies at Christmas.—The flowers of the Arum Lilies are exceedingly useful for room and church decoration at Christmas. When we kept our plants of them in pots all the year round, we rarely got any of them to bloom at that season, but by planting them out in the open border in summer, lifting and potting them again early in October, allowing them to remain in a cool house for two or three weeks afterwards, and then putting them into a forcing house with a temperature of 65° or 70°, every one of them produces a valuable lot of blossoms by the middle and towards the end of December. Some of our plants are sending up flowers now, but as the blooms are not wanted until Christmas, the forward ones will be kept cool until the end of November.—J. M.

Nerine Fothergilli.—Mr. Ballantine now has this fine old Lily in great form at The Dell. He started with one bulb carried home in his pocket from Mr. Rucker, of Wandsworth, some twenty years ago, and by dint of good cultivation has probably one of the finest lots of it in the kingdom. Some of the clumps, although apparently in about 9-inch pots, consist of from 20 to 25 bulbs. The bulbs form in such case big clumps, sitting out over the pots in the most remarkable way. The secret of success seems to consist in thoroughly ripening the bulbs during the summer; indeed, so hard baked is the soil during the resting period, that only by soaking well in tubs of water can it be re-moistened. As a result, the bulbs bloom profusely and finely in the autumn. Practically the rule is to compel the bulbs to exist in as little pots and soil as possible. The failing to bloom not only Nerines, but many other Cape bulbs habituated to a dry soil arises chiefly from over-potting.—D.

Double white Camellia.—Baron Schroeder may be congratulated on having in his beautiful gardens at The Dell one of the finest outdoor Camellias in the kingdom. This is a monster double white, originally planted perhaps a century ago against a wall, but the wall has long since passed away and the grand old Camellia remains. It is 25 feet broad, about 10 feet high, and some

6 feet to 8 feet through. The face is dense with lustrous dark leafage, and set with tens of thousands of buds, a grand example of what Camellias can do in the open ground when in soil they like. The plant has suffered from frost only once, so far as known. Apart from its blooming powers, the Camellia outdoors forms a grand evergreen shrub.—D.

FUCHSIAS IN AUTUMN.

I WAS greatly interested in "J. C. B.'s" article on this useful subject (page 385). Of his two methods, rooting cuttings in May and pushing them on under stimulating treatment to bloom from August to or through November, and the cutting back of early blooming Fuchsias to force them to bloom a second time throughout the autumn and early winter, I greatly prefer the latter.

For many years I exhibited the same Fuchsia plants twice a year—in June and September. Many of these were fine specimens, each from 6 feet to 9 feet high and 3 feet to 4 feet through. Towards the end of June the Fuchsias were placed in a shady spot in the open air and the whole of the blossoms picked off. After ten days or so the side shoots were cut in, and the leader if need be stopped according to the state of the plants at the time and the size wanted in September.

After stopping and thoroughly cleaning the plants, if thrips or fly had touched them, they were gradually inured to full sunshine outdoors being turned round three times a week so that all parts were duly exposed to an equal share of light and air. All surface-exhausted soil was also carefully removed and a top-dressing of rich compost added. Over this in the case of large-sized plants which were likely to be subjected to a heavy strain, a layer of sheep or cow manure was often placed. The roots were never once allowed to become dry, and as the plants reached the breaking period they were heavily syringed overhead twice or three times a day. This kept the heads cool, greatly facilitated regular breaking, and pushed on growth and bloom rapidly.

About three weeks or a month before the plants were wanted for exhibition they were placed under glass in a cool, airy house, and the second bloom was generally superior to the first. The plants, too, were more dense, compact, and went on blooming until the space was wanted for Chrysanthemums. This mode of treatment was repeated on the same plants for a good many years without injury either to their health or flowering.

Another and different plan was also adopted at times, but certainly not more successfully. All the main features of culture were identical, only some of the plants in 8-inch pots were shifted into 12-inch pots at the end of June or beginning of July. These were treated just the same as the unshifted plants, excepting that they were not top-dressed with either rich compost or manure. These shifted plants mostly made more wood and produced fewer blooms than the unshifted ones, but otherwise they did well and formed fine plants for the following season. D. T. F.

Drizzling Glory Tree (Clerodendron nutans)

—This Glory Tree, of which a coloured plate was given in THE GARDEN, May 5, 1888, is just now unfolding its blossoms. It would appear to have been first grown in this country over sixty years ago, but was lost for many years till Mr. Head obtained it from India. Two great merits possessed by it are the time of the year at which it flowers, and the fact that even small plants will produce a raceme of blossoms. It is very distinct from any of the other Clerodendrons of the same section, for by stopping the plants once or twice quite a bushy specimen can be produced, which, when laden with drooping racemes from 1 foot to 18 inches long, forms a charming plant. The individual blooms are pure white, while the calyx from whence they protrude is reddish, the two distinct colours thus forming a marked contrast. It can be readily increased by means of cuttings of the young growing

shoots put in early in the spring, and besides this root-cuttings are also available for its propagation, but being of such free growth, plenty of shoots are generally available for the purpose.—T.

ALLAMANDAS.

I HAVE read with interest the remarks of "R. D." and "G." (pp. 323 and 324) on these fine stove climbers. In reply to the former, I might state that from my experience of *A. Hendersoni* and *A. Schottii* I have come to the conclusion that there is a slight difference between them; this difference is correctly described by "G." in his remarks. From all points, however, I consider that *A. Hendersoni* has the advantage, and should be chosen in preference to *A. Schottii* by all growers who contemplate their cultivation. *A. Wardleana* is nothing more nor less than *A. Hendersoni* under another name. The young plants of this *Allamanda* which were shown some years ago before the floral committee of the Royal Horticultural Society, when in flower, as *A. Wardleana* were cuttings of *A. Hendersoni* taken from the plant after having set for flower. Striking rapidly under brisk heat, these young plants developed their flower-buds into perfect blossoms, thus flowering in a miniature state. I took these cuttings off the plant myself (and struck them) in order that they might be had in flower at a later period. The exhibitor of *A. Wardleana* saw these cuttings and asked if he could have them; his request being granted, he, under skilful cultivation, exhibited them as before stated, but I believe without gaining the coveted award. *Allamandas* when required to be in flower at any stated period with a tolerable amount of reliability should be stopped about twelve weeks prior to the time. This stopping will produce even breaks, which invariably grow away together and flower at the same time. Thorough exposure to the sun is needed to flower *Allamandas* well; thus grown the blossoms will have far greater powers of endurance than if shaded. The young shoots which push forth at the base of the flower-spike will soon set in their turn when fully exposed, and thus keep up the supply of flowers as the first spikes become exhausted. In order to assist the plants in this continuous bloom, liquid manure should be given at frequent waterings, and when in active growth they should never be allowed to suffer for the want of water. Some of the finest *Allamandas* I ever remember to have seen were grown in a Pine stove (trained in a fan-like form at the back of the Pines) by Mr. T. Page, gardener at Park Hill, Streatham, now some years ago. The growth of these plants and their abundant bloom were simply perfect; no sappy superabundant wood was made, and at the end of the flowering season under such treatment as accorded to the successful cultivation of Pines, their wood was thoroughly matured, thus being well prepared for a prolific break another season. I note that "G." when speaking of insects on *Allamandas*, remarks, "Insects are not fond of *Allamandas*." This may be true of the stronger growing species, but *A. grandiflora* is very liable to be attacked by the mealy bug where that insect plague exists, and if it gains a fair foothold, it will be troublesome to eradicate during the period of growth. Thrips and red spider will be likewise troublesome to this species if not kept in check by a free use of the syringe. In repotting *Allamandas* I advise that the soil be pressed down firmly around the old ball, this greatly tending to produce a more short-jointed growth, and thus keep the plants within more reasonable bounds. Bottom heat is an assistance, no doubt, at the time of re-starting into growth, but even then it is not

absolutely necessary. Later on, with plenty of other warmth, bottom heat is best dispensed with entirely, or otherwise there would be a danger of a too luxuriant growth being made.

J. H.

WORK IN PLANT HOUSES.

GREENHOUSE.—EARLY LARGE FLOWERING PELARGONIUMS.—Nothing should be left undone to get the stock of the early flowering varieties as strong as possible during the latter months of the year. Plants with long-jointed shoots that have been at all drawn through want of sufficient light are all but useless for forcing, as when subjected to heat instead of producing flowers they push growth. Where the plants have been well managed through the summer they will not require much support in the way of sticks and ties, but enough must be used to keep the shoots trained out. Stand the plants close to the glass and let them have air daily. Use a little fire-heat at night when the weather is likely to be frosty, for though it seldom happens that the temperature falls low enough during the present month to freeze anything in an ordinary greenhouse even when no fire is used, yet as the object is to keep the growth moving, it is better not to allow the temperature to fall low.

PELARGONIUMS, LATE BLOOMING VARIETIES.—Plants of the large-flowered later blooming sorts that after being headed down were shaken out and repotted should, if not already in the pots in which they are to flower, be moved into them at once; 8-inch pots are large enough for plants that have attained full specimen size. Drain well and use good turfy loam made rich with rotten manure. Use the potting lath freely, so as to make the soil quite solid; if this is not done, it is useless to expect this section of Pelargoniums to do well. When the material is left loose and open it holds more water than the roots like, the result of which is that they never fill the soil with small feeding fibres. As the shoots advance tie them well out, bringing the strongest ones down to the rims of the pots. By this means the weaker ones that are left more erect will gain strength, and so equalise the whole of the growth.

FANCY PELARGONIUMS.—Any plants that have not yet had their final shift should at once be moved. Treat them in every way as advised for the large-flowered sorts, except that where the specimens are unusually large, they will do with pots a size smaller than those given to the large-flowered sorts. The plants of the different sections under notice should be stood during the winter within 18 inches or 20 inches of the glass in a light house or pit. Give them room enough so that each plant will stand clear of its neighbour. The soil must from now until the spring be kept drier than is requisite for other kinds of soft-wooded plants; if too wet, the shoots always come long-jointed and the leaves too large and gross. During winter, water should not be given to Pelargoniums until the soil is drier than most things would bear. See that the stock is quite free from aphides, which if present soon injure the leaves. Where any trace of the insects is found, the plants should be fumigated two or three times at intervals of six or eight days. When once the stock is quite free from the pest, there is not much likelihood of its again making its appearance until an increase of sun heat makes the aphides more active.

TUBEROUS-ROOTED BEGONIAS.—Plants that were started early and have consequently been a long time in flower will now either have ceased blooming, or the tops will have got into a poor condition. All that is necessary to preserve the tubers is to take them out of the pots and put them for a few days where the little soil that remains on them will get dry, and then store them in the way that is done with Potatoes. In the case of small tubers of double or single varieties that have been struck from cuttings during the past season, it will be as well to allow them to remain in the pots just as they have been growing, laying the pots down on their sides so that water may not reach them until

the time for again starting them into growth comes round.

CAMELLIAS.—Where there is a sufficient stock and the necessary forethought is exercised in getting the plants to make their growth at different times, there is no difficulty in having a succession of flowers all through the autumn, winter, and spring. The plants that made their growth early in spring and were kept in a genial temperature until the buds were well advanced will now give a plentiful supply of flowers. See that the watering is carefully attended to, so that the balls may be kept moist all the way through. The use of manure water when the plants are about to flower, or are flowering, is sometimes recommended, but there is nothing gained by applying stimulants at this time; it is for a short time before the plants begin to make their season's growth and whilst the young wood is in course of formation that I have found manure either in the shape of surface-dressings or in a liquid state do good. Where the plants are well managed and are in a free, vigorous condition, less thinning of the buds is necessary than when they are more or less weakly. The terminal wood-bud that is formed at the extremity of the shoot if left to go on is much more certain to produce flowers than the back buds that have to be depended on when the leading one is removed. When *Camellia* flowers are properly wired, they last nearly, if not quite as long as if attached to a portion of the wood. Plants that are intended to bloom as late in the spring as possible and that have been treated in making their growth with this object should be kept quite cool through the winter, using no more fire-heat than will keep them from being frozen, for though, when the buds are late and backward in autumn, they move very slowly if kept warm, still it has an influence in bringing the bloom on sooner than if the temperature was low.

STOVE.—GARDENIAS.—These are sometimes required all the year round. Where this is the case they tax the skill and resources of the grower to a greater extent than most things, for though there is no difficulty in keeping up a succession during the spring and summer, and even up to the end of autumn, in the dark days of winter the plants cannot readily be induced to open their flowers even where there is the means of giving them plenty of heat, as it not unusually happens that when kept as high as 70° in the night, the buds seem to remain motionless until the return of bright sunshine, the effects of which are immediately apparent. In the absence of direct solar rays it is necessary to give the plants all the light possible. The house or pit in which they are kept through the winter should be of the best construction, and the plants should be raised so that their tops will be close to the roof. In this way there will be little danger of the buds dropping in the manner that sometimes occurs when hard forcing is practised. To further guard against this mishap it is best not to syringe overhead much, if at all; neither should the atmosphere of the house be kept too moist. With the precautions named and a sufficient number of healthy vigorous plants well set with bloom-buds, flowers may be depended on. Where the tops already set with buds were struck some time back, these will now be in the best condition for giving a succession of flowers during the time they are the most difficult to get. In the small pots the plants occupy there will be no difficulty in keeping them near the roof.

NARCISSI.—Where bulbs of the early flowering *Narcissi* were potted at the time advised they will now have made enough roots to bear putting into heat. See that the blanched tops are not exposed to much light before they have had time to attain some of their naturally green colour, as without this the leaves will be small and deformed. If a little bottom heat can be given without the plants being stood too far away from the glass, it will help the bloom on, but when plunging the plants necessitates their being so far from the glass that they do not get the requisite amount of light, it is better to forego the bottom heat; for with these *Narcissi*, as with other bulbs that are forced,

if the tops are drawn the accompanying flowers are so deficient in substance, that they will not last long.

EARLY TULIPS.—When the roots are sufficiently advanced, a portion of the bulbs that were first potted may now be put into heat. These Tulips are not so liable to have their tops drawn if brought into flower with less light than the Narcissi; but where they are kept near the glass, the flowers will be the most lasting. In the case of these and other bulbs that are forced early, it is better not to subject them to a high temperature. A temperature of 60° in the night is enough.

WINTER-FLOWERING BEGONIAS.—The greenhouse varieties of fibrous-rooted Begonias, of which there is now a number of fine sorts that will keep on giving a continuous succession of bloom, are very useful, especially where something is required to vary the wearisome repetition of the comparatively few things that now are often made to suffice in providing material for cutting. But though the varieties in question do not require much warmth to keep them blooming, still, to induce the plants to flower freely, it is better to give them an intermediate temperature. Without this the growth is slow and the flowers proportionately scarce. They should have a place near the glass where the light will reach them well on all sides. If this is not attended to, and the plants are kept in a growing temperature, the tops soon become weak and the flowers soft and of little use. This section of Begonias roots freely and quickly exhausts the nutriment which the soil contains. To maintain the plants in a healthy condition, manure water should be given once a fortnight. Amongst the large-growing sorts *B. insignis* is one of the best, and it is scarcely ever out of bloom; it makes an excellent covering for a wall where it is not too much crowded with other things. The large trusses of bloom, supported by long stout stalks, admit of being arranged with other flowers in various ways. *B. semperflorens alba*, *B. semperflorens gigantea carminea*, and *B. semperflorens gigantea rosea* are all fine kinds. T. B.

Salvia splendens Bruanti.—This is certainly an improvement on the old and typical plant. It is dwarfer and more leafy, whilst its flowers are more brilliant in colour and it is a profuse bloomer. Both the typical plant and the variety bloom freely, proving them to be very desirable autumn and winter-flowering plants. I am of opinion that this plant has never been half so much grown as it deserves to be.—W. H. G.

Salvia angustifolia.—This is a beautiful species with long spikes of azure-blue flowers which render it very desirable. It is in the way of *S. Pitcheri*, but the spikes of bloom are longer and the colour is a more decided blue than in the case of *S. Pitcheri*. This plant, which I noted recently so fine in the gardens at Burford Lodge, reminds me that there are numerous other plants in this genus which would well repay for their culture if properly grown. The following are a few of the kinds deserving attention: *Xanthina*, purple; *dulcis*, scarlet; *M. Issanchou*, white and creamy white, tinged with red; *rutilans*, magenta-purple, and many others.—W. H. G.

Sonerilas.—These plants are generally grown for the sake of their beautifully mottled foliage, but at the present time they have an additional attraction in the shape of their pretty little lilac-mauve-coloured blossoms, which, being just raised above a mass of variegated leaves, are seen to very great advantage. Some find *Sonerilas* difficult to cultivate, but I never have any difficulty in this respect. Being shallow-rooting subjects, they do not need any great depth of soil, and on this account, pans, or, better still, wire baskets, are suitable. The compost should be light, and composed principally of vegetable matter, such as a mixture of peat, leaf-mould, and live Sphagnum, with a little silver sand. If in baskets, a lining of Sphagnum Moss should be given, and, suspended in a warm stove, the plants will grow away freely during the summer and almost hide the basket. Liberal watering at that season is essential to their well-

doing, and frequent syringing is also of great advantage. The plants should be grown in a house shaded from the full rays of the sun, but by no means in too darkened a position, otherwise the foliage will decay directly dull and damp weather sets in.—H. P.

Impatiens Hawkeri.—*I. Hawkeri*, is one of the freest flowering and most brilliant species in the genus. The plants appear to be always in flower, and those now in the stove at Burford Lodge are of medium size and quite dazzling with their large, rich deep carmine flowers, which are of good substance. Associated with *I. Hawkeri* is *I. flaccida albiflora*, laden with flowers of the purest white, and affording a pleasing contrast. I am pleased to find Sir Trevor Lawrence finds a happy home for these old plants, which are often consigned to oblivion to make room for others which have nothing but their newness to recommend them.—W. H. G.

The Jalap plant (Exogonium Purga).—Apart from the interest attached to this plant owing to its economic value it is also a very showy climber for the greenhouse or conservatory, as it blooms during the autumn months. It is a free-growing Convolvulus-like plant, with bright lilac-purple coloured blossoms, that certainly do not remain long in perfection, yet a succession is kept up for some time. It flourishes well in the open air in the more favoured districts of England, and I was once very much struck with its beauty at Bitton, where it was allowed to ramble over neighbouring shrubs. The Jalap is often treated as a stove plant where growth is weak and flowers few, but in the open air it is a robust climber, and the blooms produced under such conditions are much brighter in colour than those borne in heat.—H. P.

Drooping Urn Flower (Urceolina pendula).—Though the different *Amaryllidaceæ* are remarkable for the beauty of their flowers, few of them in this respect surpass the *Urceolina*, with its drooping urn-shaped blossoms of a rich golden colour tipped with green. It is often met with in a poor condition, yet it is not apparently difficult to grow. Mr. Hudson grows this *Urceolina* to perfection, and he gives it much the same treatment as a *Eucharis*, that is to say during the growing season. Early in the year the plants are shaken out of the old soil and repotted, then they are grown on briskly during the summer, and flower grandly in the autumn. The blooms of this *Urceolina* remain a long time in perfection either on the plant or in a cut state, and, taken altogether, it must certainly be included among the very best stove or intermediate house plants that flower at this season. A coloured plate of it appeared in *THE GARDEN* for May 12, 1888.—T.

Habrothamnus Newelli.—This is a very desirable, but little-known *Habrothamnus*, though it has been grown to a very limited extent for several years. It was raised, I believe, by Mr. Newell, of Ryston Hall, Downham Market, and differs from the more commonly grown kinds in the flowers being brighter in colour than any of them, for those of Newelli are of a carmine-crimson, instead of the purplish-red tint of *H. elegans* and *fasciculatus*. While all the different kinds of *Habrothamnus* are now included in the genus *Cestrum*, the only one usually regarded as such is *C. aurantiacum*, whose bright, orange-coloured blossoms furnish a direct contrast to the others, which in habit and freedom of flowering it much resembles. The different forms of *Habrothamnus* may be grown in various ways, but perhaps the most pleasing is when they are loosely secured to a pillar or column, which they furnish most effectually. All plants of this class need to be liberally treated, so that where grown for drooping pillars by far the better way is to plant them out in a prepared border, consisting principally of open loam. The border should be properly drained, as the plants need copious supplies of water at all seasons, but more particularly when in full growth. Should they be allowed to get dry at the root the leaves soon acquire a sickly hue, and unless freely syringed

during the summer red-spider is apt to come. Aphides also need to be kept in check by means of fumigating, and particular care must be taken that mealy bug is not allowed to infest the plants.—H. P.

GARDEN FLORA.

PLATE 726.

LILIUM SPECIOSUM AND VARIETIES.

(WITH A COLOURED PLATE OF *L. SPECIOSUM RUBRUM*.)

It may be justly claimed for *L. speciosum* that it is one of the most variable of all Lilies. Not only do the flowers range in colour from white to that depicted on the accompanying plate, but there is also a corresponding difference in bulbs, foliage, and height. The form herein figured represents the very finest type of the variety *rubrum*, usually known under the name of *Melpomene*, this name having been originally given by the late Mr. Hovey, of Boston, to one of his seedlings, said to be a hybrid between *L. auratum* and *L. speciosum*, and which was awarded a first-class certificate by the Royal Horticultural Society, and illustrated by a coloured plate in *THE GARDEN*, February 2, 1884. Since that time, however, immense importations of *L. speciosum* have reached this country from Japan, the numbers increasing every year. The bulk of them consist of various dark-coloured forms, usually disposed of under the collective name of *L. speciosum rubrum*, the majority consisting of a superior form of that variety, but interspersed with them, to a greater or less extent, occurs that very deep coloured form usually known under the name of *Melpomene*. The variety figured is undoubtedly different from Mr. Hovey's plant, for the flowers are not so remarkable for size (which was one of the features of the original *Melpomene*), and there is certainly no relationship to *L. auratum* in the flower herein figured. All the different coloured varieties of *L. speciosum* merge one into the other by almost imperceptible gradation, which will account for the great confusion that exists in the nomenclature thereof, for the names *rubrum*, *roseum*, and *purpureum* seem to be used almost indiscriminately. It has been suggested to bestow the name of *rubrum* upon that form in which the stems and exterior of the buds are brownish, and to classify those with green stems under the head of *roseum*; but it is impossible to carry out such an arrangement in a satisfactory manner, as occasionally a few of those with deep coloured stems will produce flowers really paler in hue than those borne by the green-stemmed form, and it would certainly appear altogether out of place for some individuals of the variety *roseum* to be of a deeper tint than those of *rubrum*. At all events, the very finest of the dark-flowered varieties is that herein figured, a prominent feature of which is the white border to the petals, which contrasts so markedly with the rich hue of the rest of the flower. There are numerous other names applied to the different forms of *L. speciosum rubrum*, or *roseum*, such as *Schrymakersi*, *cruentum*, *purpureum*, *purpuratum*, *magnificum*, *superbum*, and others, but such names appear to be given according to individual fancy, and not from any marked feature possessed by the flower. One variety with deep coloured blossoms is very distinct from any of the others, though its ornamental qualities are not of a high order. I allude to the clustered form *corymbiflorum* or *monstro-*

* Drawn in Messrs. Krelage's nursery at Haarlem by Miss Arentine H. Arendsen. Lithographed and printed by Guillaume Severeijns.



LILIUM SPECIOSUM, VAR. RUBRUM

sum, in which the stem is usually fasciated, especially towards the upper part, the flowers being borne in a confused cluster on the top.

Among white-flowered varieties the first place must be assigned to Krætzleri, a very beautiful form, and one that is now every year imported from Japan in great numbers. The petals of this variety reflex in a very regular and pleasing manner, and they are pure white, except for a greenish stripe which extends about half way down the centre of each petal. The leaves of this are pale green and thickly arranged on the stems, especially towards the lower part, while the yellowish bulbs are very different from any of the others, unless it be a nearly allied kind, *album novum*, whose bulbs it is impossible to distinguish from those of Krætzleri, but the flowers have rather more massive petals, which are less regularly arranged than in the preceding. One feature by means of which the two varieties can be readily distinguished is furnished by the anthers, which in Krætzleri are brown and in *album novum* bright yellow. This last feature is also to be found in

The cultural requirements of *L. speciosum* are not exacting, and it is the best of all Lilies to adapt itself to circumstances, proof of which is furnished by the many creditable specimens occasionally seen as window plants in towns, where no other Lily would thrive. In the open ground, a good loamy soil of a sandy nature and quite free from stagnant moisture during winter exactly suits the requirements of this Lily, and when in a thriving condition large masses of it make a goodly show in the open border at a time when many summer flowering things have lost their freshness. From the fact of its blooming in August and September *L. speciosum* is extremely useful where a greenhouse or conservatory has to be kept gay at all times, as the different varieties serve to form a pleasing feature before the Chrysanthemum season commences. For this purpose effective masses may be made by putting several bulbs together in a large pot, or if preferred the bulbs can be planted singly, using for the purpose pots 6 inches or 7 inches in diameter according to the size of the bulb. In a general way this

directly upon them, for late spring frosts followed by a bright sun will frequently injure the delicate foliage of some of them, notably Krætzleri. The flowers of this class have not the very strong smell possessed by some Lilies, as, for instance, the golden-rayed Lily (*auratum*). *L. speciosum* was introduced into this country as long ago as 1832, and was for many years known under the erroneous name of *L. lancifolium*, which it is even now occasionally called.

T.

FRUIT GARDEN.

W. COLEMAN.

STARTING EARLY VINES.

LATE Grapes having come to the front, early forcing in many gardens has been given up or greatly modified. Late Grapes, however, especially Lady Downe's, whose greatest fault is a profusion of stones or seeds, do not please all private consumers; consequently not a few growers are still obliged to start Hamburgs and other thin-skinned varieties quite as early as they did before bottling was thought of. Late Grapes, in one respect at least, have done good service to the gardener whose houses are none too plentiful, as they enable him to postpone a start until Christmas, when going with instead of against Nature the chances are greatly in favour of better crops than could be obtained from the same Vines shut up early in November. Pot Vines, too, have gone greatly out of fashion, but the majority of growers who are obliged to cut in April still grow or buy a few annually, and whilst an extension of time for rest to the earliest permanent house is given, pot Vines, provided they are ripe and well rooted, yield good crops of fruit. Successful forcing, indeed, depends more upon the preparation of the Vines than upon the detailed operations of forcing, as frequently I have seen very strong Vines a complete failure, whilst weaker, but thoroughly ripe canes have shown good bunches in profusion. Ripeness, then, at the present moment is the great question, so great indeed, that anyone labouring under a doubt should not be too sanguine. Pot Vines, on the other hand, hard, brown, and well rooted, which have had a good rest may now be started with every chance of success by those who thoroughly understand the routine of forcing. The pit or house, I may say, should not be too large, but it should be very light, sound, compact, and well heated. A span-roof admits most light, also it takes most fire, as a great radiating surface is exposed to the elements; therefore, unless well fitted with blinds, I question if a good lean-to facing full south is not the best of the two for early forcing. Fancy coiling and twisting of the young rods are not in favour with those whose object is a good crop of Grapes, as it has been proved over and over again that training to wires a foot or 16 inches from the glass and 2 feet from cane to cane ensures most light and heat and offers the greatest facilities for thinning, manipulating, syringing, and watering, and last, though not least, for turning and renovating the fermenting material. The trellis in a pot Vine house, when furnished, in no way differs from a trellis in a permanent vinery, but, borders being unnecessary, each pot is set in a longitudinal trough, or on pedestals running the whole length of the pit, the latter being deep enough to receive a good body of fermenting material, not only as a stimulant to the roots, but also for keeping the house supplied with genial moisture. The Vines having been shortened back to their proper length some weeks ago, there will be but little danger



Imported flowering bulb of *Lilium speciosum* (natural size).

L. speciosum punctatum, a very pretty variety of a rather more delicate constitution than the rest of the *speciosum* section. This has the ground colour of the flowers white, dotted more or less thickly with pink. A white-flowered form which seldom or never occurs among the Japanese importations, and yet is grown almost to the exclusion of the others by the Dutch, is *album*, a variety with very dark green foliage, and with the stems as well as the exterior of the buds tinged heavily with chocolate. The flowers are, when first expanded, pure white, except a small greenish star in the centre, but after a few days' sunshine the petals frequently become suffused with a pinkish tinge, while they reflex in a very irregular manner, totally different from those of Krætzleri. The bulbs of this variety (*album*) are usually very dark coloured, as deep in fact as those of the richest form of *rubrum*, but of course all of them vary in hue to a certain extent according to the soil in which they have been grown. There is a clustered form of this which, except in colour, is a counterpart of the red one above described.

last is the better plan, for they then readily admit of being grouped together, and the size of the pot will in most cases allow of its being dropped into any of the ornamental vases now so much in vogue. The bulbs should be potted as soon as received in a compost consisting principally of loam, lightened by an admixture of sand and leaf-mould. A cold frame is a very suitable place for them, where they may be left till the spring frosts are all past, when if needed the plants can be plunged out of doors. Then the principal attention required is to keep them regularly supplied with water, as if allowed to get too dry the foliage suffers and much of the beauty of the plant is then lost. The only insect pests likely to give trouble are aphides, and they can be readily destroyed by an occasional syringing with tobacco water. When required for indoor decoration the plants must be removed under glass before the flowers open, otherwise the rough winds and heavy rains of autumn will destroy a good deal of their beauty. In planting *L. speciosum* as Mr. Wilson does the plants should be so situated that the early morning's sun does not shine

of bleeding; a touch of styptic, nevertheless, will do them no harm, as no power can stop the sap after it is set in motion. The rods having been well washed with warm soapy water, the pots scrubbed, the apertures examined and enlarged with a hammer to facilitate the escape of water, of which Vines in full growth take large quantities, they will be ready for placing in position. If at hand, a 2-inch sod of light fibry turf may be placed under each pot for the twofold purpose of encouraging fresh rootlets and filtering liquid on its way downwards when the time arrives for feeding. When properly arranged, carefully rammed, and lightly top-dressed with loam and bone-dust, a quantity of fermenting leaves with a dash of short horse manure added may be introduced, care being taken that the top of the ridge does not exceed the level of the bottoms of the pots. Over this the canes must be suspended in an arched or horizontal position, where they may remain until the lowest buds are pushing freely. At this stage each cane must be secured to the wires, disbudded, and in due course tied out and stopped at the first joint beyond the bunch. The fermenting material, of course, must be renovated when necessary, as warmth and moisture from this will economise and soften fire-heat, and at the same time render direct syringing almost, if not quite, a superfluity. The walls and paths will be the best receptacles for daily supplies of tepid water, but, provided the buds break evenly and well, the less the rods are syringed the better. Tepid water to the roots plays a very important part, but of two evils, it is better to give too little than too much, as an excess before the buds break not unfrequently destroys the most valuable roots. If the buds are prominent and show a disposition to respond to mild treatment, the temperature may range from 50° to 56° by night, and as high as 65° by day, a chink of air being given to keep the atmosphere sweet and healthy. Permanent Vines answer to precisely similar details, but the roots having the run of inside and outside borders, the first may be properly moistened by the repeated application of water at a temperature of 90° to 100°, and the roots in the second must be well protected with dry Fern or litter, with old lights or shutters elevated for throwing off rain and snow during the winter. A good body of warm Oak leaves placed upon the inside border is a great help, for reasons which I have already explained, and although opinions differ, I am in favour of a similar application to the outside borders when the buds show signs of bursting into leaf. Rank and violent fermenting stable manure years ago was applied to the outside borders when the houses were shut up, but this was a great mistake, as the surface became sour, if the roots did not perish, and the young rootlets rapidly drawn forth were made out of the stored sap contained in the Vines. This abuse of fermenting material rendered outside borders worse than useless, and the system was condemned; but errors of the past should not prevent the use of dry warm Oak leaves, which draw young rootlets up into the top-dressing placed over the borders in August or September, and shield them from all checks, no matter how severe the winter.

The Edinburgh Plum Conference.—There was an extensive display of Plums at the Edinburgh conference in September, but I am anxious to learn what benefits cultivators of this fruit are to derive from it. The Royal Horticultural Society very promptly gave exhibitors and the world the results of their deliberations, and the weeding out and classifying have been highly acceptable and instructive, but, so far as I could see at the time or have heard since, some of the Plums in question

were merely properly named, one lot compared with another, and there the matter ended. My own estimation of them, and I spent considerable time in gaining it, is that three parts of those shown possess no merit that will ever be beneficial to those who desire to cultivate high-class Plums for profit, and the greatest favour the authorities could confer on growers generally would be to select a dozen or so of the best sorts from the 2000 and more dishes shown, and let cultivators try these. Collections have had their day. The one desire now is to introduce only varieties that bear freely and have high quality.—M.

PRUNING AT TREE-PLANTING.

It is with some amazement that one reads in the garden literature of the Old World that trees ought never to be pruned at transplanting, and sometimes to find this doctrine get currency in periodicals of our own land. Surely it would be sufficient to refer to experience, but so far as I have seen this is rarely appealed to. The reason given is a purely theoretical one. It is presented something like this: Leaves prepare the sap for food; no roots without plenty of prepared sap; the more branches the more leaves—therefore the more branches on a transplanted tree the better. Now if this were all the reasoning would be sound. But experience teaches that a tree unpruned does not as a rule do so well as a pruned one. We must therefore conclude that something is wrong with the argument.

But there is still another argument brought forward in support thereof. It is said that all pruning is more or less injurious. The proof is furnished by every day experience. A Willow left unpruned will in a few years make a noble trunk, while the one cut down annually for osiers has never more than a strong main stem. The Osage Orange in the hedge trimmed annually has a stem not larger than one's wrist, while the untrimmed one soon makes a large tree. And it is beyond all question that trees on the public roadways and streets that have their heads severely lopped soon die. There is no doubt but that, as a general principle, pruning is unfavourable to the preservation of vital power. The reasoning is incontestable, and yet actual experience shows that pruning will often save the life of a transplanted tree, when if unpruned it would surely have died. The American nurseryman generally advises his customer to cut the transplanted tree back if it shows no signs of pushing into leaf freely. This advice is found so universally to be good, that it must be evident something is wrong with the English teachings—well supported, theoretically, as they seem to be.

It is a wonder our Old World friends have not discovered that there must be a weak spot in this reasoning, notwithstanding its seeming strength, for if the truth is here given of a tree it should be true of a cutting or a graft; yet even there they do not teach that a graft should be put on of 2 feet or 3 feet in length, "because of more leaves," and so on; but it is recommended to cut the scion down to two or three eyes. In like manner they would not take the half of a Gooseberry or Currant bush and plant it as a cutting with the slightest expectation that it would root at all well in comparison to a small piece cut down to nearly a level with the ground. A single eye of a Vine will at any time have manifold chances of success over a shoot with a dozen or two of eyes and running many feet long.

Certainly Americans know that while a huge Willow branch, a foot or more round, will root readily if all its small twigs are cut off, and the branch stuck into the ground as we would stick a post, it will surely die if all the twigs are left on. Nothing puzzles the student of European horticultural literature more than to find his Willow post shooting into leaf and growing with all its might, while his transplanted Willow tree dies, and "leaves no sign." The fact is, the authorities quoted take no note of evaporation. The doctrines enunciated would be sound if there was no such thing as evaporation. It may be doubted whether there is such

a thing as evaporation where a tree is in a condition to exercise its full vital powers. It then, as it is said, loses moisture by transpiration. The moisture from a healthy human being can scarcely be said to evaporate. He perspires, and the moisture transpires. But if he dies, the body dries up, and he may become a mummy. So even in plants, there is a time when it only transpires, but again when the moisture actually evaporates and the tree dries up.

And this is just where we come to in this tree-planting question. No matter how carefully we dig a tree, some roots will be injured. The balance of supply and demand is disturbed. Unable to maintain the supply necessary to each cell, those cells which get a short supply die, and then the moisture escapes by evaporation. Or again, if nearly all the roots are preserved, it is next to impossible to have all the roots in as close contact with the earth as before removal, and the tree might as well have no roots as not have them in actual contact with the soil. The tree is short by just so many roots as are not closely to the earth. In fact, the tree transplanted is in much the same condition as a cutting. We have to treat it much the same as we would a cutting, and one of the chief cares in the successful treatment of a cutting is to guard against evaporation till it has made roots enough to take care of itself.

Now just what care we should give a cutting depends on circumstances. In Great Britain the atmosphere is saturated with moisture. A long branch or cutting—a transplanted tree, if you please—would not dry out so rapidly as it would under our meteorological conditions. Therefore there is no need to prune a tree at transplanting, as there is in most parts of America. Again, whether a tree should be pruned or not, depends on our own season of planting. If we do the work at a season when there is little evaporation, giving time for the roots to heal over or push out anew before there is much of a demand on the branches for moisture, there may be no pruning.

No one wants to prune a tree if possible. Every year's growth cut back has to be made up again. But it is sometimes essential, namely, when the branches are out of all proportion to the root—when, in fact, the tree is little more than a cutting—and again when the drying conditions of the atmosphere are likely to act severely on the branches.—THOMAS MEEHAN, in *Country Gentleman*.

Showing orchard house-grown fruit.—We note your remarks (GARDEN, Oct. 19, p. 372) as to fruit grown under glass, and we agree with you in the main, but as our Apples were so clean and clear at the late Crystal Palace exhibition, your reporter must not hastily conclude that they came from trees under orchard house culture. They are grown and cultivated by care and attention, from the earliest period of their existence, mostly on small trees upon the Paradise stock, but a few were from trees on Crab, and some from old open standards, notably Waltham Abbey, Caroline, Kent Fillbasket, and Mère de Ménage, and out of the 600 fruits shown, only 36 were from orchard house trees; and the only entire dishes were Alexander and Calville Blanc. The grand Cox's Orange, Pomona, Dutch Mignonne, Queen, Belle Pontoise, Cornish Aromatic, and Melon were three in and three out, showing at a glance that an imaginary value is placed on glass-grown fruits. We had Bismarck under glass, but those from outside were much finer and better coloured (as demonstrated at R. H. S. on the 22nd). Only an equally small proportion of our Pears was from orchard house grown trees. We had cards printed, "Orchard house grown," to place in the plates, but were advised not to do this. If any restriction is adopted as to where fruit is grown or how produced, a line must be drawn between Pears and Apples grown on walls and those from trees in the open, and between Peaches grown indoors and those from the outside. You will notice that nearly all the chief prizes fell to Kent, and we maintain that the "Garden of England" can produce better coloured, better finished fruit, and

of larger size than most other counties, and we are sure we speak the sentiments of other Kent exhibitors when we state that we shall be happy to see classes for fruit exclusively grown under glass, as it will be a distinct advantage to us who can do so well from the open, but October is too late for orchard house fruit.—GEORGE BUNYARD AND CO.

* Mr. Bunyard admits in the above that of the 600 examples shown, 36 were from the orchard house, but why should orchard house fruit be staged with that grown outdoors? The exhibiting of orchard house grown fruit amongst outdoor grown examples is misleading, and ought on no account to be allowed. Visitors to the show examine the Apples and take down the names of the most handsome varieties, little thinking that the beauty of the specimens has been attained under glass. They order the same varieties from the nurserymen, plant the trees, and when these bear, the growers are very much disappointed with the results. Why is this? Simply because they were misled in the first instance, imagining that the samples they examined at the show were *bona-fide* outdoor grown fruit. If a hardy fruit show is to warrant the name, let the samples staged be from outdoor grown trees, and if orchard house grown fruit must be had, let classes be solely devoted to it, and not mixed up indiscriminately with outdoor examples, as is now too frequently the case. Let us see Apples and Pears grown solely in the open air and then people will see what the sorts are like and be able to form an opinion as to their merits. Orchard house cultivation shows the fruits out of all character.—ED.

LARGE APPLES.

FOR cooking purposes, whether it be for home use or for market, large Apples are always in great request, for while flavour is the great point of excellence in dessert sorts, the one thing to aim at in kitchen kinds is to get them large. Some kinds are naturally large, and this should be ensured by timely thinning of the fruit and the best culture that can be given. I never knew a very fine specimen that was not superior in quality to a small, poorly grown one of the same kind. The price realised by large Apples is far in excess of that obtainable for small ones, however good they may be in other respects, and the railway charges are just as heavy on bad fruit as on good. Now that the planting season is again upon us, I will briefly describe a few of the best kinds of Apples that are above the average size, and which when well grown cannot fail to repay the grower well.

ALFRISTON.—A very fine kitchen kind, very prolific, and a good keeper, lasting well until the days begin to lengthen in spring.

ANNIE ELIZABETH is a splendid variety of vigorous growth, and the fruit keeps well for winter and early spring use, when Apples are in the greatest demand.

BEDFORDSHIRE FOUNDLING is well suited to orchard culture, and if worked on the Paradise stock, makes a very fruitful garden tree. I prefer these large kinds in the form of dwarf bush or espalier trees, as in exposed places the gales of wind blow so many fruits off before they are fit to gather. A good Christmas variety.

BELLE DUBOIS, OR GLORIA MUNDI, is probably one of the largest Apples in cultivation, and when well grown attains enormous proportions. It is a pale green fruit changing to yellow when ripe, and is in season during November and December.

BLENHEIM ORANGE.—One of the very best Apples grown for any purpose, makes a fine orchard tree, and the fruit needs thinning to get its full size.

ECKLINVILLE SEEDLING.—One of the very best of large Apples for garden culture, being very fruitful in a young state, and in the form of bush or espalier trees it is especially prolific. It is an early Apple, in season during September and October.

FROGMORE PROLIFIC is another splendid garden

kind, being very fruitful on young trees; very clear smooth skin, good cooker. Midseason Apple.

DEUX ANS.—A Hampshire Apple of great excellence, makes a splendid tree, keeps well until April. Much grown as a large orchard tree.

HAWTHORNDEN, NEW.—One of the grandest Apples in cultivation, especially suited for garden culture on dwarf trees; a very broad flat fruit, with pale yellow skin. Keeps well.

LADY HENNIKER.—A splendid kind for garden or orchard, suitable for any purpose.

STONE'S APPLE, OR LODDINGTON.—A fine Kentish sort, splendid for grafting on large trees. Very prolific.

WARNER'S KING fruits well with us as a dwarf bush, and when well grown each fruit will average over 1 lb. in weight. It is also known as D. T. Fish, and should be grown by all who require large fruit. JAMES GROOM.

Gospport.

WORK IN FRUIT HOUSES.

EARLY PEACHES.

QUITE recently I pressed the importance of getting the trees in the early house pruned, cleansed, and tied in ready for starting. If ripe Peaches from trained trees are wanted in May, no time should be lost in getting them shut up, as it is better to start early at a low temperature with plenty of air than to force hard against time and spoil the flavour at the finish. As few growers now think of giving early trees a single foot of outside border, the inside roots only, as a rule, will require care; but those who do run in the old groove and prefer waiting a week or two for choice fruit, must pack them well to keep out frost, snow, and cold rain. The inside borders must be carefully examined to ascertain that they are in a thoroughly growing condition quite down to the drainage, and although late to remedy a common defect, they must be well watered with tepid water if the compost is dry. Fermenting material may not be absolutely necessary to the roots, as they keep growing in a low, moist temperature, but it will be a great help to the buds, which develop so much better under a steady supply of moist, warm vapour than they do under periodical syringing with water, which soon gets cold, and not unfrequently chills the embryo organs of the flowers. Therefore, where Oak leaves are plentiful, a good layer a foot or more in thickness, whilst aiding the hot-water pipes and softening their drying influence, will give just that gentle stimulus to the roots which will help them on without taking anything out of the system. For some time after the house is closed it will not be necessary to apply fire-heat, especially if the fermenting material is frequently turned over and renovated from the reserve; but fresh air being so important, before the buds break even, it is better to warm the hot-water pipes than keep the house shut up and full of cold vapour. There prevails an impression that ventilation through the early stage is of trifling importance, but this I have proved to be a mistake, as trees that are started with a free circulation of fresh air expand stronger and more perfect flowers than others which do not receive this attention. On fine, bright days the top as well as the bottom ventilators may be opened; at other times those along the front only may suffice, and when the buds become prominent gentle fire-heat will favour the admission of more air, also gentle dewing over with the syringe once or twice in the course of the best part of the day. A temperature of 40° to 45° is high enough to start with; then as the buds swell, 45° may be taken as the minimum, 55° as the maximum, rising to 60° under gleams of sun in the middle of the day.

FIGS.

Pot Figs in position upon pedestals or inverted pots must receive repeated supplies of tepid water until the balls of soil are thoroughly moistened through. Fermenting material, consisting of Oak or Beech leaves, and a little well-worked stable manure at the same time, may be introduced, quite loosely at first, until it touches the bottoms of the

pots and the revived heat begins to decline, when the whole mass must be made quite firm. Another layer of leaves may then be added, and so on until the pit is full and the crooked parts of the pots are within the influence of their genial warmth. The temperature of the pit may range from 50° by night to 56° or 60° by day, always with a chink of air, unless the weather is very severe and these figures cannot be maintained. The trees may be syringed with tepid water at least twice during the early part of the day; the walls and surface of the bed, without wetting the trees, later in the afternoon. As days for some time will decrease in length, and severe weather may set in and continue, there must be no attempt at hard firing, as it is better to allow the heat to decline a few degrees, and redeem apparently lost time after the turn of the year.

Trees in borders or cubes of earth, like those in pots, must receive repeated waterings until the whole of the compost is restored to a moist growing condition, and the water has penetrated quite through the drainage. All parts of the border area unoccupied by compost must then be filled up with warm leaves, or, lacking this convenience, heaps or ridges of the same in a fermenting condition may be formed over the roots or upon the floors. The trees, be they bushes, pyramids, or trellis-trained, will soon respond to the warmth and vapour from the leaves, and being lovers of moisture, will derive great benefit from light syringing early in the morning, and again when the house is closed, about 1 p.m. on fine days. If bug, no uncommon enemy, has held possession, the trees from this time must be closely watched and examined, no matter how carefully they may have been cleansed. If completely destroyed so much the better; if not, a touch with a camel's-hair brush dipped in methylated spirits will melt all solitary insects as they appear.

STRAWBERRIES.

In gardens unprovided with a proper Strawberry house, the first batches of plants are introduced when early Peach houses and vineries are shut up for forcing. Independently of the question of profit, there exists not a shadow of a doubt that they are undesirable occupants; hence the advisability of preparing the plants and pots with the most scrupulous care. The pots, for instance, should be well scrubbed, and the apertures opened to ensure the free passage of water, for, much as they enjoy moisture, it must not stagnate about the roots. All loose surface soil, weeds, and dead leaves, as a matter of course, will be removed, dipping or immersing pots and plants in sulphur water or soap-suds containing sulphur will follow, and a top-dressing of rich compost will complete preventive measures against red spider and mildew. A shelf near the glass, and not too far away from the top ventilators, is the best place for the plants, and being so impatient of dry fire heat, they must be regularly moistened with the syringe and carefully watered, but not to excess, through the early stages of their growth.

WORK AMONGST HARDY FRUITS.

STRAWBERRIES.—The mild autumn having been so favourable to a latent growth of runners, beds of vigorous young plants will now require a second trimming, and on a fine dry day a general hoeing to check the growth of weeds before they are mulched down for the winter. In the choice of material for this purpose one must be guided by the nature of the staple soil, which may be light and warm, heavy and cold, or good medium loam which produces fine crops of fruit in fair average wet or dry seasons. On the first the cultivator may safely use good rotten spit manure, old cow manure, and marl, and occasionally, the winter proving dry, he may run superfluous liquid between the rows in preference to allowing it to run down the drains. On cold heavy soils a thorough dressing with anything fresh in the way of compost discarded from Cucumber and Melon pits, Vine and Peach borders, the potting bench, charred refuse from the rubbish yard, and the remains of old Mushroom beds, sepa-

rately or mixed together, will tell better than solid manure, which should be reserved for use when the fruit is set and swelling in the spring. On good Strawberry soils a mixture of stiff calcareous loam, manure, and burnt earth, or lime rubble, forms an excellent annual dressing, as it induces the formation of fresh surface roots, and does not force the plants into a gross unfruitful condition of growth. Early in the autumn is the best time to apply these materials, but, better late than never, an even coat 2 inches in thickness may be cast over the beds now, and well worked into the old stools early in the spring.

RASPBERRIES.—If the formation of new plantations is contemplated, advantage should be taken of any open weather for getting the young canes planted and mulched. The Raspberry will grow in almost any good garden soil, provided it is deeply cultivated and water can pass freely away from the roots, but that which suits it best is a light, rich loam, well fortified with leaf mould, burnt refuse, old lime rubble, road scrapings, and perhaps a little rough peat. Upon a compost of this kind, especially in gardens naturally dry and warm, the young canes with a dormant bud at the base may be planted on the level, but conditions being less favourable, they will succeed best when the ground is thrown up into ridges running north to south and not less than 6 feet apart. Upon these ridges the young canes may be planted in trebles, triangle fashion, 3 feet from centre to centre, where a shortstake should be driven in for their support through the winter. When planting is finished, and the canes, left full length, are tied up to the stakes, the ridges must be well mulched with half-rotten manure, not only to protect, but also to keep the most useful fibrous roots close to the surface. As Raspberries never do much the first year, like any other herbaceous plant, they pay best for cutting down nearly close to the ground, when the base buds commence pushing in the spring, and the danger from wet and frost getting into the pith has passed away. In order to keep the winter work well in hand, all old plantations so soon as the young planting canes have been taken up may be well thinned, re-staked, and tied in full length. Hand-weeding or light hoeing will precede the introduction of manure, which must be spread over the surface, but on no account must the roots be disturbed by the baneful practice of digging or forking in.

PRUNING.—Bush fruits now clear of leaves may be pruned, syringed with soapsuds, and, caterpillar having been troublesome, well dusted with quicklime. Red and White Currants and Gooseberries should be kept to single stems by the removal of all suckers before they are top-dressed. Black Currants, on the contrary, do best and produce the greatest quantity of fine fruit when allowed to stool. Gooseberry bushes should be kept in form by the removal of pendent shoots which are less than 9 inches from the ground, by shortening others, and opening the centres to let in light and air and ensure the free admission of the hand. Many growers defer pruning until the birds have taken their share of the buds in the spring, but, independently of the untidy appearance of the plantation, these marauders spoil the bushes and destroy the crop in a few hours. Therefore it is best to prune early, dress and fork the ground, and net before the buds begin to swell. Red and White Currants submit to close spur-pruning and produce the finest of fruit for a great number of years, always provided a few of the oldest branches are removed annually and young ones are trained to take their place. Moss and Lichen are prevalent in cold, damp, and crowded plantations, especially when the bushes become large and the roots are deeply seated in wet soil. The first preventive step is thorough draining, the second is frequent syringing with soapsuds and dusting with quicklime, but propagating by cuttings being so simple and fruit from young bushes so much finer, a given number should be planted on fresh ground, not spasmodically, but annually, when a corresponding breadth, as in the Strawberry garden, may be cleared, cultivated, and devoted to other crops. Black Currants do not fruit well when

spur-pruned, neither are they improved by systematic shortening; the object, therefore, should be a constant relay of bright, vigorous young shoots from the stools, space being made for their full development by the removal of those which have become more than three years old. Black Currants revel in moist, light, rich soil free from stagnant water, and well repay copious supplies of liquid when in full growth. They make excellent hedges and swell very fine fruit when semi-trained against fences or north walls. W. C.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

—To most of the questions referring to Peaches I make no reply, but with reference to the one relating to market fruit and deficiency of flavour, I think it is possible to give an intelligent reply without being a present grower. No one has ever yet found flavour with thorough lusciousness in Peaches equal to what may be obtained when the fruits are gathered direct from the tree. As much may be said with respect to most fruits perhaps; but the remark applies peculiarly to Peaches because so soft and juicy, and having a flavour which seems to be contingent at once upon absolute ripeness and freshness. Now to get fruits to market in fairly sound condition it is necessary to gather them at least three days before they are ripe. No care in packing or even in simple storing ever does give the flavour which adherence to the tree gives, and thus it happens that those who have market Peaches never know, or can know, the perfect delicacy of flavour found in fruits thoroughly ripened before gathered. Very many Peaches for market I have seen gathered fully a week before they would be thoroughly ripe. They are perhaps kept in a fruit room for two or three days, are then packed, and perhaps before they are eaten another two or three days elapse, so that both aroma and flavour are wanting. If Peaches could be gathered from the tree thoroughly ripe in the early morning and be eaten during the day, there would be little cause for complaint. It is when treated as described that they come to the consumer comparatively flavourless.—A. D., *Bedfont, Hounslow.*

—The flavour of Peaches varies considerably in different sorts, and when subjected to artificial cultivation, the quality of the fruit depends very much on the treatment the trees receive during the process of ripening, and also upon the state the fruit is in when it is gathered. If this is done prematurely, it can hardly be expected the fruit will, under these circumstances, attain the same degree of excellence that it would do if it were left to perfect itself on the tree in a natural way. For market purposes the usual practice is to gather the fruit before it is quite ripe, in order to ensure safe transit and to meet the demand of market requirements; but this method unquestionably tends to deteriorate the quality, and accounts for the market Peaches oftentimes being found of an inferior flavour. In the case of Peaches, it is satisfactory to note that considerable progress has been effected of late years, and the lists of kinds have been augmented by others of real merit; out of these I am able practically to testify to those first-rate additions, Alexander and Hale's Early, as most

excellent kinds for early purposes out of doors. I am testing their value for forcing; if they will only withstand artificial treatment properly they will be still more valuable. Even with me this season, Alexander in the early house ripened a month before the old and far-famed kind Royal George, which formerly was considered the best of all in this respect. With regard to flavour in general kinds, I consider the under-named the best: Early Grosse Mignonne, Royal George, A Bec, Stirling Castle, Bellegarde, and Violette Hâtive; and late ones comprise Sea Eagle, Barrington, Dymond, and the Nectarine Peach; of course, the quality of these mainly depends on the nature of the season. The success in Peach cultivation out of doors mainly depends on the summer management of the trees, assuming these to be planted properly. If the growths are crowded together so thickly as to prevent sunshine and heat having free play about them, the natural result will be very imperfectly ripened wood, the cause of much mischief that ensues the subsequent year. In some places where that terrible pest, the red spider, abounds, it would be injudicious at the early part of the season to remove too much of the foliage, but later on, as the growths advance and the trees become well furnished, enough should be taken away to admit of sunshine and heat having full force to develop and mature the growths.—G. T. MILES, *Wycombe Abbey.*

—With regard to your questions about Peaches, most kinds are good in flavour if they are properly managed, but I can with confidence recommend the following: Early Ascot, Royal George, Grosse Mignonne, Dymond, Violette Hâtive, Desse Tardive. I can strongly recommend Dymond, a comparatively new Peach, as being of excellent flavour and good for both forcing and outdoor culture. In the majority of cases overcropping is the cause of inferior flavour. We do not work our own trees, but we never had any reason to complain of the stocks, which are Plum. Trees may be grown successfully in this district if they receive timely attention early in the season, keeping them free from aphids, and so encouraging an early growth, which in an ordinary season will ripen sufficiently to form plenty of bloom buds.—T. TURTON, *Maiden Erleigh, Reading.*

—The best Peaches in my estimation are Hale's Early, Noblesse, Grosse Mignonne, Royal George, and Walburton Admirable. I attribute the cause of inferior flavour so often found in market Peaches to their being gathered before being ripe. Another cause of inferior flavour no doubt is due in a great measure to keeping the borders in a sodden state, more especially when the fruit is approaching ripeness. As to the stock on which the fruit is grown, I consider the Plum the best.—J. OLDFIELD, *Chirk Castle, Ruabon.*

—We grow no Peaches out of doors. Best flavoured here are A Bec, Royal George, Barrington, Bellegarde, Grosse Mignonne, Dymond, Marquis of Downshire, Dr. Hogg, Violette Hâtive, Walburton Admirable. I find that the stock which gives the healthiest and longest lived trees is the Brompton.—A. HENDERSON, *Thoresby, Ollerton, Notts.*

SHORT NOTES.—FRUIT.

Plum Downton Imperatrice.—This is a sure fruiting, very late Plum. It remains useful until the end of October. It is of medium size, oval in form, and pale yellow in colour. It is generally classed as a cooking variety, but by selecting the best fruits I find them acceptable as dessert at this season.—J. MUIR.

Two sure fruiting Pears.—Many good Pears are extremely shy in fruiting in some localities, and varieties that will fruit everywhere are scarce, but in Louise Bonne of Jersey and Brockworth Park we have two sorts that fruit with the greatest certainty here, in Wales generally, and I believe all over the country. The latter is ready for use in September, the former in October, and all who wish to plant Pears that will afford a supply of nicely flavoured fruit in those months should grow both of them.—J. MUIR, *Marjram.*

Open-air Peaches.—I am of opinion that the culture of Peaches in the open air does not receive the attention it merits. The production of gross fruits

is no doubt accountable for the discontinuance of the open-air culture of Peaches in numerous instances, as the coarse, ill-flavoured samples which have been furnished from this source have created an impression that good open-air fruit is unobtainable; whereas the wide-spread notes in *THE GARDEN* prove that by growing suitable kinds, fruit of the greatest excellence may be obtained. This ought to be good news for those who do not possess a Peach house, and I have every confidence in advising all such to renew or begin open-air Peach culture.—J. M.

KITCHEN GARDEN.

AUTUMN SOWN EARLY PEAS.

SINCE the introduction of cheap glass and the erection of innumerable well-heated glazed structures, there has been quite a revolution in various branches of horticulture, this even affecting the cultivation of early Peas. In the good old times, which we often read about and but few people believe in, it was thought advisable to make one sowing on a warm border as early as the middle of October, though in each instance where I have found this plan recommended the authors took good care to point out



Pea Sangster's No 1 (one-tenth natural size).

that very little dependence could be placed upon this sowing, and strongly advised sowing more seed a month later, and yet another quantity of seed being got in early in December. About the middle of the seventeenth century, Mawe in his book entitled "Every Man his own Gardener" recommended the Hotspur family, these including the Golden, Charlton, Reading, Master, and Nichol's, for autumn sowing, the preference, however, being given to the Golden Hotspur. Nearly a century later McIntosh advised that the true Early Frame, Charlton, Nimble Taylor, and Hotspur be sown in October and November, and it appears from his writings that the practice of sowing the seed on turves to "facilitate their transplantation" was then in vogue. In this case, however, the turves were "placed under" the Peas in the open ground, the transplanting being done in the spring, so that the more modern idea of raising Peas on turves under glass in order to have strong plants for putting out is only a modification of one of our forefather's practices. Former generations of gardeners also raised a considerable number of early Peas in shallow

boxes and small pots, but both these and any established on turves had to be protected in some way during the winter, and being duly transplanted to sheltered borders were found to "come into fruit sooner by some days than such as stand out all winter."

We may reasonably presume that the varieties of Peas available now-a-days are naturally earlier than those of the old Hotspur family, though all do not merit the eulogiums frequently passed upon them. In any case, it is a generally



Pea Taber's Perfection (natural size).

admitted fact that sufficient plants for forming several good rows may easily be raised in unheated houses or frames, and will, if properly treated, yield good dishes quite as early as any raised now and wintered in the open. None but those who have made the attempt are aware how difficult it is to preserve a few or many rows of autumn-sown Peas during an average winter, frosts being by no means the worst enemy to contend with. Slugs, mice, and birds all prey upon either the seeds or tops of Peas, and very rarely indeed can all of these be kept from them. Such was the case in olden times, and in all probability no improvement in this respect will ever take place. Those, then, who intend, in spite of difficulties generally, to sow their early Peas now, must be prepared to take more than ordinary care with this crop. Cold and heavy soils are the worst to deal with, these, in addition to being usually much infested by the very troublesome small black slugs, being also the most likely to cause a sickly yellow top-growth. As a rule, the wall borders, being more highly cultivated, are in a good free-working state, and if Peas fail to do well on them, this is principally owing to a deficiency of either lime or potash in the soil, much the same crops being repeatedly grown on them. A dressing of newly-slaked quicklime, applied at the rate of 1 bushel to every 20 square yards of border, will sometimes bring about good results, especially when solid manure only has been freely used for several years past. Wood ashes, or a special manure largely composed of potash, frequently proves beneficial to Peas, an absence of the latter in the border being one cause of the "yellows." The least that can be done to poor ground is to dig in a good

dressing of half-decayed stable or farmyard manure, choosing a dry day for the work, and at once making the ground firm prior to sowing the seeds. If the sowing is delayed, the chances are that a soaking rain will render the soil unfit to work for many days to come, and unless a good start is made it is almost useless to proceed with it.

The round-seeded extra early varieties only ought to be sown, the more delicate wrinkled seeds being liable to decay in the ground. William I., First and Best, Ringleader, Taber's Perfection, Sangster's No. 1, First Crop, and Earliest of All are all suitable for present sowing, but I should recommend that the first named and any one of the rest would be ample, as these latter do not differ materially from each other. New seed is to be preferred, as this germinates more strongly than does old seed, the plants being more sturdy throughout in consequence. On all but quite light soils it is advisable to draw very shallow drills; in fact, on heavy land the seed should be sown on the surface and fine light soil distributed over it. The drills may run either lengthways or across the border, and be not less than 3 feet apart, another 6 inches at least being needed for the tallest growers, including William I. The seed should be sown rather thickly to allow for losses, and be covered with about 2 inches of soil. As a rule, one good sowing made about the middle of November is ample, but should the early part of the winter prove exceptionally mild, the Peas are liable to grow too rapidly, in which case a hard frost in January or February may destroy them. It is for this reason that the



Pea William I. (natural size).

advice to sow more seed about the end of November is sometimes given.

When mice are known to be troublesome in a garden their attacks ought to be anticipated. Coating the seed with red lead will sometimes preserve them, but McIntosh's plan of strewing finely chopped Furze over the Peas in the drill is a more lasting preventive. Directly the plants show through the ground, fresh ashes should be freely sown about them, this, if persevered in, acting as a preservative both from damp and slugs. It is also advisable to

keep the soil well drawn up to the stems, this serving to protect them somewhat from frosts. If birds interfere with them, the surest protection can be afforded by the wire guards formed with the aid of half-inch galvanised wire netting. In the spring any blanks can be made good by transplanting from where the plants are thick, or a sufficient number of plants may be raised on turves or in small pots and duly hardened off prior to being put out. Stakes should be placed early to the rows, these to a certain extent protecting from cold winds as well as preventing the stems from breaking down. W. IGGULDEN.

Mildew on late Peas.—With me and in many places late Peas are very much injured by mildew. It is a very difficult matter to find varieties of Peas that will resist it; I only know of one. It is an old and, I believe, little grown sort, named Lynn's Black-eyed Marrow. This variety grows about 5 feet in height and is very fertile. The pods are small, but the flavour is excellent, and during three years' experience of it it has remained green and free from mildew to the last, while the kinds usually grown for late crops have been covered with mildew. Last year I gathered this Pea until the second week in November, but owing to earlier frost this season it only lasted till the third week in October. —J. M., Margam.

Defoliating Tomatoes.—Although some object to this practice, it is not an injurious operation. I invariably keep the plants at all times rigidly confined to one stem, and to do this it is necessary to remove shoots from them weekly or oftener when in full growth. About a month ago I had a number of plants bearing a large quantity of late fruit with foliage that gave too much shade to some winter-flowering Carnations that had to go under them. Every leaf was removed from the Tomato plants and only the stems and fruit allowed to remain, and since then the fruits have ripened and later ones swelled up considerably, quite as well, in fact, as if the leaves had been left. I would have no hesitation in defoliating every Tomato plant on the place at the present time so long as no more fruit was expected to form at the ends. I am further of opinion that Tomato plants are not half so much injured by partially defoliating them throughout the season as they are by being allowed to bear a superabundance of foliage, which in many cases prevents a full crop from being formed and the fruit from maturing quickly to its fullest extent. —J. MUIR.

Brussels Sprouts.—There are few vegetables which are more valued than Brussels Sprouts, and I have never known any proprietors of gardens become tired of them. A long season of regular supplies is much appreciated. The first supplies have been unusually early this season; I began gathering early in September. Some may suppose that such is unduly early, as so many other vegetables are, or should be, abundant. Nevertheless, when supplies of Brussels Sprouts are valued by those who are at the expense of cultivating them, there should be no objection raised to this by a cultivator who has means to supply such a simple want. I invariably supply all that is required of good sprouts from September to May, and from a border sloping northwards, Brussels Sprouts may be had till June 1. I sow for the first crop in August; for the second, under glass protection during February; for the third, in the open ground during March; and for the fourth lot about the 1st of April. It has been my practice to get the sprouts ready for use when the Peas were getting scarce. This year I picked Peas on October 24, and should frost not destroy them, I expect to have a few in November, but in northern districts they are very tasteless at this late season and barely worth the gathering. —M. T., N.B.

Beet-lifting.—Much damage is often done by breaking off portions or by mutilating Beetroot when being lifted. This has been very noticeable during the past season where I have been judging

at exhibitions. It is a good system when lifting is being carried out to begin at one end of the ground and clear the soil away bodily till the extreme points of the roots can be removed without breaking even the skin of the roots. Beetroot is not the very tender vegetable which many suppose it to be. I often dig roots up in spring which have been in the ground all the winter, covered with some soil or litter. Many prefer the newly-lifted roots to those which have to some extent lost their juicy flavour by being exposed more or less to atmospheric influences. I never found any roots decay by being left in the ground all winter. —N. B.

KITCHEN GARDEN NOTES.

FORCING VEGETABLES.

THERE is every prospect of abundance of good vegetables of all kinds in season being available during the coming winter, but if these can be supplemented with a few dishes of choice forced kinds, there is all the more reason for those responsible to be satisfied with their labours. A few extra early bunches of good Asparagus, Seakale, Kidney Beans, Carrots, and Rhubarb, and occasional dishes of new Potatoes are always highly appreciated, and in many instances give more pleasure than the same class of vegetables will do at any much later date. In large well-appointed gardens it is a comparatively easy matter to force vegetables generally, but where the facilities are somewhat meagre, far greater difficulties are experienced in the matter, and all the more praise, therefore, is due to those who succeed.

ASPARAGUS.—This ranks among the most valuable vegetables that can be forced, and is especially prized in December and January, when so many shooting and dinner parties take place. Where the difficulty comes in is in the finding of a sufficiency of strong roots suitable for forcing without breaking up serviceable beds. Probably the time will come when a few hundred plants will annually be raised and grown in most large gardens specially for forcing, but till that is done the plan of either purchasing the requisite number of strong roots or else breaking up the oldest plantation must be resorted to. The latter and most generally followed system necessitates the formation of a new bed every year, and which perforce must not be cut from for two or three seasons, but if space can be spared, not much fault can be found with the practice. Seeing that the plants have now had a few weeks' rest, there is no reason why a start should not be made at once, fresh relays being placed in heat about every three weeks. A moist gentle heat, such as a hot-bed of leaves and manure generates, is far preferable to a dry heat contributed principally by hot-water pipes. We utilise a deep and well heated pit for forcing Asparagus, but a mild hot-bed 2 feet deep is formed in this and the top-heat rarely exceeds 60°. Failing this pit, frames would be set on a mild hot-bed about 4 feet high at the back and rather less in front, formed with a mixture of well prepared stable manure and fresh leaves. When the heat of either kind of bed has declined to about 80°, this ought to be covered with 6 inches of rich loamy soil, but the roots must not be trusted in this till it is seen whether the heat again rises to a dangerous height or not. When the time has arrived for placing the Asparagus in either pit or frame the requisite number of roots should be carefully forked out of the bed and as little exposed to cold drying winds as possible. They may be packed flatly and closely on the surface of the bed and covered with fully 3 inches of good fine soil. The soil being in a moist state no water ought to be given at first, but if at any time the roots suffer for want of moisture the quality of the shoots will be much impaired. It is really surprising what a quantity of Asparagus can be had from two or three lights, and seeing that the roots are of no further service they ought to have every shoot forced out of them, quite the smallest being suitable for soups. If high temperatures are otherwise guarded against there will be no necessity to admit air to the pits or frames, the most succulent growth being obtained in mat-

covered frames, never opened only when it is necessary to twist off the shoots or to give water.

SEAKALE.—Occasionally this is to be seen in November, but, as a rule, December is quite early enough to have it ready for use. In order to be able to cut Seakale thus early, rather hard forcing must be resorted to, and the produce is rather spindly accordingly. The very best dishes are cut from plants gently forced in the open ground, but this side of January it is a slow process, and the usual practice is to lift the required number of one-year or two-year-old roots, and to force these either in a Mushroom house or in some other still warmer position. I hold it to be very unwise to maintain high temperatures in Mushroom houses, ours rarely exceeding 55°, and for this reason I adopt other methods of quickly forcing Seakale. Young roots specially prepared for lifting are placed rather thickly in the largest flower-pots available, rich loamy soil being used, and these are then set in a forcing house not far from the hot-water pipes and closely darkened with the aid of hay-bands just inside of the rims of the pots, and other large flower-pots with the holes duly stopped inverted over them. The soil being kept well moistened, young root fibres are soon formed, and two cuttings of shoots are obtained from each crown, the first being much the finer, and the second of a serviceable size. Two or three large pots of young roots introduced into heat at intervals of about nine days will be sufficient to meet the wants of a moderately large establishment. Seakale may also be forced on gentle hot-beds, much as advised in the case of Asparagus, but it is even more liable to be injured or destroyed by a sudden great rise in the bottom-heat. In Mushroom houses the roots may either have an end to themselves, being bedded in rather thickly in moderately moist soil and not watered till the latter has become drier, or deep boxes and pots may be filled and set wherever there is room for them. Seakale always forces more readily after a severe frost has reached the roots, and it is advisable therefore to lift and expose them in an open shed for two or three weeks prior to introducing them into heat, this enforced rest causing a more vigorous growth.

POTATOES.—To have these very early recourse should be had to pot culture. In some few gardens new Potatoes are sent to the table from late planted frames up to the middle of December, after which they are available from the batches forced in pots. In this case the latter are now well advanced in growth and are kept plunged in a gentle hot-bed of leaves formed in a slightly heated pit. They can also be had very early by starting with pot culture at the present time. The most suitable varieties for the purpose are the old Ashleaf, the true Mona's Pride, Victor, or any other extra early, short topped sort, and the best sets are those saved from early crops lifted from frames. These having had a good rest would naturally sprout early and more strongly than any late-saved tubers that had to be forced into activity, and which never thoroughly recover from a spindly start. The next best planting tubers are those saved early from a warm border, many of which with us are already sprouting strongly. In any case, the sets ought to be packed closely together sprout end uppermost in a shallow box and be placed in a light warm house to start into active growth, and thus treated they will form sturdier sprouts than would be the case if they were placed direct in soil. Only one central sprout ought to be left on each tuber, and when this has commenced to form roots at its base the time has arrived for potting. Use light and fairly rich loamy soil, a mixture of two parts of light loam to one of old Mushroom bed manure duly warmed answering well, and lightly drained 8-inch or rather larger pots. Half fill with soil, making this moderately firm; place one set in each and just cover with soil. From forty to fifty pots would form a good batch, and these should either be plunged in a mild hotbed of leaves and near the glass in a heated pit, or be stood on a shelf in a newly started Peach house or vinery. Very little water will be needed at the outset, and when the haulm is well above the level of the rim of the pots, the plants should

have a top-dressing similar to that in which they were potted, a sprinkling of superphosphate or soot being added with advantage. It is only a gentle heat, or say a temperature that is seldom much above 60°, that suits early Potatoes—in fact they will not stand hard forcing. When the pots are well filled with roots, liquid manure, notably soot water, should be given frequently, and in the end several dishes of small, but otherwise good new Potatoes ought to be obtained. We have been fairly successful with Potatoes in rather shallow boxes set along the fronts of early and second early Peach houses, and in some cases there is no reason why they should not be grown in ridges of light soil in a similar position not far from the hot-water pipes.

RHUBARB.—Very good Rhubarb can be had early without much trouble, a few strong clumps of an early variety and a little heat being the principal aids to success. Royal Albert and Linnaeus force well, the stalks being of a superior colour and the quality good, but almost any other variety may be forced so as to be fit to pull from by Christmas. The simplest plan is to lift the clumps with soil about them and place these together in a Mushroom house, or, better still, under the slate staging of a forcing or warm plant house. They ought not to be located very close to the hot-water pipes, and in any case may well be surrounded with soil. If in a rather dry heat, water should be frequently applied and the syringe freely used. Rhubarb being forced ought not to be exposed to much light, the stalks being of a greater length and more delicately flavoured when grown in the dark. Some succeed in growing abundance of early Rhubarb in warm cellars, and another simple and more expeditious method of forcing is by forming a square hot-bed about 3 feet deep of well-prepared leaves and manure, covering this with soil or short manure, several clumps being then set closely together on this and covered with soil, an old flour or cement tub being inverted over each. Abundance of straw litter ought to be thrown over the tubs, and care be taken to prevent injury to the clumps from over-heating. W. I.

FERNS.

IMPORTED TREE FERNS.

A CONSIDERABLE number of Tree Ferns are imported into this country, many of which fail to grow, but they should not be thrown away, as they may be rendered very ornamental. It is an easy enough matter to establish other Ferns on them, and some kinds thrive better on an old Fern stump than in any other position. The various species of Hare's-foot Ferns, for instance, do remarkably well when once they get good root-hold, in time covering the whole of the stem with foliage. All that one has to do in their case is to bind them on with copper wire and keep the stem moist. If this is done in spring they will become well established in the course of the summer. The true Maiden-hair is one of the best for this purpose, and never seems happier than when the rhizomes can wander at will round an old Fern trunk. It is seldom that this Fern grows with sufficient freedom to be really attractive unless cultivated in baskets or in the manner here indicated. The various members of the Stag's-horn family look wonderfully well used in this way, and if the smaller growing kinds above-mentioned are associated with them the effect is very pleasing. It is also possible to endow an old Fern stump with an artificial head, and this may be if so desired of the same species. I have seen old Dicksonia stems successfully treated in this way. Of course, the fronds made under such circumstances will not be so large as when produced in a natural manner, but a medium-sized crown of foliage is better than none at all. The centre of the stem at the top should be hollowed out with a sharp

knife so as to admit of putting the roots of a young plant into it. In the course of a season or two, if well attended to, it will get well established and the roots will make their way in the course of time down the trunk. The important point is to keep the roots constantly moist from the time of placing the Ferns on the old stems. There is one more reason why old imported Tree Ferns should be retained for some time even if no signs of life are shown. It frequently happens that numerous young plants of the same species come up on them. Several years ago, I took more than a hundred nice young plants from an old trunk of *Dicksonia antarctica*.

J. C. B.

FERNERY AT NASH COURT, FAVERSHAM.

BESIDES the magnificent variety of *Lapageria rosea* for which this beautiful place is justly celebrated, and of which a description appeared in the last issue of THE GARDEN, there is also a fernery which deserves a special notice not only as being one of the finest now in existence in Great Britain, but also showing how well Ferns can be grown under cool treatment. This structure, which is very lofty, measures 86 feet in length by 33 feet in width. One cannot help admiring the boldness of conception in its creation, as well as the effects resulting from a happy combination of plants found in warm countries when planted along with others from cooler regions. For there, in a house where during the winter the temperature frequently falls to only a few degrees above freezing point, one sees in all its beauty the magnificent *Microlepia hirta cristata*, with fronds each 5 feet to 6 feet long and of a beautiful and healthy colour; also huge masses, fully 4 feet through, of the golden *Adiantum Williamsi*, the pale colour of which is very effective, and forms a striking and pleasing contrast with the dark hue of the foliage of the equally strong-growing *Pteris umbrosa*. Among the reputed warm kinds may also be seen grand specimens of *Nephrolepis exaltata*, *N. davallioides* fuscans, and the curious Stag's-horn Fern (*Platynerium alciorne*) growing with unwonted vigour among such acknowledged cool Ferns as *Asplenium biforme* and *A. bulbiferum*, *Pteris argyrea* (which attains very large dimensions), *Nephrolepis tuberosa*, and others. Some of the rugged parts of the side walls are so completely clothed with *Nephrolepis tuberosa* as to form a magnificent feature; for, although growing under cool treatment, most of the fronds measure over 4 feet in length, and hang gracefully to within 3 feet or so of the ground, while the intervening space is elegantly and judiciously filled with masses of *Adiantum cuneatum*, *A. gracillimum*, *A. decorum*, and others.

The lightness of the Fern vegetation is further rendered more striking by the introduction, in the background, of *Woodwardia radicans*, with bold and massive foliage, and also of such Palms as *Kentia*, *Rhapis flabelliformis*, *Dracæna indivisa*, *D. Neo-Caledoniæ* and other plants. All the above mentioned are planted permanently in the fernery, in which places are also cleverly reserved for putting coloured foliaged plants, such as *Caladiums*, *Crotons*, red and variously coloured *Dracænas*, &c., all of which greatly add to the interest of the place by giving it a sort of life, which is frequently found lacking in a place where Ferns are exclusively grown. The architecture of this place is interesting; the walls on both sides are of the same height, while the roof, consisting of ridges and furrows, is supported by iron columns, which from the base to the summit are entirely covered with vegetation. In some cases *Ficus repens* is employed with advantage for that purpose, but in others, the columns, in a way most ingeniously devised by Mr. Humphrey, are made to represent a perfect mass of *Adiantum*, which is very effective. This really beautiful effect has been obtained through placing at regular intervals some sort of cast iron pans, about 4 inches deep, which entirely surround the columns, and which, being placed one over another at a distance of about 15 inches, give plenty of room for the *Adiantums* planted

in them to develop themselves. No space is left between the drooping fronds of the plants above and the erect ones of those below, so that a perfect and regular column of Maiden-hair foliage is obtainable at all times.

The rockwork is entirely made of brick burrs cemented together, this being considered the most porous and suitable material. In addition to the rockery to which I have just alluded, there is a little miniature serpentine lake, the banks of which, being planted with *Selaginella apoda*, are very pretty. Above this miniature lake, arches of light rockwork, tastefully planted and connected together by long elegant festoons of *Lygodium scandens*, produce a pleasing effect and add a fictitious length to the size of the place, the dimensions of which, however, are such as to allow a dozen Tree Ferns of large size being planted in it and to have plenty of room there for the spreading of their stately heads. There are also large plants of the New Zealand *Dicksonia antarctica* and *D. fibrosa*, *Cyathea dealbata*, *C. Smithii*, and *Alsophila Cooperi*, as well as specimens of the African *Cyathea Burkei* and gigantic plants of the Mexican *Cibotium princeps*, *C. regale*, and *C. spectabile*, all doing well, notwithstanding the different countries from which they individually hail. In many instances the base of these Tree Fern stems is covered with *Selaginella apoda*, which besides thickly clothing the surface of the soil gradually encroaches on the stem, which it eventually partly covers and renders still more attractive. Such a fernery is all the more to be commended, as when the plants are once established they require but very little attention, and the whole place gives the gardener comparatively little trouble. S.

CHRYSANTHEMUMS.

OUTDOOR CHRYSANTHEMUMS.

AS pot plants for the embellishment of conservatories during the autumn and winter months, Chrysanthemums are known to most gardeners. The same, however, cannot be said of them so far as their outdoor culture is concerned; indeed, comparatively few appear to trouble themselves on that score. Why is it so? Is it because those responsible for the management of gardens are ignorant of the merits of the Chrysanthemum as an outdoor plant? Or is it because the mania for big, lumpy, and ineffective blooms, which are too frequently the result of pot cultivation, still occupies the minds of lovers of the Queen of Autumn flowers? In either case a reformation is needed, and a better acquaintance with Chrysanthemums as outdoor plants established.

There are many reasons why Chrysanthemums should be grown more extensively in the open air. The first and most important reason, perhaps, is because they possess exceptional decorative merits, which are shown off to advantage during the months of October and November, when the majority of other plants in the garden are flowerless. Then, if slight protection be afforded them, they will continue to yield a supply of flowers until late in December. This alone should induce lovers of outdoor flowers to give them a place in their gardens. Another reason why more attention should be paid them in this direction is their usefulness for cutting. Cut flowers at this season of the year are not over-plentiful, and even those few we have are procured at a considerable cost. Therefore, the mere mention of plants which produce an almost inexhaustible supply of bloom, useful for a variety of purposes, for a minimum amount of labour should be sufficient recommendation to ensure their extensive culture.

Everyone who has grown Chrysanthemums as pot plants will admit that to attain anything approaching success involves a considerable amount of labour and expense, not to mention the worry and anxiety the cultivator generally experiences. From the time the cuttings are inserted until the blooms have lost their beauty the plants require constant watching and so much attention, that it is doubtful

almost whether the cultivator is repaid for his labour and anxiety by the generally short display of bloom which characterises the majority of collections of pot Chrysanthemums. But how different is the case with those grown in the open air. The few growers who have recognised this phase of Chrysanthemum culture experience none of the worries and troubles of the "pot plant" man. In the first place, they have no potting and repotting to do; and secondly, no airing and comparatively little watering—both terrible anxieties with the pot cultivator. Then, again, no disbudding, or very little, is needed; and further, there are but few insect pests to deal with, for, curious as it may appear, outdoor Chrysanthemums are rarely attacked by vermin of any sort. This brings us to a point which may in the interest of growers generally be worthy of further comment, and it would be interesting to know the opinion of authorities on the matter. A week or two ago, whilst in one of the midland counties, I visited a garden where the pot Chrysanthemums had suffered terribly from the attacks of mildew, so much so that they were comparatively worthless. The man in charge was acknowledged to be a good gardener and understood his business well, but he failed to check the growth of this parasite. Sulphur and other antidotes generally recommended were used unsparingly and persistently, but all to no purpose; the enemy had become firmly established and could not be dislodged. But now comes the strange part of the story. Within a few feet of the pot plants a row of Chrysanthemums was planted out, these being at the foot of a low wall, and while the pot plants were rendered useless by mildew, those planted out escaped, not a single leaf, so far as I could see, being attacked. Why is this? The leaves of the pot plants were also attacked by a leaf-mining maggot and green-fly, while those planted out escaped.

Possibly some growers and others who love to run in the worn track only will attempt to raise an objection to outdoor Chrysanthemum culture, basing their argument on the ground that the plants are not sufficiently hardy, or that frosts and wet will destroy the flowers before they are developed. In some cases and localities I admit there would be just grounds for doing this, but there are exceptions to the rule. There are few southern gardens where Chrysanthemums will not thrive in the open air and bloom profusely from October until December, especially if planted at the foot of a wall. In the midland counties, too, as in the instance mentioned above, I have seen them do remarkably well; while even in northern gardens they may be established with advantage.

The best plants for establishing in the open air are those which have bloomed in pots the previous year, and these should be planted out in April. If at the foot of a wall, where the soil is generally dry and of a poor character, some thoroughly decayed manure should be incorporated with it. If the soil be heavy it is advisable to replace it with a compost of loam and refuse from the potting bench just where the plants are to be put, in order to give them a start. The soil about them should be made quite firm, as this conduces to a firmer and stouter growth, which, consequently, is productive of a better display of bloom.

In advocating the culture of Chrysanthemums in the open air, I do not wish to say that the generally recognised system of growing them in pots should be discouraged. Far from it. But I maintain that at present the decorative merits of Chrysanthemums are sadly abused. Chrysanthemums may be used far more largely, and seen to better advantage than they are in the majority of gardens.

When selecting the plants for outdoor culture, discretion must, of course, be used. To plant out novelties or unknown and weakly varieties would be to court failure. The pompon kinds are particularly well adapted for open-air culture, especially Rosinante, Snowdrop, and White Trevena, the two latter being very useful for cutting. Many of the reflexed varieties I have seen do remarkably well in the open air, also incurved kinds. Among

the best for this purpose are George Glenny, Mrs. G. Rundle, Jardin des Plantes, Mrs. Dixon, and similar well-trying sorts.

C. L.

CHRYSANTHEMUM NOTES.

THE CAMBERWELL COLLECTION.

THE Chrysanthemums in the nursery of Messrs. Davis and Jones at Camberwell are evidence, if any were wanted, of the complete indifference of the plant to its surroundings. It adapts itself to circumstances. The colours may be brighter, richer, and clearer in the pure air of the country, but smoke and fog have no serious effect on the quality of the flowers, nor on the constitution of the plant. This is seen in the splendid growth of the Chrysanthemums in this nursery. They are not too tall, and clothed from top to bottom with rich green leafage that betokens vigorous health, a relief from the legginess that prevails generally. The plants now in flower are arranged principally in a large house, and grouped so that the eye rests upon nothing but flowers, not too closely placed as to prevent a proper view of the rich variety of old and new kinds. The Japanese varieties are at their best, and amongst the rich assortment were excellent blooms of Hamlet, a variety sent out by Delaux, and distinct from the Hamlet of M. de Reydellet. The flower has the full beauty of the Japanese type, the colour bright cherry-rose with a shade of salmon, the reverse of the florets yellow. Also conspicuous for colour and finish were the flowers of Ralph Brocklebank, the yellow-coloured sport from Meg Merrilies; Mlle. Louise Leroy, a very pure white; Duke of Berwick, Avalanche, Thomas Stevenson, buff-yellow; and Etoile de Lyon, which is not too coarse when not forced to its utmost limit of size. A very pretty flower is the variety called the pink Mlle. Lacroix, a free, graceful flower of a lovely shade of pink; it is also known as J. R. Penson. Marvet-Postula is a charming variety, dwarf, and with flowers of a rich heliotrope colour shaded with rose. In the country this heliotrope colour is richly brought out. Petit Antoine is of a soft silvery rose-purple, and a good variety. The incurved section is, as usual, especially well represented. In the large house were groups of those two splendid new varieties, Violet Tomlin, a sport from Princess of Wales, the colour rich violet, and Miss M. A. Haggas, a sport from Mrs. Heal, the finished form of which it retains, but the colour is a soft shade of yellow. There were excellent flowers of the leading Japanese Anemone varieties, especially the new M. Charles Lebrun, described on page 402, and the large collection of single varieties showed the increasing interest taken in this class. The Chrysanthemum has made a home in smoky Camberwell, as close to the nursery of Messrs. Davis and Jones are several ardent amateur cultivators, notably Mr. Fraser, who grows the flower with marked skill, although he only has a narrow London garden and a small greenhouse.

SINGLE VARIETIES.

The past three years have seen a complete change in the position of the single Chrysanthemum. Like the single Dahlia, it was regarded as a thing of nought, but now new varieties are raised each season. The variety Lovely, shown by Mr. Owen recently, is a good addition; the flowers are rich rose with a ring of white in the centre. Such varieties as Jane or Snowflake, white, and Miss Gordon, pink, are the most refined and elegant of the class, the flowers forming a graceful fringe of florets quite unlike those of Mary Anderson, in which the florets are smooth, broad, and tinted with rose. Pure Gold is a rich decided yellow and most showy; and then we have Admiral T. Symonds, the type of the big-flowered single Chrysanthemum. A large mass of this was just bursting into bloom in the Camberwell Nursery. The great advantage of the single varieties is their use as cut flowers.

SCENTED FLOWERS.

One attribute of the Chrysanthemum is its fragrance. This is of different degrees, sometimes so pronounced and aromatic as, like the Great Eastern Poppy, to preclude it from the epergne. There are a

few pleasantly scented varieties, and last season in THE GARDEN a useful discussion was raised as to the most useful in this respect. The old Progne smells pleasantly of Violets, and another variety, Saint Leonard, mentioned in THE GARDEN, Nov. 2, p. 403, has in a much stronger degree this refreshing perfume. I never saw this reflexed variety until the other day at Chiswick, where there is a collection of all known kinds as far as could be possibly got together. Now that Chrysanthemums with pleasant scent are in demand, the variety St. Leonard should not be overlooked. Much has been done to discover varieties which have a sweet fragrance by offering prizes for them, and raisers of Chrysanthemums would do well to develop what is a very pleasing trait in the great autumn flower. The sweetest scented are Dr. Sharpe, Progne, the single-flowered Mrs. Langtry, the Anemone-flowered Dick Turpin, and the reflexed St. Leonard. Notes on others as good would be welcome.

EXHIBITING CHRYSANTHEMUMS.

It is difficult to prevent the stereotyped displays of Chrysanthemums, as formal as the exhibitions of Dahlias, Carnations and Roses, while so many prizes are offered simply for cut blooms. It would make our exhibitions more interesting and give amateurs, who do not simply aim at size of bloom, a better chance of obtaining rewards if prizes were given for blooms cut with a good length of stem, so as to show the condition of the foliage. This is done by some societies, but it might be still more extended. Exhibits of this character show the plant in its true character, and guide those who use the exhibitions as means of obtaining information on various points, as many intending growers regard the shows as of the highest educational value. But disappointment can only result, when plants grown by them fail to produce the noble flowers seen on the exhibition stage. To gain such examples requires the skill of the professional cultivator, who uses every means at his command to force the flower to its utmost dimensions, sacrificing the appearance of the plant in the endeavour. The reflexed flowers with their gracefully recurved florets would make a pretty show cut with several inches of wood. The singles and Japanese are also suitable for showing in this way. I remember seeing the primrose-coloured reflexed variety Elsie shown with a good length of stem, and the flowers were far more beautiful than when simply cut and placed on the board, like Zinnias and African Marigolds. We hear many remarks as to the dressing of Chrysanthemum blooms, the lawfulness of the custom, and so forth, but if the incurved flower is to be presented in the perfection in which we see it at shows, dressing must be practised to a certain extent.

MRS. ALPHEUS HARDY.

The flowering of this strange and beautiful Japanese variety reveals to us a wealth of distinct and novel varieties hidden away in Japan. The note in THE GARDEN (p. 403) sufficiently describes this novelty, and our only hope is that it is the beginning of a new race. There are sure to be more of its kind at present unknown to us, as the more we see of these introductions the more we are impressed by the remarkable perfection of the flowers in Japan. Avalanche and Edwin Molyneux were the two first to open our eyes to the rich treasures of that land; now we have Mrs. Alpheus Hardy, as distinct a variety as ever was sent to this country, to add still further zest to the cultivation and improvement of the Chrysanthemum in England. The Continental introductions are completely overshadowed by the marvellous beauty of the imported acquisitions.

TWO FINE YELLOW VARIETIES.

The two finest yellow varieties at present in bloom are Sunflower and President Hyde. The first of the two belongs to the Japanese class. It was sent out by Messrs. Cannell and Sons, and is a rich Japanese kind, the florets deep yellow, long and drooping, making up a full, handsome and showy flower. It is in unusually fine condition this season. President Hyde belongs to the Japanese reflexed class. It was certificated by the National Chrysanthemum

Society on Oct. 23 last, and is of the same rich yellow colour, which deepens in the centre. Next season we should see much of this useful and brilliant flower. It possesses one especial trait, and that is natural dwarfness of habit, a point of importance in the Chrysanthemum. We need to encourage varieties with flowers as faultless as it is possible to have them, but with the plant of a dwarf habit. This can be obtained by the "cut-back" method, which, unfortunately, does not answer in the case of every variety, and by it we also lose "size" in the bloom. A race bearing flowers as large as those seen in winning stands and of dwarf habit is worth striving for.

CHRYSANTHEMUMS AT DEVONHURST.

In several gardens in the vicinity of Chiswick Chrysanthemums are grown well, and one amongst the number is that of Devonhurst, where Mr. Wright has a good collection of leading kinds, as Ralph Brocklebank, Edwin Molyneux, the rich magenta Mme. de Sevin, Mme. J. Laing, Baronne de Prailly, Soleil Levant, and the new incurved Mrs. Norman Davis. The specimens of Elsie, Mlle. Lacroix, Mrs. Rundle, and Golden George Glenny are full of bloom, but the damp of the last week has affected the flowers considerably. It is the complaint on all sides, and will tend to shorten a too brief season.

A VARIEGATED VARIETY.

A monstrosity shown as a new variety at the recent conference was a variegated variety with a poor, ill-shaped yellow flower. What object there is in growing such diseased and unsightly freaks is difficult to conceive, unless to show what a wretched thing a Chrysanthemum is when its rich green leaves become marked out in lines of dirty white. Several years ago a variegated Chrysanthemum named Sensation was much used in bedding. It was useful in its place, and the variegation was both pretty and constant. The new variegated variety is, unfortunately, without merit. C.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL CHRYSANTHEMUM EXHIBITION.

THE first celebration of the centenary of the Chrysanthemum was the conference and exhibition in the Royal Horticultural Society's Gardens on Tuesday and Wednesday last. It well ushered in the interesting event to be celebrated during this and the next season in both England and France. The society were wise in altering the dates from the 11th and 12th to the 5th and 6th, as the great Chrysanthemum campaign is only just opening, so that many exhibitors were able to bring flowers, and advantage was taken of the unusually early season, which promises to be of brief duration. The schedule comprised thirty-six classes, scarcely more than half of which were filled, and not a single trained specimen appeared, although eight classes were allotted this division. It was unfortunate there was not a good muster, as only plants for conservatory decoration were to be shown, and not, happily, mere specimens of the trainer's art, but of useful plants for ordinary decoration, a set-off against the severe mop-headed training fortunately now dying out. The conservatory was almost filled with flowers, for the most part consisting of a few excellent groups and the collection of 900 varieties grown in the Chiswick gardens of the society. An endeavour has been made to obtain every known kind, and a glance through the various sections reveals a number of old-fashioned types rarely seen, except in such a unique display as here presented. Considering the inadequate help which Mr. Barron obtains, the plants were well grown. The prettiest group was made up of pompon varieties such as the pure white La Purité, the golden yellow Aigle d'Or, the chestnut-red Black Douglas, the white Princess Marie and Mlle. Marthe, and the pink, beautifully shaped Mlle. Elise Dordan. There were excellent flowers on the Japanese varieties—Alice Bird, a clear rich yellow; Hamlet; M. H. Jacotot, ivory

white; Duke of Berwick; Mme. Melanie Fabre, a small-flowered variety of a lovely rose colour; and Helvete, another pretty kind, flowers small, neatly shaped and cherry-rose in colour. An extremely interesting variety is Tisiphone, a single flower with a mass of cut papery florets of a pale chestnut-red. A good group of plants, for the most part grown naturally, came from the Royal Gardens, Kew; and here we could see the rich beauty of specimens when not pampered by undue stopping and tying. There were charming plants full of flower of Elsie, Bouquet Fait, Source d'Or, Triomphe du Nord, Jardin des Plantes, Hiver Fleuri, Val d'Andorre, Elaine, and Mme. Mezard, a rich, purple-crimson coloured flower. Plants grown in this way are far more graceful and, of course, more freely flowered than those severely trained simply for exhibition. One of the best groups was that from Mr. Ballantine, gardener to Baron Schröder, The Dell, Egham. The plants were admirably grown, the flowers in true character, fresh, clean, and well coloured. Some of the finest flowers we have seen this season were those on plants of the rich cherry-rose coloured Mme. J. Laing; the orange-red William Stevens; Mr. Matthews, rich buff, petals broad; Bonington, cherry-rose, a full, handsome flower; Stanstead Surprise, and Mlle. Lacroix. There were also other leading Japanese and incurved varieties. Mr. G. Stevens, Putney, exhibited a large group of various types, containing excellent flowers of the soft-coloured Coquette de Castile, the rich yellow reflexed Japanese President Hyde, Mons. Freeman, cherry-rose; Ralph Brocklebank, the yellow-coloured sport from Meg Merrilies, and the beautiful pompon Mlle. Elise Dordan. A similar exhibit was made by Mr. Charles Turner, of Slough, who had the leading Japanese varieties in full character. Messrs. Fromow and Sons, of Chiswick, also exhibited a group.

The most important class, for the best representative collection of all sections, was fortunately well filled. A charming display was made by Mr. Molyneux, Swanmore Park Gardens, Bishop's Waltham, whose flowers showed that this grower has lost none of his old prowess in the culture of the Chrysanthemum. All the sections were represented. The incurved were of the finest finish, faultless regarded from the standpoint of a true incurved flower. The two new sports, Violet Tomlin and Miss M. A. Haggas, were in true character, and in the stand of reflexed varieties were finely finished flowers of the rosy blush Phidias, Cullingfordi, and the Christine family. Such noble Japanese flowers as Edwin Molyneux, Maiden's Blush, Mlle. Lacroix, Mons. Bernard, a very full flower, the florets lilac-purple; Jeanne Délaux, and Sunflower were beautifully shown. Both Anemone and large Anemone flowered varieties were exhibited, and also a large series of singles both from disbudded plants and those left untouched. For size and finish the flowers on the disbudded plants were the finest, especially Jane, or Snowflake, pure white; Mary Anderson, the rich yellow Admiral T. Symonds, Souvenir de Londres, a rich crimson flower, bright and handsome; America, blush-white; and Lady Churchill, pale chestnut-red, very distinct. A curious section is that known as fimbriated; the flowers are rather small, but very full; the florets fimbriated, of about equal lengths and forming a compact, even flower. Mr. C. J. Salter had a large series of varieties. Amongst his Japanese kinds were beautiful blooms of Mr. J. Laing, W. and G. Drover, Jeanne Délaux, Mons. Astorg, Fimbriata, and Yokohama Beauty, which has thread florets of an orange colour. The Anemone, reflexed and incurved sections were also exhibited in true character, and the flowers finely coloured. Mr. Molyneux and Mr. C. J. Salter, gardener to Mr. T. B. Haywood, Reigate, were the only amateur exhibitors in this class, but three of the leading trade growers showed collections. Messrs. H. Cannell and Sons, of Swanley, had a collection of 260 varieties, running through the various sections of the Chrysanthemum. Such beautiful pompons as Mlle. Elise Dordan; Eclipse, chestnut tipped with gold; Mlle. Marignac, purple-rose; Stella, a very bright yellow kind; and Mlle. Marthe. Amongst the reflexed were the yellow-flowered President Hyde,

and of single-flowered varieties, Jane, white, and Yellow Jane, rich golden yellow, and, except in this respect, an exact counterpart of the type, were the two finest. Messrs. Cannell had excellent flowers of Swanley White, the pale primrose-yellow Moonlight, Macaulay, a curious bloom like nibbled Endive; Sunflower, Lady Lawrence, remarkable for the breadth of its wavy white florets; Stanstead White, and Alcion, a picturesque flower, rich red, with the edges of the florets sufficiently upturned to show the silvery reverse. Amongst the incurved, Violet Tomlin and Miss M. A. Haggas were conspicuous for colour and finish. Mr. Owen, of Maidenhead, also had a representative collection of the leading kinds, amongst them several of the principal new additions that have been made in the past two or three seasons. He had excellent flowers of Mrs. C. Orchard, rich yellow, shaded with bronze; Miss Gorton, lovely pink; Anatole Cordonnier, a rich purplish-coloured Japanese variety; M. Pankonke, the new large Anemone-flowered variety, the guard florets dull red, the disc shaded with orange; Gladys Spaulding, a variety of the same section, rich yellow disc, paler outer florets; and Edith Owen, a good single kind, the colour rich magenta.

There were classes for distinct sections, and in that for twelve large Anemone varieties Messrs. Paul and Son, Cheshunt, showed beautiful blooms of Sabine and Thorpe Junior. The cut Japanese flowers throughout were unusually fresh and characteristic. Mr. E. S. Miles, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, had a collection of the leading kinds; also Mr. W. Fife, gardener to Lord Wantage, Overstone Park, Northampton; and Mr. W. Pope, The Gardens, Highclere Castle, Newbury. Messrs. W. Clibran and Son, The Nurseries, Altrincham, Cheshire, showed excellent flowers of the newer and older varieties. Mr. Wildsmith, of Heckfield, exhibited beautiful blooms of Ralph Brocklebank, Mme. Laing, Mme. C. Audiguier, L'Adorable, and Avalanche. Mr. Falconer Jameson had typical specimens of the large-petalled Boule d'Or, Sunflower, and Mrs. Falconer Jameson, light brown, shaded yellow. Classes for flowers of one or two colours were provided, and for the most part fairly well filled. For twelve lilac or pink-flowered Japanese, Mr. G. Burnett, The Grange Gardens, Hillingdon, showed fine blooms of Mme. Laing and Mme. C. Audiguier, and the same exhibitor had charming red or crimson flowers, showing Val d'Andorre. For orange or bronze-coloured flowers Mr. Burnett exhibited Roi des Japonaise in true character. Mr. Doughty, gardener to Mrs. Tomlin, Angley Park, Cranbrook, had twelve remarkably well grown Elaine, exceptionally pure; and Mr. R. J. Falconer Jameson, Hesse, Hull, also had twelve white flowers of excellent culture, comprising Avalanche, Mons. Astorg, Florence Piercy, and Elaine. Mr. E. Berry, The Gardens, Roehampton, exhibited Avalanche, Maiden's Blush, which can be scarcely called true white, and Mlle. Lacroix. The incurved flowers were of exhibition standard. Mr. Molyneux had twelve faultless blooms, remarkable for evenness of quality and colour, of Golden Empress of India. Mr. E. Berry exhibited Golden Empress and Emily Dale in fine character. A pretty collection of twelve pompons came from Mr. C. Gibson, Morden Park Gardens, the flowers unusually well grown. Mr. Wildsmith had twelve faultless flowers of leading reflexed varieties of the Pink and Peach Christine, Cullingfordi, and King of Crimsoms. Mr. Wildsmith and Mr. E. Berry both showed a collection of twenty-four incurved blooms.

Messrs. J. Laing & Sons, Forest Hill, had a large collection of Japanese and incurved, having of the former section the coarse-petalled Condor and Mrs. F. Jameson, and of the latter Violet Tomlin.

The class for new varieties was naturally of much interest, but there was no new flower of unusual excellence, except what are already known. Messrs. W. Clibran and Son exhibited the beautiful variety L'Automne, certificated last season as an incurved, but it has as much the character of a Japanese as any other section. The florets are broad, disposed regularly, but not in the finished

manner of a true incurved, and clear buff of a charming shade. And the same firm also had the coarse-petalled *Etoile de Lyon*; Alfred Lymes, a rich violet incurved flower, a sport from Novelty; Stanstead Surprise, Thomas Stevenson, both Japanese; the Japanese Anemone-flowered Jeanne Marty, and Anne Clibran, a sport from Mlle. Lacroix, but too much like Belle Paule in character to warrant special distinction. Messrs. J. Carter and Co., High Holborn, had a plant of a variety introduced from Japan this year. The flower is curious, but of little value. It is about $1\frac{1}{2}$ inches across, with thread florets pale yellow in colour; Holborn Beauty, another introduction from Japan, the flowers yellow, shaded pale brown and reflexed; and the reflexed James Carter, rich gold-yellow. Mr. T. Winkworth, gardener to Mr. Brocklebank, had flowers of a supposed sport from Ralph Brocklebank named Mrs. Bevan Edwards, but except for a deeper shade of colour, the result possibly of cultivation, there is not the slightest difference between the two. Mr. W. Heath, Hampton Manor Gardens, sent a sport from Mme. J. Laing named Lady Pet; the flowers are full, of good form, and yellow flushed with pale brown. Mr. G. Stevens, Putney, sent the rich yellow pompon Alice Stevens, which ought to be prized for its intense colour and freedom. Mr. Molyneux showed a reflexed sport from George Glenny, named Mrs. Horril; it is a decorative variety, very free, the flowers small, but softly coloured with yellow. The same exhibitor also had superbly finished blooms of Miss M. A. Haggas, Violet Tomlin, James Weston, a beautiful Japanese Anemone variety, the long drooping guard florets of the purest white; the disc pale yellow; and The Puritan, an American Japanese variety, the petals broad, white, flushed and striped with magenta, a full, handsome flower. A large display of *Etoile de Lyon* was made by Messrs. H. Cannell and Sons, and Mr. T. S. Ware exhibited a specimen of Mrs. Alpheus Hardy, described on p. 403.

One exhibit of considerable interest was the stand of flowers of the leading Japanese varieties from Mr. R. Parker, Impney Gardens, Droitwich. The blooms were cut from plants put out against a wall and in ordinary soil. They were protected from heavy rains by a few boards; the blooms would not have made a bad figure on the exhibition stand. There were also classes for appliances for showing and growing Chrysanthemums.

An interesting series of dried specimens of the wild progenitors of the Chrysanthemum came from the Royal Gardens, Kew, and coloured illustrations from Dr. Masters. Mr. F. W. Burbidge, Trinity College Gardens, Dublin, showed several old Japanese works, in which the Chrysanthemum is either mentioned or illustrated. A beautiful specimen of Satsuma was shown by Rev. W. Wilks, a small jar of exquisite workmanship, showing the Chrysanthemum in various shades of blue, some quite pale. Mr. Wilks also had a beautiful bowl of the same ware. Mr. Hibberd exhibited a Japanese cloisonné jar with Chrysanthemums portrayed in a rich deep blue colour, almost purple.

A meeting of the fruit and floral committee was held on the first day.

FLORAL COMMITTEE.—No certificates were given, but there were a few exhibits. Messrs. J. Veitch and Sons had a remarkably well-grown plant of *Begonia Adonis*, the hybrid between John Heal and a tuberous variety. There can be no two opinions as to the value of this winter-flowering section. Cut blooms of greenhouse *Rhododendrons* came from the same firm. *Vriesia Mariæ*, a hybrid between V. Barilletti and brachystachys, was shown by M. Truffaut, of Versailles. The bracts are rich crimson at the base, the remainder deep olive-green dotted profusely with brown. Mr. F. Ross, Pendell Court Gardens, had cut sprays of *Buddleia auriculata*, a late flowering shrub bearing a number of small globular heads of pale brownish, deliciously scented flowers. For its fragrance alone, a note should be made of this *Buddleia*. Mr. Cowley, gardener to Mr. Tautz, Shepherd's Bush, showed a plant of *Angræcum ichneumonum*, bearing long pendent spikes of waxy, creamy white flowers, not

unlike in expression those of *Habenaria bifolia*. The same exhibitor also showed *Trichosma suavis trilabellia*, which is distinguished by having three lips, or rather three petals of precisely the same character. Except for this peculiar trait, the flowers are like those of the type in both colour and size. *Cynoches musciferum*, or *Polycynis muscifer*, flowered by Mrs. Lawrence at Ealing Park in 1849, was also shown. It is an interesting species with an upright spike of flowers, prettily and clearly barred with pale brown. A splendid group of about fifty plants of Miss Joliffe *Carnation* improved came from Mr. John Jennings, gardener to Leopold de Rothschild, Ascot. The plants were full of flowers which are of a deeper pink and larger than in the type. A silver medal was given for this unique display of one *Carnation*.

FRUIT COMMITTEE.—A fruit of *Monstera deliciosa* was exhibited by Mr. Wythes, of Syon House Gardens. The flesh is mealy, but with a rich aroma, something like that of the Pine-apple with a dash of Banana. Ten varieties of Grapes, including a good cluster of Golden Champion, were shown by Mr. H. Balderson, Hemel Hempstead; and a basket of Mushrooms from a bed spawned the second week in September by Mr. Miller, gardener to Lord Foley, Esher.

The Conference.

There was a large attendance of those interested in the Chrysanthemum to hear the series of papers read on each of the two days. The president, Mr. T. B. Haywood, of Reigate, presided, but was unable, through loss of voice, to give an address, and a paper prepared by him was read by the secretary, the Rev. W. Wilks. There were two salient points in this interesting paper worth special notice. He said gardeners laid too much stress upon size in the flowers. We have constantly urged that too much is made of mere size in the blooms, and intrinsic beauty and finish regarded merely as secondary considerations. "A too big flower is far less beautiful than a too small one," were words of the speaker that conveyed much meaning—a protest against forcing a flower to its utmost dimensions. Another good point was the suggestion that more interest should be shown in the hardy garden sorts which would stand damp and fog. While we are paying almost exclusive attention to the indoor varieties, the rich merits of the outdoor varieties are overlooked, but a good race of hardy late kinds would be of inestimable value in the garden. The first paper on Tuesday was by Mr. Harman Payne, on the history of the Chrysanthemum. The writer himself was unable to be present, but the paper read showed a thorough research into the history of the Chrysanthemum from the earliest ages. This interesting paper was followed by one of much practical value from Mr. Molyneux, who dealt in a concise way with new varieties. He strongly condemned the loose way of describing the colours of new flowers and the sending out of varieties that are new in name only. It is annoying, after spending money and time in cultivating what is thought to be improvements upon existing varieties, to find that they are neither new nor any advance on others. With a better system of proving accurately whether varieties are distinct, more confidence would be felt in new varieties. Mr. Molyneux instanced, as a case in point, Belle Poitevin, described as an incurved variety, but which turned out to be nothing but Mrs. G. Rundle. A list of the best varieties in the Japanese and incurved sections was given, and also of those new kinds that were likely to retain their position. During the last ten years only fourteen varieties have been added to the incurved section likely to keep their place, and Mr. Molyneux referred to Lord Alcester as the finest type of incurved, and to the excellent quality of Mr. Bunn. The variety which has produced the largest number of sports latterly is Princess Teck. Mrs. Norman Davis sported from the type in 1886, and in time produced Charles Gibson, bronzy red, cinnamon centre; Lord Eversley, a sport from the original type, followed by Lady Dorothy, which is paler in colour than Charles Gibson. Princess of Wales and

her offspring, Mrs. Heal, have latterly produced two splendid varieties, Violet Tomlin and Miss M. A. Haggas, the form of each being quite of the best. With the exception of Bronze Queen of England, introduced about three years ago, no new variety has come from the Queen of England family. The Japanese section is much more productive of new varieties than the incurved class; and he instanced Edwin Molyneux, Avalanche, the finest white in cultivation, Mme. Louise Leroy, Eynsford White, as possessing exceptional merits amongst the new kinds. The large Anemone class has a few good varieties likely to maintain their reputation. M. Pankoncke, Nelson, and Sabine, a welcome addition to its class, in which there is little range of colour; J. H. Taylor, Mrs. Annie Lowe, a first-class variety, and Thorpe Junior. The Japanese Anemone class has now good additions in James Weston, a most interesting introduction of this year; Souvenir de Blandinieres, and Jeanne Marty, which, although introduced in 1886, has not until this season become well known. The single varieties are increasing, and Jane or Snowflake was given as the best white. The pompon and Anemone pompons call for little mention, except that Mlle. Elise Dordan is a rich acquisition to the former section.

This paper was followed by one from Mr. J. Wright on judging Chrysanthemums, and by Mr. Shirley Hibberd, who reviewed the progress of the flower. On the second day the conference was opened by a paper by Mr. F. W. Burbidge on seed and seedlings, followed by Mr. C. Orchard, who dealt with dwarfing and grouping Chrysanthemums. Market Chrysanthemums formed the subject of a paper by Mr. C. Pearson, and summer and early autumn Chrysanthemums by Mr. W. Piercy.

NATIONAL CHRYSANTHEMUM SOCIETY.

ON Wednesday, the 30th ult., there was a general committee meeting held at Anderton's Hotel, when, owing to the indisposition of the chairman, the late president, Mr. Sanderson, occupied the chair.

After the usual opening formalities, Mr. William Holmes presented the report of the committee appointed to consider the subject of the proposed centenary conference and show in 1890. He stated that the committee recommended that the centenary celebration be held in conjunction with the society's ordinary November show, and take the form of a four days' *fête*, and that the Aquarium Company had offered the sum of £200 towards the prize list instead of £100, as usual. It was resolved that the offer be accepted and the centenary festivities held as suggested.

A question having arisen as to allowances towards the expenses for cartage incurred by exhibitors of specimen plants, the discussion resulted in the following motion: "That the secretary be empowered to reimburse not more than half the cartage expense, as far as funds may permit, to exhibitors in the specimen plant and group classes, provided they are of sufficient merit and application made within seven days after the show." This was carried.

A few new members having been nominated and elected, the hon. sec. announced that the society's official catalogue was selling very freely, and that the authorities would allow the Aquarium programme boys to offer it for sale during the show.

A letter was read from the Society of York Florists saying that a hearty welcome would be extended to all friends of the National Chrysanthemum Society going to Hull *via* York, as the York show opened the previous day.

In connection with a series of horticultural shows arranged to take place by the directors of the Aquarium during the ensuing year, it was resolved that provision be made for providing prizes for Chrysanthemums at the one to be held in October next.

The hon. sec. reported that he had written to Lord Brooke, the president, asking him to take the chair at the annual dinner, but had not yet received his reply.

It was unanimously agreed that the details as to

the fruit and flower decorations for the dinner tables should be left in the hands of Mr. Bevan, who carried them out so admirably last year.

ENGLISH NAMES OF PLANTS.

MANY a reader of THE GARDEN must have thought it rather singular that anyone possessed of average intelligence should not, long ere this, have thoroughly understood that the question of giving English names to plants does not in any way trench upon the province of the scientific botanist, or interfere with him in the slightest degree. Mr. Elwes, however, still pursues the subject with all the *animus* of one who conceives that he is personally and seriously injured by it, and now even "carries the war into Africa"—I mean America. In his letter to *Garden and Forest* (which I have only just read), however, I can find no greater justification for his hatred of English names than his statement that "for many years English names were coined for new plants in the *Botanical Magazine*, and yet I never hear them used." That is precisely what most people would expect. The *Botanical Magazine* was and is a high-priced scientific work, not likely to find its way into the hands of the many; and yet Mr. Elwes is surprised that the many did not use the English names which its scientifically-botanical editor must have considered to be useful or necessary! Within the last few years, however, garden literature has been popularised to such an extent, that many old and new English names of plants are now familiarly used both by "common English gardeners and ladies," notwithstanding all that Mr. Elwes chooses to assume to the contrary.

It would be merely dilating *ad nauseam* to repeat here the common-sense arguments and reasons which have already been given in THE GARDEN why English names of plants should be used by English-speaking people; but I may mention a parallel case which will exhibit the dilemma in which Mr. Elwes' over-heated championship of "scientific names" places him. The case is this: If we accept and practically carry out Mr. Elwes' dogma of "scientific names and none but these," then anyone who goes to a chemist's shop for a dose of Epsom salts must not ask for Epsom salts, but for "Sulph. Mag.!" If Mr. Elwes says "No" to this, where is his consistency? If he says "Yes," then undoubtedly *solventur risu tabulae*.

The plain truth of the matter is that, in the exclusiveness of his glorification of the "scientific names" of plants, Mr. Elwes is simply airily ballooning over the heads and beyond the linguistic range of the people, who do not, and never will, either understand or care a straw about Latin, whether it be "dog" or classical.—WILLIAM MILLER.

— After the severe editorial remarks on me in THE GARDEN of November 2, I think you must allow a reply. Your correspondent, "J. R. J.," knows a little too much, at least a great deal more than the best American authors to whom I am able at home to refer. He says, "Whatever the meaning of *Spatium* may be, it is as well known as applied to *Lewisia rediviva* as *Sloe* and *Blackthorn* are to *Prunus spinosa*." I had looked up the history of the plant in the three latest and best works on American botany I possess, and do not find either *Spatium* or *Bitter-root* in Sereno Watson's "Botany of the 40th Parallel," 1871, in Coulter's "Botany of the Rocky Mountains," 1885, or in Maccoun's "Catalogue of Canadian Plants," 1883. The two last authors have both travelled in the regions where the plant grows, and both give English or native names for all the plants which have any. When "J. R. J." says that *Bitter-root* is the Canadian name, he is again clearly wrong, because the plant does not occur in Canada at all, and is only mentioned by Maccoun because it is found in the dry interior region of Southern British Columbia. I can find no such name as *Bitter-root* for any plant either in his work or in Asa Gray's "Flora of the Northern United States," which is very reliable for vernacular names. It is possible that some obscure or extinct tribe of

Indians in Oregon may have given the name of *Spatium* or *Spetium* (which is it to be?) to some traveller for *Lewisia*, or for some plant resembling it, but I having read all the recent travels in that part of the world which I can get, and having seen the plant in its own country, had never heard the name till I saw it in THE GARDEN, inserted by some one on the staff of that journal over my own signature. Supposing I retort by using other equally barbarous names for plants, such as "Tchuka," "Choklite," or "Yedi Kartosh Kane," all of which I have heard used for beautiful plants, two of which are well known in cultivation, in countries where I have travelled. I venture to say that neither the editor nor his friend can tell what plants I mean, and yet he expects me to know *Spatium*. I have never in speech or writing expressed "a narrow dislike" for English names which are known and understood, but *Spatium* is a foreign and a barbarous name, which I have shown is not known by the very people who should be expected to have heard it. THE GARDEN was never supposed to be a botanical journal, but all its best correspondents habitually use botanical names, and they cannot help doing so. But when the editor of THE GARDEN tries to introduce a new name, such as *Puddingberry* for *Cornus canadensis* (see GARDEN, p. 404), he had better be sure that he gets the correct one, because both Gray and Maccoun call it *Dwarf Cornel* or *Bunchberry*.—H. J. ELWES, *Preston, Cirencester*.

P.S.—I find on inquiry that the *Botanical Magazine* under plate 5895 gives "*Lewisia rediviva*, *Spatium* or reviving *Lewisia*." So the lovers of barbarous names are justified, and the lovers of English names have got one which I hope will please them.

MARKET GARDEN NOTES.

HEAVY rains and very mild weather have prevailed of late, and consequently in low-lying places work has been delayed owing to the saturated state of the land. In the great majority, however, of market gardens in this locality the work is well advanced for the time of year, and the growth made by all late-planted crops is surprising, and vegetables of all kinds are abundant and cheap.

MUSHROOMS have of late been extremely plentiful, for not only have the open-air beds been producing very freely, but I never remember having seen so many brought in from the open fields during the month of October. Beautiful little buttons by the bushel have been coming in from the surrounding country. The cultivation of the Mushroom appears to be spreading, and not only are more market cultivators making a speciality of it, but private gardeners and amateurs are embarking in the cultivation of what is a profitable crop, if only a suitable place can be secured for the beds. The largest growers in this locality combine the forcing of *Seakale* and *Rhubarb* with the cultivation of the Mushroom, and preparations are now being made for forcing large quantities of both these useful crops, so as to have them ready for Christmas, from which date until they are procurable from the open air a continual succession is kept up. Many acres of roots are now ready for lifting, as it is surprising the quantity it takes to keep a large well-heated house going from this date until May.

CAULIFLOWERS of the Autumn Giant kind are now very fine, the mild showery weather having favoured a luxuriant growth, and they are being marketed as fast as possible, lest a change to frosty weather should destroy them.

CABBAGES put out after the early crops of Potatoes were lifted are now in splendid condition, and are being cleared off before the hardier Savoy and Kales can be disposed of. The planting of Cabbages still goes on briskly, the weather being very favourable.

POTATOES of the latest kinds that were left after the usual date for lifting have in some cases not been lifted yet owing to the heavy rains, but there is an enormous quantity of good Potatoes housed in fine condition, and prices are likely to remain low, except for any special kinds.

RADISHES of the large winter sorts, such as the China Rose and Black Spanish, are largely grown, and invariably sell freely in this locality. Radishes are a very useful crop, as they do not require sowing until the Potatoes are lifted, and they need but little labour to bring them to perfection. The season has been favourable to their growth, and the China Rose is now selling freely; the Black Spanish being the hardier is retained for a later supply.

HORSE RADISH when well grown always realises a good price, and during the winter months there is a constant demand. A deep, well-worked piece of land free from stones and of a sandy nature produces the straightest and best sticks.

APPLES AND PEARS are now being marketed in good condition and realise good prices. Apples are, as a rule, better than Pears in quality and quantity this year, and those who have good clear samples find no difficulty in selling.

PLANTING of young trees is now being pushed on, the mild weather being very favourable for the work. Owing to the absence of frost the leaves have remained fresh and green later than usual; consequently many have deferred the planting for a short time. Dwarf trees are undoubtedly taking the place of the tall standards with market growers, and the demand for these is likely to be great during the next few weeks.

FLOWERS are yearly increasing in favour, and one of the best for market growers is the *Chrysanthemum*. Large quantities of these are grown in the open air, and the plants lifted with good balls of earth at this date are transferred to the glass-houses, from which the crops of Tomatoes, &c., have just been cleared out. The white kinds are in most demand, and after the outdoor flowers are cut off by frosts or their beauty tarnished by heavy rains, those from the lifted plants sell freely, and are, as a rule, profitable. Violets are flowering very freely, thanks to mild weather. The Czar is still the favourite kind, as the leaves are stout and strong, and the flowers rise up boldly on long footstalks.

Gosport.

JAMES GROOM.

Gardeners and gardening.—In a speech given by the mayor of this town, D. M. Ross, at a valedictory supper to a member of our Horticultural Society, who was on the eve of paying a visit to England, the following pithy remark, which is too true and too good to be passed over unnoticed, was made: "When a boy his father strongly advised him not to give a thought to gardening as his future profession, for however pleasing and interesting it might be, the education of a gardener had to be equal to that of an M.D., but his income was only that of a labourer."—T. SMITH, *Timaru, N.Z.*

BOOKS RECEIVED.

"Bulletin of Miscellaneous Information," No. 35, November. Royal Gardens, Kew.
"Orchids: their Culture and Management." L. Upcott Gill, 170, Strand, W.C.

Names of plants.—W. M.—*Sedum reflexum* monstrosum.—W. H. Tuck.—1, *Pyrethrum uliginosum*; 2, *Chrysanthemum maximum*; 3, *Salvia sclarea*.—Dick.—Impossible to name such a specimen.—J. Berry.—1, *Rodriguezia secunda*; 2, *Cymbidium Mastersi*; 3, *Gongora* sp.; 4, *Rondeletia ignea*; 5, *Eupatorium Wendlandi*.—Tindall.—1, *Sansevieria carnea* variegata; 2, *Selaginella pubescens*; 3, *S. caulescens*; 4, *S. viticulosa*; 5, *Pothos macrophylla*; 6, *Hoffmannia Ghiesbreghtii*.—Wm. Alison.—1, *Cirrhopetalum ornatum*; 2, possibly *Dendrobium aureum*; 3, *Alseynanthus longiflorus*.—Farr.—3, *Acalypha musaica*; 4, *Phlebodium aureum*.—John Wood.—*Dendrobium Farneri*.

Names of fruits.—Miss A. Hulce.—1, Vicar of Winkfield; 2, rotten; 3, *Catillac*.—W. J. Sargeant.—Baronne de Mello.—W. Tamplin.—Lady Apple.—Col. Alexander.—Royal Codlin.—M. C.—1, Apple, Hambleton Deux Ans; 2, Glou Moreau; 3, Fondante d'Automne.—Mrs. E. H. Hardy.—1, Fondante d'Automne; 2, Duchesse d'Angoulême; 3, Baronne de Mello; 4, send again; 5, Passe Calebasse.—Congleton.—1 and 2, please send better fruits; 3, Ribston, but quite shrivelled; 4, Baronne de Mello; 5, Bergamote d'Esperance, very poor sample.—D. H.—Pear, Duchesse d'Angoulême; Melon, too rotten to determine.

WOODS & FORESTS.

FORESTRY.

THE mode of planting forest trees varies to a large extent on different classes of soils and situations, and this arises in a great measure from the kinds and sizes of the trees used, and whether the plantation is intended solely for profit or for ornament. On cold, barren, hilly ground the Scotch Fir, Larch, Birch, Aspen, and occasionally a few other hardy species of trees are generally used with success. There are, however, a great many estates in Great Britain and Ireland that contain no barren, hilly ground to be planted, and in such cases the plantations are generally formed with a mixture of hard-wooded and other trees. As pretty large plants, thoroughly prepared during their nursery career, are found to give the best results when properly inserted, pit planting is generally resorted to. In the formation of such plantations it is in many cases the proprietor's wish to have the trees established as quickly as possible. In order to accelerate the growth and healthy development of the trees, the ground should be thoroughly prepared by trenching and draining where necessary. These operations, of course, will entail a little extra expense at the outset, but from the superior growth of the trees they will not be regretted in after years.

When planting is contemplated, the ground should be carefully examined, and any wet spots that may occur should be drained to render the soil dry and firm, and thus increase its fertility. The quantity and depth of the drains must be regulated in a great measure by the wetness and texture of the ground, but in the majority of cases open drains from 20 inches to 30 inches deep will prove efficient. In cutting this class of drains the sides should have a gradual and uniform slope from top to bottom. The bottom of the drain should be of such a breadth as to allow a common spade to be used for cleaning it out with facility. Closed drains should always be avoided in plantations if possible, as in time they attract the roots of the trees, and thus get choked up and cause a deal of trouble and expense. Then again, by trenching the ground, the cold, dormant subsoil below the surface is broken up and pulverised. In ordinary instances the ground may be trenched to the depth of 18 inches or 20 inches, but in cases where the subsoil consists of hard till, it had better be broken up to a depth of 24 inches or 30 inches. When the ground is deeply prepared in this way it is rendered soft and pliable for the roots at the time of planting, and if the plants used have been prepared and selected in the nursery with proper care, success is almost a certainty. The trees to be used in the formation of this class of plantations should be of a good size—two years' seedlings twice transplanted in most cases are very suitable—and it is very desirable that the plants should have been moved in the nursery the season previous to their being placed in their permanent quarters. By this mode of treatment the plants are always well provided with small roots, and can be removed to their final quarters with a better prospect of success than when they have been allowed to remain in the nursery lines for two or more years previous to being planted out. When hard-wooded trees in mixture are to form the permanent crop, these had better be planted at the distance apart where they are to remain, and as this distance varies considerably according to the capabilities of the soil and the exposure of the site, the planter will require to exercise his own judgment. I may, however, state that the per-

manent trees may be planted at a distance apart of from 10 feet to 15 feet, and the intermediate spaces filled up with Larch and other less expensive plants as nurseries. When the trees are being planted the pits should be dug of a sufficient size to allow the roots to be spread out to their full extent, and care should be taken, as far as possible, to prevent any of the larger sized roots from crossing each other. Too deep planting is another evil to be guarded against; young trees should never be planted deeper than what is necessary to give them stability and to keep them in position until they take to the soil.

J. B. WEBSTER.

"SEAMS" IN THE BLACK SPRUCE.

To one passing along the Upper Hudson or the valley of the Sacandaga in summer time, the numerous piles of Spruce logs that have lodged against rocks or on low banks speak plainly of the rapid destruction of the Spruces and of the swiftly contracting areas that are darkened by their shadows. And yet these are but a small portion of the logs that fail to get through to their destination while the spring freshets last.

In the vicinity of Rock River, Hamilton County, many large Spruces have been left standing on land cut over by lumbermen. Why were these trees left? An examination of the trees reveals the fact that they are affected by what lumbermen call seams. A chink or crack extends along the trunk following the course of the grain of the wood. If the grain be straight the seam also is straight, if the grain be oblique the seam winds obliquely round the trunk. These seams sometimes extend nearly the whole length of the trunk. They penetrate the wood deeply, often reaching nearly to the centre, and, therefore, detract much from the value of the tree for lumber. Such trees are consequently left standing when they grow far from the lumber market. If the tree be cross-grained, the seam renders it worthless except for fuel. Externally these seams are bordered by a more or less abundant exudation of resin, which in its dried or hardened state is popularly known as Spruce gum. It is not improbable that the permanent character of the seam is due to the presence of the gum which prevents the healing of the injury. This gum is generally coated by a velvety stratum of black fungoid filaments, which give a blackish appearance to the seams.

Electricity and excessive cold have been suggested as possible or theoretical causes in the production of seams, but neither is to my mind wholly satisfactory. When electricity rends the bark of a tree it carries the injury to the ground, losing itself in the earth, but the Spruce seams generally cease before reaching the extreme base of the tree. Besides, a tree struck by the electric current seldom survives the shock, while seamy Spruces live and thrive. Probably not more than one tree in fifty, on an average, is seamy. Why, then, should one tree be checked by excessive cold, while forty-nine others in the same locality and exposed to the same temperature remain unharmed? It is possible that an unusually thrifty growth or an excessive surcharging of the tender tissues of the sapwood with moisture might give rise to conditions in which intense cold would produce a rupture, but it is hardly probable. It would appear to be an easy matter to determine the cause of the seam by an investigation in its earliest stage or soon after its commencement.

X.

Wax for tree wounds.—Everyone should keep grafting wax on hand, ready for use whenever needed, for it is valuable for various other purposes besides that of grafting. Wounds made in pruning large trees will heal over much sooner if coated with this wax; and if a piece of bark is accidentally stripped from a tree, the place should be covered over with it, and the wood will remain sound and healthy underneath. There are several recipes for preparing this wax, and I have found the following better than any one tried: Melt in a basin 1 lb. of tallow, 2 lbs. of beeswax, and 4 lbs.

of resin; stir well together, and keep in a cool place in the dish in which it was melted. If beeswax is a very costly item, one-third less quantity can be used.—D.

Planting to resist gales.—The damage frequently done to plantations by heavy gales shows the necessity of distributing and arranging the trees in such a way that those best suited to withstand severe storms of wind, and shelter their neighbours are placed in those positions where their presence would prove beneficial. It is equally necessary that proper care be taken when planting to spread out the roots evenly around the plants, and not, as is too frequently the case, to crush them together on one of their sides. Thinning must also take place early and frequently with those so placed, in order to encourage the trees to make a stiff and robust growth, and to be clothed with branches to the ground. If precautions such as those stated be observed, less damage will be the result when the full force of the wind sweeps over the trees.—S.

Season for transplanting trees.—I am of opinion that in some soils transplanting may be done successfully throughout the whole year; in others, autumn, winter, and spring are the best periods; whilst in the summer months and in certain soils the operation is more successful than at any other season of the year. The soils in which transplanting may be successfully carried on at all times of the year are those which are black, rich, and friable and rich deep mellow loams. Autumn, winter, and spring planting may be carried out successfully on warm, light, sandy, and well drained soils, whilst in heavy wet clay the greatest success will be attained in summer. This will, I think, appear perfectly reasonable and natural, the desideratum being to maintain the roots in a healthy condition, heal up the mutilated parts, and induce new growth as soon as possible. The following are the results of experiments in planting in various soils and at different periods of the year. Conifers, including *Abies canadensis*, Douglasi, *Cedrus Deodara*, Libani, *atlantica*, *Cupressus Lawsoniana*, *Picea nobilis*, *Nordmanniana*, *Pinus austriaca*, *sylvestris*, and *Thujas*. In rich black soils and deep mellow loams: Summer, 2 per cent. died; autumn, winter, and spring, 1 per cent. died. In sandy, gravelly, and light warm soils: Summer, 28 per cent. died; autumn, winter, and spring, 6 per cent. died. In heavy and wet clays: Summer, none died; autumn, winter, and spring, 30 per cent. died. It will thus be seen that in heavy and wet clayey soils summer planting was highly successful. The trees transplanted were from 8 feet to 20 feet high, and many had made growths from 4 inches to 12 inches in length; every tree was removed with a ball of earth varying from a quarter to one ton in weight; an average of a cartload of good soil was put round the roots of each, all were mulched with well-rotted manure, and an occasional soaking of water given. These trees showed no signs of suffering in either colour or quantity of foliage; indeed, many benefited by the change, and all are in a most promising condition. The reason of success is perhaps not far to seek, as the earth being in a warm and moist state was in a condition most conducive to root-formation and nourishment.—C. D.

The Red Cedar in winter.—This Conifer (*Juniperus virginiana*), when it grows luxuriantly, is sometimes loaded with beautiful purple berries, which, massed among its dark evergreen foliage, present an exceedingly ornamental appearance. By selecting the berry-bearing trees in their wild localities, a strikingly ornamental effect might be produced.—J.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

THE GOOSEBERRY.

OF all the fruits grown in English gardens I question if any one species is more popular, more useful, or more accommodating than the Gooseberry. It can be grown as bush, pyramid, standard, or cordon against fences, trellises, or north walls, and once a good selection is made it can be propagated to any extent in one's own garden. The fruit, too, can be used so soon as it is large enough for tarts, puddings, under the now fashionable and most sensible mode of preparing fresh fruit as a delicious *compôte* without paste; also for bottling, another popular and economical step, by which at the outlay of a few pence residents in our most populous centres can have cooking fruit equal to fresh throughout the winter. As an article of commerce, whilst yet in a green state it is considered more profitable than the Currant, which must be ripe or nearly so before it is gathered, when, needless to say, waste, greater care in packing and transit, and liability to mould or rot, one and all place it at a discount beside the less tempting Gooseberry. When well packed a bushel of green Gooseberries can be sent from one end of the kingdom to the other, and if, as sometimes happens, the market is glutted, no harm is done, as dry fruit will keep for some days in a good warehouse. A partial clearance of heavily loaded trees, again, whilst bringing a quick return, often gives relief, an important factor in securing good annual crops, independently of the fact that the berries left to ripen attain their full size and flavour. Then, as to this last quality, all classes, I believe, from the Queen to the peasant, like a good Gooseberry. Some there may be whose palates are out of order, but they are few and far between, whilst the majority of the upper classes assert that no other fruit can touch our best varieties. The Gooseberry is not at all particular as to soil provided it is good, fairly moist, not very hot, and free from stagnant water. When choice dessert sorts are planted on warm dry soils they should be well mulched, soaked occasionally and syringed in hot dry weather, that is up to the softening stage, as incessant rain or atmospheric moisture causes much cracking when the fruit is ripe or ripening. Upon such soils the Gooseberry is admirably adapted for growing as a top crop between rows of Plums and other fruit trees, whose partial shade for some years after planting is rather beneficial than otherwise. On cold heavy loams the bushes do best planted hillock fashion along the sides of walks or upon broad open quarters. These, as a matter of course, give the largest berries, and the surface of the soil being cool and moist, contrary to all other fruits which revel in sun heat, their quality does not suffer. The Currant, for instance, comes remarkably fine and bright on a damp north wall, but it is more acid than fruit of the same variety from fully exposed bushes. This, however, should not check the wall planting of Currants, as they make up in lateness what they lose in sweetness, whilst the Gooseberry from a similar aspect puts on all its good qualities, and the selection being judicious, choice fruit may be preserved until quite late in the season. A north wall planted with the good old Warrington, which may be trained and pruned precisely as we train and prune Currants, will give a supply until the fruit shrivels or is

attacked by wasps, which make short work of the crop unless the trees are carefully covered up with hexagon netting, the best of all materials for this purpose, as it dries quickly, and the air passes freely through the meshes.

The best time to put in cuttings is immediately after the wood is ripe, say the middle of October, but the two following months are preferable to the spring, as the heels cicatrise before the sap becomes active. Ninety-five per cent. put in now will strike root next season, but this matter may pass, my object being a reminder to the amateur and cottager that the Gooseberry is a most profitable fruit, and now is the time to plant it. Strong plants on clean stems can be procured for a few pence each, and being, as I have shown, so extremely accommodating, a Gooseberry bush should be planted wherever a square yard of ground is available or a few feet of rough wall unoccupied.

W. COLEMAN.

CHRYSANTHEMUMS.

E. MOLYNEUX.

KEEPING THE FLOWERS.

OWING to Chrysanthemums flowering early this season many cultivators with limited experience will be troubled how to retain the flowers in a fresh state after they are expanded. The present moist warm weather, too, is much against the blooms remaining fresh, especially if they are large. They keep badly if the plants have been highly fed with strong stimulants so as to injure the roots. Beginners in exhibiting often lose many blooms through a want of knowledge of how to keep them when they are developed. Some persons cut them too soon, while others do not cut them soon enough, allowing them to remain on the plants several days after all the florets have been fully developed, and often enough after it can be seen that the blooms are losing their freshness. Some sorts, notably Golden Empress of India, Lord Alcester, and others of a like character, assume a pink shade of colour on the outside of the lower petals as a sign of decay, while such as Prince Alfred, Princess of Wales show their want of freshness by the soft feel of the lower petals, a gradual contraction of their size, and a dingy colour in both cases. These instances will suffice to explain what are the first symptoms of decay. To cut blooms after they arrive at the stage indicated with the idea of preserving them fresh is a mistaken notion. Timing the blooms is an important phase in the culture of this flower, and should be done by regulating the plants in different temperatures according to the time required for the expansion of the flowers. To have blooms in the best possible condition on any given date four days previous is quite soon enough to cut them. If cut earlier the florets lose their natural solidity, thus causing the blooms to be of smaller dimensions than they would be if the florets stood out fresh. Particularly noticeable is this in plants of the Japanese section, where the florets do not possess that amount of crispness which characterises those of the incurved class. If the blooms are cut too early the colours fade, which is a serious loss to a stand, as rich colouring is considered of the highest importance. When the blooms are thoroughly developed, having the centre petals well incurved, then is the right moment to cut them, which is best done with a long stem, say 12 inches, so that a small portion can be taken off each day. Place the stem in a bottle previously filled with water, to which is added a little salt, say three-quarters of a teaspoonful to three half-pints of soft water. The flowers should be placed in a cool, slightly darkened room having a dry atmosphere. When it is seen that the blooms are likely to be fully one week too early, place the plants in the coolest part of the house, shading them from bright sun until they are fully expanded; then it is best to remove the plants to a partly darkened, cool structure, having

if possible a northern aspect and where air can be freely admitted—a potting shed, a Mushroom house not in use, a large open barn, a coach-house, in fact any place where the necessary requirements, viz., coolness, dryness, and partially excluded light. The soil in the pots should be kept nearly dry, giving only as much water as will prevent the leaves flagging, as when the blooms are fully developed the functions of the plants are torpid. Upon the least signs of decay in any of the petals such parts should be removed, as they affect others. Any surplus water standing on the floor should be removed, as it will only tend to raise atmospheric moisture, which is best avoided.

Although the weather is so warm, it is necessary to warm the hot-water pipes daily to dispel damp and create a buoyant atmosphere. Air should be admitted freely at the same time as the pipes are warmed, but direct draughts should be avoided, as they help to spread mildew upon the foliage. Much care is needed in managing the plants just now, as after two or three successive wet days we get bright sun, which is likely, and almost certain, to spoil many blooms if shade is not applied to the roof of the house. The dull sunless weather renders the growth and development of the blooms soft and less liable to withstand a sudden burst of sunshine. Many blooms are lost annually in this way when only partly expanded.

Arranging the blooms in the stands for exhibition needs some practice to obtain the best results. Good flowers are often spoiled by being badly arranged in the stands. The most common fault of beginners is placing them down too low on the stand, which not only dwarfs them in appearance, but does not admit of their graceful characters being displayed. The correct method of arranging the blooms is to place them at such a height from the board that the size of each is displayed to the best advantage. If they are placed too high they look ungainly. The Japanese varieties, with long drooping florets, require setting up a little higher on the board than do the incurved. The forms of the Japanese varieties are so varied in character, that each one requires a special study. Much depends upon the cupping of these. Take *Boule d'Or* or *Sunflower*, for instance; neither of these should have the florets cupped in a horizontal position, as their natural tendency is to droop downwards.

The best way to proceed in preparing the blooms for exhibition is the following: Take a bloom of any of the long-petalled varieties, turn it upside down, slip the tube over the stem, and place the stem of the flower in the mouth, thus getting both hands at liberty. If the florets are interlaced at the back of the flower, with both hands disentangle them and spread them out evenly and straight from the centre all round. Then, with one hand hold them in position, and with the other hand slip the tube into its place close under the base of its florets. Lightly hold the stem of the flower and the tube in the hand, turning it into position, so that the correct height is obtained at which to fix the tube, so that the florets shall hang just to clear the board. If the florets appear to be too much spread out, by allowing the cup to drop a little, the florets will correspondingly fall into the required position. Then, with a piece of cork cut into the shape of a wedge, the flower-stem can be fixed by pushing the cork tightly into the cup with the thumb of the right hand, the stem and the tube being firmly held in the left hand. The pieces of cork are best soaked in water before use, thus rendering them softer and more easily pushed into position. As the cork and stem are in the water contained in the cup, the cork swells and remains tight in its place, but is easily withdrawn by the forceps should necessity require its removal. Anemone Japanese varieties, which have long drooping guard florets, require staging in a similar manner to the Japanese kinds. Reflexed sorts should be arranged in the tubes just sufficiently tight to allow of their whole size being seen to advantage. If the blooms are drawn down too tightly in the tube, their size will be lost. The incurved varieties need the tube support close up to the petals, so as

to retain the incurved form of the flower in a compact manner. If the tube is too loosely placed, the petals hang too much to preserve the proper form. The height from the board at which the blooms in this section should be arranged is important. The following distances should be secured, measuring from the bottom florets: The blooms in the back row should be raised $1\frac{1}{2}$ inches from the stand, those in the middle row $1\frac{1}{4}$ inches, and those in the front row fixed $1\frac{1}{4}$ inches above the board or stand. In this manner every bloom is seen to the best advantage. The colours should be judiciously arranged so as not to clash with each other.

WHITE CHRYSANTHEMUMS.

PURE white flowers have more admirers than those of any other colour, and in no case is this so noticeable as in Chrysanthemums. The crimson, rosy pink, rosy purple, maroon, lilac, and numerous other shades now found in these popular flowers may be admired by a few, but by the majority of people pure white blooms are preferred. This being the case, it is satisfactory to know that of pure white Chrysanthemums there is no lack. Indeed, they are far more numerous than those of any other shade, not including those generally described as creamy white, and others that change to pure white as the blooms develop.

Among Japanese varieties, *Avalanche* must be recognised as occupying a premier place so far as the white varieties are concerned. A well-known grower expressed his opinion to me the other day that it was at present the best white in cultivation. When well grown the blooms are deep and full and of snowy whiteness. The lower florets droop slightly when fully expanded. Scarcely less beautiful is *Mrs. J. Wright*, this variety being full and without the shadow of a colour. The florets are rather long and sometimes crimped. *Fair Maid of Guernsey* is considered coarse by some, but as a flower of snowy whiteness it must be given a first place. The blooms are large, but of considerable value for decoration. For usefulness and purity in colour, however, there are few varieties to equal the well-known *Elaine*. The blooms of this, although somewhat heavy, are peculiarly attractive with their drooping florets. *Mrs. H. Cannell* is worthy of a place in every collection. It is a very fine flower, with broad and somewhat incurved florets. Another variety worthy of all that has been written in its favour is *Stanstead White*, which has twisted florets, showing a decided tendency to incurve. It is a beautiful bloom when seen to advantage. *Swanley White*, with its long and flat florets, is an attractive flower when well grown, and the same may be said of *Snowstorm*, an American introduction. This has long pointed florets of great purity. *Lady Trevor Lawrence* is a variety with broad incurved white flowers. A variety with long broad florets and serrated tips may be found in *Pelican*, and another kind with laciniated tipped blooms is *album fimbriatum*, the flowers of which are full, though somewhat flat. Occasionally *Pelican* comes creamy white. But these cases are rare. *Ethel* is a good late white and should not be discarded for untried novelties. For early blooming there is no better white than *Lady Selborne*, and *Marabout*, of perfect shape and pure white, has fimbriated florets, forming a most beautiful flower.

Of incurved varieties, *Empress of India* is beyond question one of the best whites, while *Mrs. G. Rundle* is still considered by some people the best white Chrysanthemum for general use. *White Globe*, a beautifully incurved bloom, is also deserving of more extended cultivation. *Lord Eversley*, though a sport from *Princess Teck*, is considered to be one of the best incurved whites grown. As a late flowering kind *Miss Maréchal* should be extensively grown, the blooms being pure. In some collections the blooms of *Mrs. Heal* may be seen pure white, while in others they are of quite a creamy colour.

Among the reflexed varieties pure whites are not over plentiful, though among them *Boule de Neige* is perhaps the best. The flowers are only medium in size, but of pearly whiteness, and for late work

it is unequalled. *La Candeur* is another good variety with large flowers. *White Christine*, too, has very fine blooms, and should be more largely grown. *Mrs. Wellam* is a moderately good white, resembling the well-known *Dr. Sharpe* in appearance.

Anemone-flowered varieties are not strongly represented by pure white, one of the best being *Lady Margaret*, which has very large flowers and a double row of guard florets. *Virginal*, a pompon Anemone, is a useful white, and so is *Mme. Sentir*. *Fleur de Marie* is a good late-flowered variety of this section. *Dame Blanche* is a large flower of good form and very pure, and in some places *Mme. Goderaux* comes pure white, although it is generally a creamy white. It is, nevertheless, a splendid flower and worthy of a place in every collection.

In the pompon section whites are fairly numerous, though not so plentiful as among the Japanese. *White Cedo Nulli* has stood the test well, and may still be found in good collections. *Snowdrop* is a pretty little variety, exceedingly useful for supplying cut flowers. For free blooming, too, *Mme. Domage* is deserving of notice. This is a fine shaped flower of snowy whiteness. *La Purité* is a very fine white pompon, as is also *Maid of Kent*. *Mlle. Marthe* is a useful kind, pure white, and very dwarf in habit. *Trevenna* is a very serviceable white-flowered pompon.

Among the single-flowered white varieties *Snowflake* and *The Virgin* are the two best.

The foregoing list of white Chrysanthemums is by no means complete, inasmuch as the early flowering, as well as numerous other varieties are omitted. It would, however, be interesting to hear the opinion of other correspondents as to which are the best white Chrysanthemums.

C. L.

La Nympe is a useful Japanese reflexed flower when naturally grown, as with *Mr. Sullivan* at *Roe-hampton*. The flowers are of a cheerful lilac-peach colour, spreading and covering the plant. The plant is dwarf, early, and free-flowering.

D. B. Chapman is a handsome Japanese flower very little known. It was raised, we believe, by *Mr. Sullivan*, gardener to *Mr. D. B. Chapman*, in whose garden we saw it a few days ago in fine condition. The florets are narrow, rich magenta, and make a full flower.

Chrysanthemum cuttings.—I usually strike my Chrysanthemum cuttings in cold frames between December 20 and January 20. This year I have put them in November 1. What will be the result? I cut them down in June and grow on the bush system. Replies invited.—BRAMCOTE.

Mons. Astorg is a splendid Japanese variety to cultivate as a specimen plant. I lately saw one of this kind about 3 feet in diameter with about fifty well developed blooms, every flower being fairly large, pure white, full in the centre. The great charm of this variety is seen in the graceful character of every blossom, the florets of which droop so uniformly. Add to this the contrast of its dark green foliage, and you have a Japanese variety not to be excelled for specimen plant culture.—E. M.

Chrysanthemum Theodore Bullier.—Now is the time to draw attention to the good newer varieties of last year's introduction. If this has come as well with other growers as with me, it will be a decided acquisition to a still limited class—the dwarf Japanese reflexed. The colour, too, is rather singular, a violet-blue—a long stride towards the much-desired blue Chrysanthemum. It should be very effective on an exhibition stand, as with me in a comparatively small pot, crown buds have opened 7 inches across, when they are measured across the great outside fringe. The height does not exceed 3 feet.—W. J. MURPHY, *Clonmel*.

The Chrysanthemum centenary.—This celebration does not lose the least in its interest because this is not the actual centenary of the introduction of the living plant into England. The Chrysanthemum was in cultivation in the Apothecaries' garden at Chelsea in the year 1763, and two specimens grown that year are now in the herbarium of the British Museum. In 1721, when Sir Hans Sloane purchased his estate at Chelsea, he gave the freehold of the gardens to the Apothecaries' Com-

pany, on condition that the company should annually deliver fifty new plants to the Royal Society until they had delivered 3000 in all. The catalogue of each parcel of plants was published yearly in the *Philosophical Transactions*. On March 14, 1764, the catalogue of the plants thus received was read at the Society's meeting, and No. 2112 is the cultivated Chrysanthemum. The whole collection of Chelsea plants has been transferred from the Royal Society to the British Museum, and is now incorporated in the great herbarium here. The great interest taken in the Chrysanthemum at the present moment has induced me to place for a short time these earliest specimens of the plant in a case in the public gallery of this department, where they can be seen by visitors. I have placed with them some of the first published figures of the Chrysanthemum, some Japanese drawings, and a fine series of original drawings by Chinese artists, made under the direction of the late Mr. John Reeves, of Canton, early in the century.—WILLIAM CARPENTHERS, *Natural History Museum, Cromwell Road*.

CHRYSANTHEMUM NOTES.

OUTDOOR VARIETIES.

A GOOD note was struck in the address of *Mr. T. B. Haywood* at Chiswick on the 5th and 6th inst., when reference was made to the outdoor varieties and the want of a good, hardy, free-flowering race able to withstand fogs and damp. In several gardens in the suburbs of London, Chrysanthemums, principally of the pompon section, are successfully grown against walls, though there is scarcely a breath of wind to freshen the flowers. In a small garden at Hammersmith, but a few feet square, the wall was smothered with a white-flowering pompon, as fresh and fair as if under glass. This is the kind of gardening that should greet us in large gardens, where there is scope to make rich blocks of colour with a good selection of the hardier varieties. In the Embankment Gardens the monotony of evergreen shrubs and bare soil is relieved by several plants in full bloom placed, unfortunately, at regular intervals. Grouped in masses of one colour, as deep magenta or pure white, the garden could be made as gay as in September or October. *Mme. Desgrange* and its sport, *G. Wermig*, are planted largely for giving colour in early October, and none are better for the purpose. By raising a race of the same freedom and beauty for blooming in November out of doors a signal service will have been performed for horticulture.

LARGE FLOWERS.

Another point *Mr. Haywood* laid stress upon was the size of the flowers. He deprecated, and rightly too, the endeavour to make size one of the only commendable qualities of a Chrysanthemum flower. Bigness, as a rule, accompanies excessive coarseness, and we have only to cite the Japanese *Etoile de Lyon* and such a monstrosity as *W. and G. Drover* in support of this. There are in these two varieties an undue coarseness of petal, roughness of outline, and total want of refinement and grace. It might be asserted I condemn *Avalanche*, as this is essentially a big flower, but there is a difference between such a variety and a coarse, rough, ungainly type as *Condor*. *Avalanche* is a mass of narrow florets as pure as the driven snow. It is essentially refined, without a trace of coarseness. *Edwin Molyneux*, with its big, broad petals, is quite the reverse when unduly large. The six excessively dressed blooms of it exhibited last season at the Royal Aquarium show were not beautiful, though their enormous breadth and fulness were quite remarkable. How much unusual feeding and stopping went to form such results? While there are exhibitions with competitions, size must be one consideration in such sections as the Japanese and incurved. But that is no reason why encouragement should be given by awarding certificates to flowers like *W. and G. Drover*, *Condor*, or any of that type. There is also a tendency to develop the proportions of the pompon flowers. It is in this way we lose the charming outline and fresh beauty characteristic of the flowers of this section.

NAMING PLANTS.

It would be well for convenience and appearance sake if the names of Chrysanthemums were always spelt in one way. Occasionally a flower is labelled Monsieur W. Holmes, sometimes Mons. W. Holmes, and not often W. Holmes. This case is only taken as an illustration of careless nomenclature; W. Holmes is quite sufficient. The same applies to Madame and Mademoiselle; Mme. and Mlle. are far less cumbersome and just as intelligible. The great blemish in the National Chrysanthemum Society's catalogue of 1888 is this loose use of initial names. In the case of the new incurved variety, Miss M. A. Haggas, the first word might be dropped. Such a principle, to promote something like uniformity in nomenclature, should also be applied to Roses, which are as much in need of revision in this matter as the Chrysanthemum. If French raisers would remember in naming their seedlings that Englishmen have to pronounce the names and use them often in the season of the flower, they would possibly choose titles a trifle less wordy and cumbersome than such an effusion as *Souvenir de Mme. de Blandinières*, already shortened by half. The longest title to a flower I can call to mind is the *Rose Souvenir de la voyage de sa Majesté la Reine d'Angleterre*. One simple name is quite sufficient, and at the most two.

THE FIMBRIATED SECTION.

This is a section very little seen, as few prizes are offered for it at the exhibitions. It is not a class I admire; the flowers are too close, and with each petal serrated or cut (quite a distinct feature), but reminding one too much of *Endive*. Macaulay is a variety of this character. It was certificated by the National Chrysanthemum Society on October 26, 1887. The flower is made up of a mass of crisp, serrated florets of a clear gold colour with a bronze reverse. There were some good blooms of it at the Chiswick exhibition, but it is not a variety to ever become popular. The smaller-flowered kinds look well in bunches of three, shown in the same style as pompons, and it would create a greater interest in the section if more encouragement were given them at the exhibitions. *Marabout*, white, is perhaps one of the oldest of this class, as it was grown about thirty years ago; *lacinatum* is, of course, one of this section, and is supposed to have been introduced by Fortune about 1860; *Belle Navarraise*, white, shaded with rose; *Scapin*, rose-crimson, handsome, and sweet scented; *Croesus*, orange, with a shade of crimson in it; *Osiris*, amber and carmine; and *Chardonnet*, purple, finely cut, are amongst the best of the fimbriated Chrysanthemums.

L'AUTOMNE VARIETY.

This variety was certificated last season as an incurved, but its character this year shows that it is not of this class. It is neither an incurved nor a Japanese, rather a kind of hybrid between the two—an incurved Japanese. The flowers are distinctly incurved, but there is the raggedness characteristic of the Japanese, the colour a charmingly clear shade of buff. Mrs. *Alpheus Hardy* is neither a Japanese nor an incurved, so that it seems a new class will have to be instituted, *i.e.*, incurved Japanese. I see that Mr. John Thorpe, writing in the *American Garden*, says that we may expect a pink-coloured Mrs. *Alpheus Hardy*.

LARGE ANEMONE VARIETIES.

This is a class, like the Japanese Anemone, that has of late received several valuable additions. The large Anemone flowers are characteristic from their perfectness of outline, not that such a trait is to be held up to admiration, but a good bloom of the first-class sorts has certainly a beauty peculiarly its own. Nelson is an excellent variety that has been well shown this season; the flowers are rose-violet, the disc of a deeper shade, quite a contrast to the new Sabine, which is primrose-yellow in the guard florets, but the centre is more intense. Both are gems of their class. Miss Annie Lowe is another kind rapidly becoming a favourite. It is a primrose-coloured sport from the spotless white Lady Margaret, and looks well on the exhibition board. These are three varieties everyone should

have who is trying to keep his collection up to date.

EDWIN MOLYNEUX VARIETY.

This Japanese Chrysanthemum has not, from what can be seen of it in various collections around London, fulfilled the expectations that were formed of it last season. This may appear unorthodox, as it is the fashion for everyone to praise it, even though half the flowers at exhibitions show an ugly green centre and high dressing. In many instances it has come purely single, and in this condition a specimen plant of it was shown at the Crystal Palace with not a characteristic flower open. This is certainly disappointing. The rich crimson colour against the gold reverse is unique, and there is a robustness of expression that is in itself a fine feature, but if it exhibits another year the vagaries it has this season, there will be fewer inclined to rank it amongst the best of its class. *Avalanche* has always remained true; in truth, it seems to improve, and nothing but praise can be given to such a mass of loveliness, but with Edwin Molyneux things are different. The flowers are always excessively dressed, and when placed in water for a few hours the petals revert back to their usual place, displaying the variety in its true light, that of, as we have seen it this season, a coarse, disappointing introduction.

CHRYSANTHEMUMS AT ROEHAMPTON.

One of the finest collections in a private garden is that of Mr. Sullivan, gardener to Mr. D. B. Chapman, Roehampton, who grows the great autumn flower with marked skill. Although the advantages as to house-room are not of the best, the plants are bearing flowers of exceptional excellence, especially of such new incurved varieties as *Violet Tomlin* and *M. A. Haggas*. The new, large Anemone-flowered kind, *Sabine*, was in full character, and a pretty thing it is when well grown. The colour is soft and distinct, the outer guard florets pale yellow, that deepens considerably in the centre. Several plants of *Avalanche* were as white as the driven snow, and close by was the clear yellow-coloured *Ralph Brocklebank* and the deep bright yellow *Sunflower*. A plant of *Lady T. Lawrence* carried several flowers, which are like those of Mrs. *Alpheus Hardy*, without its feathery surface. *Stanstead White* and *George Daniels*, both Japanese varieties, were in full flower; the last of the two has broad petals of a delicate pink colour. Every old and new kind worth growing finds a good home at Roehampton.

C.

Chrysanthemums at The Dell.—At the very moment a friend near Reading is writing "The big blossoms of Chrysanthemums are damping off so fast, I feel I will never trouble to grow any more of them," I am looking with extreme pleasure on the very fine show of big blooms which Mr. Ballantine has in Baron Schröder's fine garden. The Baron loves all sorts of flowers, and the Chrysanthemums worthily come in for their share of attention. A long lofty house usually utilised for Tea Roses, having a broad walk down the centre, has the borders on each side densely set with hundreds of Chrysanthemums in pots, the earliest properly grouped on the south aspect, the later ones being opposite. I have never seen the grand white *Elaine* in such superb form as here, scores of huge flowers standing up amidst the many later sorts with striking effect. *Avalanche* also was very fine indeed, also amongst whites were *Mlle. Lacroix* and *Fleur de Marie*. A striking white with long fluted petals is *Florence Percy*. *Stanstead Surprise*, *Bonnington*, *Hiver Fleuri*, *La Triomphante*, *Mons. Freeman*, *Margot*, *Soleil Levant*, *Thunberg*, *Rubra striata*, *Mrs. Stevens*, *Mrs. Matthews*, *Mons. Rigotard*, and *Val d'Andorre* were some of the most forward of the collection. *Jeanne d'Arc*, *White Queen*, *Queen of England*, *Lord Wolseley*, *White Globe*, *H. Shoesmith*, &c., were amongst the forward incurved. Probably the air here is naturally drier than at Reading. In any case there were no signs of the flowers damping. The house being lofty and airy prevented damp from settling; indeed, it is probable that lack of capacity to give air and a little fire-heat when the plants are in

bloom leads to damping. Mr. Molyneux has sometimes remarked to me the difficulty he finds in keeping his plants growing well during hot, dry weather, because he is perched on a lofty eminence. None the less, there are many growers who must envy him his freedom from damp mists and fogs, which in low-lying districts render the preservation of large Chrysanthemum flowers so difficult.—A. D.

NOTES OF THE WEEK.

The large-flowered Christmas Rose (*Helleborus niger maximus*) is in full bloom at Tottenham. Large clumps give an almost endless supply of the bold, white, salver-shaped flowers, which just now are as welcome as in the depth of winter.

Begonia Ville de Nancy.—This has been flowering nicely in the greenhouse, but the flowers are rather thin in texture as I have grown them, and not a colour I care for—rosy-crimson with magenta. I have crossed it with other tuberous (summer-flowering) sorts, and hope to get some good seed.—W. SHIRLEY.

Dahlias in November.—Herewith I send you a few *Dahlia* blooms together with some *Mignonette* and *Escallonia macrantha*, which I have cut in my garden this morning, as showing the mildness of the season on this coast. During the nine years I have been here, I have never before known the Dahlias to last into November.—JOHN S. HEWARD, *Littlehampton*.

The Clyde disaster.—The subscriptions to the "Fraser and Hall Fund" have reached upwards of £363. The fourth list includes subscriptions of £10 from Mr. H. Greenfield and Mr. G. C. Raphael. Gardeners are asked to contribute to this deserving object. The hon. secretary is Mr. F. Horsman, *Hollybrook, Colchester*.

Buddleia auriculata.—This charming greenhouse plant was flowering freely a short time since in the interesting garden of Sir George Macleay, Bletchingley. Although under glass, the plant would probably stand the winter well in the warm climate of the south of England. The flowers are of a creamy colour, sweetly scented, and borne in axillary spikes. Its fragrance alone entitles it to consideration.

Cotoneaster horizontalis.—This very distinct and ornamental *Cotoneaster* has within the last fortnight greatly changed in appearance, as the leaves, with the exception of two or three of the youngest just at the extreme points of the shoots, have assumed an intensely bright crimson tint. Among a large gathering of richly tinted autumn foliage, for brightness of hue this *Cotoneaster* was surpassed by none of the others. The berries, which are freely borne, are also brighter in colour than those of any of the small-leaved section.

Honours for Mons. Ed. Andre.—Edouard André, so well known both in France and England, has been made a Chevalier of the Legion of Honour, a distinction well merited and honourably won. In the decree of the President of the French Republic M. André is described as a landscape gardener and editor of the *Revue Horticole*, designer of numerous public and private parks in France and abroad, formerly *chef de service* in the promenades and plantations of Paris, travelling botanist of the Government to South America, and author of "*Traité Générale de l'Art des Jardins*," &c.

Notes from a Devonshire garden.—I was at Greenway, one of the finest old gardens and filled with the quaintest things. I found myself often at fault. Cork trees 40 feet high; *Guevinia avellana*, with glorious leaves and showers of white bloom; *Magnolia stellata*, *Colletia horrida* (Anchor Plant), and *C. spinosa*. I saw five or six quaint walled-in gardens where Ferns covered the walls as with a carpet. *Lapageria rosea*, &c., and a smell of early Violets came into your face as you entered the old crumbling arch into the enclosure.—R. U., *Penzance*.

Clianthus Dampieri.—I hope the vexed question of the proper management of *Clianthus Dampieri* is solved. A short time ago I had from Mr. Kirsten, of Southborough, Tunbridge Wells, splendid blooms of the ordinary type and *C. Dampieri marginata*. He then wrote, "I send from my outside bed, planted out, covered with growth and crammed with bloom, a gathering of flowers of *Clianthus Dampieri* and *C. D. marginata* grafted upon *C. punicea*, imported from Germany." If this is

the solution, we have been all along wrong in treating the plant as a biennial, and I am sure it will be largely cultivated, for nothing can be more attractive.—A. RAWSON, *Windermere*.

Crocus Cambessedesi.—Though among the smallest of the autumn and winter-flowering kinds, this is certainly one of the most interesting of the whole series; at no time throughout the winter in open weather do we remember to have been without flowers of this handsome little *Crocus*. It begins to bloom about the end of October, and continues until the following April; the flowers are small, lilac, with deep purple featherings, and are very attractive in large groups. It is a very suitable species for the rockery and perfectly hardy.

The Fruiting Duckweed (*Nertera depressa*) is now at its best on the rockery, and it is very interesting and attractive at this dull season. In the open air, but where it can be well sheltered from the sun and cold winds, we find it does very well, and with a little protection during severe weather gives no trouble whatever. To get it in perfection a cold north frame will be required, but in the open it has fruited very well, the plants being thickly studded with the small orange-red berries. It is a New Zealand plant, and may be increased to any extent by division of the patches.

Crocus lævigatus.—This is a very pretty little species from the mountains of Greece and the Cyclades, useful for late blooming, as it is now at its very best long after the early and middle autumn kinds are past. The flowers are produced in abundance, small, but varying in colour from white to lilac, and distinctly marked with purple featherings. It blooms now and the flowers last, if the weather be good, until about Christmas and sometimes into the new year, and even as late as March. A sheltered spot suits it well, and only in very hard frost is it without flowers.—K.

Clematis orientalis var. graveolens seems to be a scarce plant in gardens, although for picturesqueness from early summer until now it has no rival in the whole genus. It begins to flower early in summer and continues flowering and fruiting until now; flowers half opened and ripe bunches of seeds may be gathered at once any time from the end of August. The seed or fruit-heads are most beautiful, with long, grey, feathery tails, clustered on gracefully festooned branches. The plant is a most suitable one for bowers, old buildings, &c., and when once established can well take care of itself.

White basket Daffodil.—*Narcissus monophyllus* or *Corbularia Clusi*, one of the finest and most valuable of *Narcissi*, with sweet-scented pure white flowers and long grass-like foliage, is the first of all the *Narcissi* in bloom. It is now a feature at the Hale Farm Nurseries, Tottenham. The bulbs were home-grown and potted at the end of August in light sandy soil, about twelve bulbs in a pot, and put in a cool greenhouse in October. When potted on in succession they may be had in bloom from November till March, but only cultivated bulbs should be taken. Collected bulbs, if they grow at all, seldom flower the first season and are consequently disappointing. The bulbs have from one to three and even four flowers on each, and every bulb flowers.—G. R.

Trichosma suavis.—Although the plant is different in habit, the flowers of this Orchid greatly resemble those of *Cœlogyne*, to which genus, indeed, it is nearly allied. As a cool species flowering at this season it is very useful, producing its pretty, sweetly-scented flowers with great freedom. The slender, terete stems are each about 8 inches high, surmounted by two bright green leaves, from between which the raceme is produced. This consists of four to six flowers, each $1\frac{1}{2}$ inches across, with creamy-white sepals and petals, the side lobes of the lip striped with reddish-brown, and the central one yellow, with a crimson margin. The culture of this species is simple, but, as a rule, it is placed in by far too high a temperature, and spotted foliage is the result. When grown in the cooler part of the intermediate house, or even with the *Odontoglossa*, it succeeds perfectly. It should be potted

in a mixture of peat and Sphagnum, and watered freely when growing. No severe drying is needed to induce it to bloom, so that even in winter it should be kept moderately moist. A vigorous healthy growth is the best guarantee of its flowering. It is a native of the hills of Northern India, whence it was introduced in 1840. Several plants are now in flower at Kew.

The Horse-tails (*Equisetums*).—Where a confined space can be spared for them on the rockery they make very attractive groups all through the spring and summer—indeed, until frost sets in in autumn. *E. maximum* or *Telmateia* is, perhaps, the best; it is at any rate the strongest; and when well developed measures from 4 feet to 6 feet in height, with numerous whorls of slender, drooping branches of a bright green colour. *E. sylvaticum*, a dwarfier and finer kind, and *E. Drummondii* are very handsome, and may be planted in a mixed group with great effect.

Pentstemon Murrayanus is one of the most handsome and distinct of the genus, and is now very pretty with its numerous brilliant scarlet blossoms and fine glaucous foliage. It is a native of Texas, and prefers a warm dry soil, and should be increased yearly by cuttings or seeds, as the old plants often get destroyed by frost, &c. *P. cordifolius* is another rare species of a shrubby habit, forming a low bush. During summer and autumn it is crowded with its intense deep red flowers. It may be increased readily from cuttings, which should be taken early in August, or the old plants lifted and wintered in a frame. It never ripens seed and rarely stands during the winter.

Polygonum vacciniifolium has a fault which neither of your correspondents writing of this plant notices—as it blooms rather late it is generally overtaken by frost when at its best. A very little suffices to spoil it by turning the flowers foxy. But the present season seems an exceptionally favourable one for it, the absence of frost enabling it to prolong its flowering season uninterrupted. Plants grown in pots and placed under glass in the early autumn go on flowering unharmed until the foliage drops, and form a very pretty addition to the greenhouse at this time of the year. Have any of your readers fruited *P. rubesoides*, a climbing kind? I have had it for years, but it has never bloomed. I am told the fruit is ornamental.—J. M., *Charmouth, Dorset*.

Spatium.—I do think *Spatium* a very ugly little word. I know you did not make it, and that it is Indian, but I do not quite see why we should naturalise every native name, unless it is both pretty and significant. Suppose, for instance, that you were walking round your garden with an ordinary lover of flowers, but one unacquainted with this particular plant, and he said, "What is that pretty little thing?" and you answered "That is *Spatium*," he would probably say "Oh! what an odd name, and what does it mean?" I do not see that in that case you would be much better off than if the name were Latin. Do you? Why not do away with both *Spatium* and *Lewisia rediviva* and call it the Phoenix Flower (because it rises from its ashes) or some such descriptive name? You are rather severe on Mr. Elwes. It must be remembered that it was he who took the lead in getting English names given to the Daffodils instead of Barr's enormous Latin ones.—G. H. E.

Maxillaria grandiflora.—Of the numerous species constituting the genus *Maxillaria*, the majority are not of sufficient merit to gain the favour of the Orchid growers of to-day. Several, however, are extremely handsome, and worthy of a place in any collection. Excepting *M. Sanderiana*, which is certainly the finest of all, the species under notice is the best. It is a native of Peru, where it is found at a considerable altitude, and therefore requires cool moist treatment. The flowers occur singly on scapes about 6 inches high, springing from the base of the pseudo-bulb. They measure each 3 inches in diameter and are pure white, with the exception of the lip, the side lobes of which are purple, and the triangular front lobe of a soft rich yellow. An additional recommendation of the flowers is their delightful fragrance. A plant is

flowering in the cool Orchid house at Kew. Another handsome species bearing a considerable resemblance to the above is *M. venusta*. Its flowering season extends from May to December. The blooms are large, white, and fragrant, but, unfortunately, face downwards, so that they cannot be seen properly unless held back.

Cosmos bipinnatus.—Not having seen any remarks this year about the hybrid *Cosmos*, I am afraid no one was induced to give it a trial in spite of your praise of the flowers I sent you in October, 1888. The spray I enclose with this is one of the side shoots of a main branch of a plant about 3 feet high in a 9-inch pot. The plant has at this moment over 100 flowers fully opened, besides quantities of buds; it is about as much through as it is high, and of a graceful habit. They are not all the same, however, for the pink one, of which I also enclose a few flowers, is about 5 feet high and rather straggling. This, however, is partly due to it having been drawn up amongst the *Chrysanthemums*, and because I was rather late in stopping it. Those out of doors made splendid plants with a minimum of trouble, but the frost cut them just as the buds pushed out. They would have flowered well, I expect, in a better situated garden, where such things as *Dahlias* flower long after they are cut off in mine as I see by your paper. I failed to save any seed last year, but am trying again.—W. SHIRLEY, *Fareham*.

New park for London.—A new park has just been given to North London by Sir Sydney Waterlow. The estate was for many years the donor's own home, and the grounds are described as undulating, well timbered with Oak, old Cedars of Lebanon, and many other well-grown trees and shrubs. There is also $1\frac{1}{2}$ acres of ornamental water, supplied from natural sources. It is situated on the southern slope of Highgate Hill. The land is freehold, with the exception of $2\frac{1}{2}$ acres held on a long lease, of which thirty-five and a half years are expired. It is bounded almost entirely by public roads and a public footpath. Sir Sydney Waterlow will also pay over to the Council £6000 in cash, the estimated value of the freehold interest in the $2\frac{1}{2}$ acres of freehold, this sum of money to be used in purchasing this interest, or in defraying the cost of laying out the estate as a public park in perpetuity.

Begonia geranioides and **B. John Heal.**—The first, an exquisite gem introduced to this country upwards of twenty years ago by the Messrs. Backhouse, of York, is well grown by Mr. Bain in the gardens of Sir Trevor Lawrence at Burford Lodge. This plant is a native of Natal, South Africa. Mr. Bain does not grow the plants in large pots, which I am very glad to see, as the manner in which they are now to be seen renders them very charming objects for a room, and half their beauty would be lost were they to be disfigured by cumbrous pots. The plant stands some 10 inches or 15 inches high, measuring to the top of the flower-spikes; the leaves measure each from 3 inches to 6 inches across, the upper surface being rich deep green, the under side much paler, and the footstalks red; the flower-spikes rise from the centre of the plant; the flower-stems are branched, and they bear a large quantity of pure white flowers, each about an inch across; the purity of the white is enlivened by the short yellow stamens in the centre. I have seen this plant somewhat starved in a greenhouse, when it blooms late in spring, but I commend Mr. Bain for giving it more heat than our greenhouses afford. There was nothing to approach it among Sir Trevor's Orchids, large as his collection is. The variety known as John Heal is a hybrid of the Messrs. Veitch's, raised from *B. socotrana* and a tuberous kind, and Mr. Bain has this plant blooming in profusion. The flowers are medium-sized and of a rich, soft rosy carmine.—W. H. G.

BOOKS RECEIVED.

"Annalen des K. K. Naturhistorischen Hofmuseums." Dr. F. Ritter Von Hauer, Vienna.
"Royal Commission on Vegetable Products." Seventh Progress Report and continuation of the Minutes of Evidence, together with Appendix and General Index. Melbourne: Robert S. Brain.

ORCHIDS.

W. H. GOWER.

CYPRIPEDIUM MORGANIE.

I AM very much pleased to have such a beautiful illustration to write to, and the more especially as it is from such a fine specimen. This plant was grown in the collection of Mr. N. Cookson, Oakwood, Wylam-on-Tyne, well known as a successful grower and a raiser of many fine seedling Orchids. Seeing the number of seedling *Cypripediums* now in the country, it does not matter how many seedlings are raised, provided superior and distinct flowers are produced. We do not want flowers preserved that require to be placed beside each other in order that we may see the difference in two varieties, and anyone obtaining flowers so closely related should either destroy them, or be satisfied to let them pass under the name of the kind which they so closely

A plant which I know in a collection near London is just now showing flower upon a three-year-old growth. The scape is erect, and bears from two to four of its very fine flowers. All the flowers, however, shown in the accompanying illustration are not upon the same plant.

As will be seen by the illustration, the flowers are large and bold. The dorsal sepal is white, flushed with rose; more especially does this colour come in towards the outer margins. It is also lined with numerous light green veins, and with from six to ten broad, reddish purple streaks. The pouch is large, of a dull rosy purple hue on the upper side, paler beneath. The enormous petals form the most striking feature in the flower and give it so much character. They are from 5 inches to 6 inches long and nearly 1 inch broad, the ground colour sulphur-yellow, heavily spotted with blackish purple wart-like spots, which become larger and more dense towards the points. The plant



Cypripedium Morganie. Engraved for THE GARDEN from a photograph of a plant in Mr. N. Cookson's collection.

resemble. Amongst the numerous seedlings which have been obtained, however, the plant now under consideration is by far the grandest, and, in my opinion, it is superior to the variety called *platytænium*, which is supposed to be a form of *Stonei*; but it may be a natural hybrid, although I do not recollect to have heard the subject broached, but natural hybrids were not much thought of in the days when that plant first flowered. *C. Morganie*, however, is one of the seedlings obtained in the establishment of the Messrs. Veitch and Sons, of Chelsea, and they may well be proud of the achievement, for it is a majestic plant. It is the result of a cross between *C. superbians*, one of the *barbatum* section, and *C. Stonei*, a long-tailed plant with plain green leaves. The seedling is a plant far more robust in its habit of growth, with leaves a foot long, broad, and faintly tessellated with dark green upon a light green ground. The plant, although strong, appears to be slow in growth.

was named in honour of Mrs. J. Morgan, of New York, a most enthusiastic buyer of Orchids in her time. Her collection is said to have cost some £40,000, and the plant of this *Cypripedium*, which was originally sold her by the Messrs. Veitch, was bought again by the same firm for £150. In this country, too, the value of this plant still remains at a high figure. There would appear to be some variation in the flowering properties of different plants of this variety, and the plant which belonged to Mr. Lee, of Downside, Leatherhead, would appear to be very free flowering. This plant was cut up after the sale of this collection and the several pieces have nearly all flowered, whilst plants in the same collection which have been grown side by side with them have remained for several years without showing a bud. When, however, it does flower, the blooms remain in full beauty for between two and three months, if ordinary care is bestowed to keep them from

injury. This plant is the offspring of two plants from warm localities, and therefore loves warmth itself. It should have a fairly light situation in the East Indian house, but it must be shaded from the mid-day sun in order to prevent the leaves becoming disfigured. It should, however, be well exposed in order to ripen its growths. The drainage of course is of the first importance, and it must be maintained in a perfect open state. The soil should be peat and Sphagnum Moss, with a little light turfy loam. It, like the majority of these plants, requires a very free supply of moisture to the roots and in the atmosphere when growing, and when at rest the plants must never be allowed to suffer for want of water, although, of course, much less will be requisite at this latter season. The soil around the roots must on no account be allowed to become sour. A coloured illustration of this variety appeared in THE GARDEN, January 20, 1883 (p. 58).

Vanda Sanderiana.—This remarkable Vanda, of which a coloured illustration was given in THE GARDEN (Vol. XXV., p. 104), is such a distinct plant that it always calls for a note when seen, for it certainly is the most wonderful of all the Vandas. It requires more heat than the species of the tricolor and *suavis* section, which grow exceedingly well under cool treatment, but *Sanderiana* must have a sunny corner in a warmer house.—H. G.

Cypripedium Arthurianum is a pretty plant, having for its parents *C. insigne* and *C. Fairrieanum*. It was named in honour of Mr. Arthur Veitch some fifteen years ago. It would necessarily be a pretty plant, having *Fairrieanum* for one of its parents, but in my opinion it is not equal to that plant in beauty. It is also curious in that being obtained from two species with plain green leaves it has tessellated leaves; the flowers are large and very handsome.—H.

Cypripedium leucorrhodum.—What a beauty this is! I have seen it flowering in several collections lately. It is a Veitchian hybrid obtained between *C. Roezli* and *C. Schlimi albiflorum*, the flowers being large and very delicate, of an ivory white, tinged with rose-pink. It is a strong growing plant, and it would appear to be free-flowering. It is one of those hybrids which will always take a front place whilst the genus is grown.—G.

Mormodes buccinator marmorea.—This is a curious plant which I recently noted flowering with Sir Trevor Lawrence. It has a lip quite in accordance with Lindley's description, ivory white, with its sides rolled back, so as to give it the appearance of a trumpet. The sepals and petals are nearly equal, ivory white, tinged with green, and thickly marked with dotted lines of reddish lilac, whilst the column is twisted towards the right-hand side. It is one of the curiosities among Orchids, and has a pretty, though not showy effect. It comes from Mexico.—W.

SHORT NOTES.—ORCHIDS.

Odontoglossum cuspidatum xanthoglossum.—This is a pretty variety of the species named by Professor Reichenbach. It has a yellow lip, as its name implies, and it is heavily blotched and barred in the sepals and petals. It is a handsome spring-flowering plant from Columbia.

Miltonia Moreliana atrorubens.—This is the name of a very fine flower received from J. McIntosh. It is a superb variety, measuring fully 4 inches across, and the colour very deep purple. The darkest flower I have ever seen of the species was that figured in THE GARDEN, Vol. XXXI. (p. 374).—W. H. G.

Masdevallia towarensis.—This beautiful plant with snow-white flowers is just now very conspicuous in the Cambridge Lodge collection of Orchids. It enjoys cool treatment, but yet does not thrive in so low a temperature as many others. There are many curious species to be found here, the collection numbering over 200 species and varieties.

I am sincerely glad to find the genus has got a champion or two at last. —W.

Microstylis metallica.—This very handsome little plant is just now in excellent form in the Burford Lodge collection. The plant grows from 6 inches to 9 inches high, and is wholly of a deep metallic purple. It is a most distinct plant and comes from Borneo, whence I noted some time back that the Messrs. Low & Sons had imported it in quantity. —W. H. G.

Oncidium anthrocrene.—This is a beautiful species; the plant in habit very much resembles *Mil-tonia Warscewiczii*, but its flowers are quite different. The sepals and petals are much undulated, with a greenish-yellow ground, heavily marked with transverse bars of deep brown; the lip is white in front, the crest and side lobes being yellow. The spike is said to become branched. It comes from New Grenada.

Cypripedium macropterum is a beautiful hybrid of more recent date obtained between C. Lowi and C. superbiens; the flowers are large, two or more being produced on a scape, dorsal sepal light green, veined with deep green, tinged with brown at the base, tipped with white, and with a narrow white marginal border; petals long and broad, with plain purple tips, much dotted in the basal half with black wart-like dots, lip large and full, violet-purple.

Cypripedium Carrieri.—This is a French hybrid obtained between C. superbiens and C. venustum, and the latter parent would appear to have stamped its features indelibly upon both foliage and flowers. The leaves are heavily marbled with deep green upon a paler ground. The flower is large and very pretty; dorsal sepal white, thickly veined with green, the lower sepal similar in colour, but very much smaller, petals upwards of 2½ inches long, light green at the base, rosy-purple in the upper half, the whole surface profusely studded with black wart-like spots; pouch large, brownish above, light green beneath. This pretty plant is now flowering in the Cambridge Lodge collection at Camberwell. —G.

Cypripedium purpuratum.—It is now upwards of fifty years ago since this species was first introduced to this country, and I have a specimen which I obtained some thirty years ago which has kept well, and fully bears out the characters of the plant as seen at the present time. It has always been rare. A form which I recently noted flowering in the Burford Lodge collection is by far the most beautiful variety of this plant which I have ever seen, the sepals and petals being of a deep vinous purple. The plant is said to have become rare in Hong-kong, its native country, and as this is the only spot in the world where it is known to exist, it should be taken care of in our gardens. —W.

KITCHEN GARDEN.

WASTE OF MANURE.

It cannot be denied that there is a great waste of manure going on at various times, and especially during the last three months in the year. Much of this waste by a little timely attention might easily be prevented. In some instances, the greater portion of a heap of manure has much of its best properties washed out of it by rain. Still oftener the waste takes the form of ammonia, this being evaporated into the air, little else but a mass of either humus if the decay has been thorough, or of dry musty straw if only partial, being left behind. Properly taken care of, mixed farmyard manure is of the greatest value for any kind of crop that can be grown in the kitchen garden, as, in addition to being a perfect manure, it also greatly assists the ground in absorbing and retaining the moisture and valuable gases from the atmosphere. To no kind of special manure can these properties be assigned, and none of these are really needed when the best kind of solid manure, or such as the market gardeners thickly cover their ground with, is available. What is even more remarkable is the fact that good solid manure rarely

disagrees with the ground. If the ground gets sour or manure-sick, it is mainly due to a free use of solid manure of the very poorest description. In too many instances the gardener has but little choice in the matter, the bulk of the solid manure wheeled on to innumerable gardens having first to do duty in hot-beds, and very poor stuff it is by the time it is dug in. This and poor sloppy stuff obtained from a yard where nothing but milch cows were kept were all we could dress our heavy ground with till about three years ago, and it not unfrequently happened that these did more harm than good. At any rate, since good horse stable manure has been available in larger quantities there has been a marked improvement both in the working of the ground and the value of the crops grown upon it.

As a rule, the manure wheeled out from stables connected with private establishments consists largely of only slightly stained straw, and when this is further sorted over for the purpose of obtaining manure for Mushroom beds it becomes of still less value. Even straw can be converted into good manure by repeated turnings and waterings with liquid manure, notably the drainings from a mixed farmyard; but I hold it to be better to come to some terms with the bailiff or those in charge of the farmyard connected with the estate. If there are no such, then it might be possible to make a favourable arrangement with the nearest owner of stables, the aim being in either case to exchange the straw litter for as much manure as can be obtained in return. Not unfrequently slightly stained straw, spread out rather thinly, washes nearly clean, and if kept well turned soon becomes fit for bedding down heavy horses, being by the time it leaves the stable very much improved in character. By far the best plan, however, is to cart all strawy manure coming from stables during the autumn and winter months to a mixed farmyard, pigs, cattle, and horses all assisting to convert it into first-class manure. From choice, I would prefer to have the manure from the stalls tenanted by cattle being fattened, the manure in this case being especially rich in nitrogenous matter. Manure obtained from covered yards is especially valuable, and actually fetches when sold double the price given for that obtained from an open yard. So rich is this covered-yard manure in nitrogen, that if used, however sparingly, as a mulch in a Peach house or vinery, there is every likelihood of the ammonia being liberated in such large quantities as to damage the foliage of any tender plants kept in the house. I once saw a number of Indian Azaleas with not a fully-grown leaf on them, this being the result of placing them in a newly-closed Peach house the border of which had been recently mulched with covered-yard manure. Even good, open-yard manure, and that obtained from livery stables where the horses are worked hard and well fed, must not be recklessly spread in a forcing house, nitrogen also being very abundant in these, and in the form of vapour may do more harm than good. I mention these facts in order to further demonstrate how much need there is to take care of these valuable properties, every pains being taken to prevent their loss by those who are wise.

It is not always advisable or possible to wheel the manure on to the ground and there dig it in directly it is in a fit state for the purpose. If the condition of heavy retentive soils permitted its being done properly, the sooner many of these are manured and roughly dug the better, but a rainy season having set in, we must perforce wait for severe frosts and a drier time, while to dig in manure in cases where the subsoil is of a rocky, gravelly, or

non-retentive character generally is simply another form of waste. As it happens, it is possible to not only prevent the waste of good manure, but also to increase its bulk. I do not assert that a heap of manure can be improved by keeping, but it is surprising how long it can be preserved comparatively intact, some we once kept for two years being considerably better than half the manure usually used in private gardens. As I pointed out in the opening sentences, manures are frequently spoilt by being unduly exposed to all weathers, and also owing to being stored in loose heaps, thereby promoting rapid decay and loss of ammonia by evaporation. In order to prevent either unfortunate occurrence, a fairly dry site should be chosen and a foundation of either some kind of decaying matter or of poor retentive soil made, these absorbing any of the drainings that find their way into them. Farmers cart their manure on to this foundation, and gardeners should adopt the same plan, or else wheel it together, the aim being to form a solid, yet as evenly built a heap as possible. Eventually a good square or rectangular heap should be formed, and about 5 feet in height. The next proceeding should be to cover the top of the heap with from 6 inches to 12 inches of poor soil or peat, this absorbing much of the ammonia that the heap may evaporate in spite of its solidity. Supposing the manure when placed in a solid heap is not far advanced in decay, it is advisable to turn it once in the course of about six weeks, returning it into its original form, this promoting fermentation and more rapid decomposition. Should it, however, be thought desirable or, as was once the case with us, necessary to store the manure either for the next summer or for use during the following year, then no turning should be given. We have also placed 6 inches of poor, dry soil between the layers of very sloppy farmyard manure, this, besides increasing the bulk, also rendering it more suitable for clayey land.

W. I.

Storing Carrots.—The usual way is to lift the main crop of Carrots about the end of October or early in November, and store them in sand, ashes, or some such material under cover. Here some decay, many shrivel, and those that continue sound and good fall far short of the bulk of the crop. The Carrot is by no means tender, and except in exceptionally severe weather the roots are better left in the ground and taken up as required. I never lift the young roots produced from seed sown in August, and they retain a crisp, high-flavoured freshness which is not to be found in those stored in the usual way, especially as midwinter and spring approach. If all Carrots were allowed to remain in the ground merely protected by a layer of Bracken, straw, or such like material in frosty weather, the roots would give much more satisfaction. —M.

Tomatoes.—There was a query a short time back in THE GARDEN as to the most prolific and best general cropping variety of this fruit, and in an exhaustive article on the subject, Mr. Iggulden treated on most of the sorts worth growing, giving the premier place, as far as I can judge, to Ham Green Favourite. Like everything else, however, different varieties of Tomatoes seem to be influenced by soil, situation, and other conditions, and nearly all large growers have their special, or perhaps I should say their favourite sorts. A large grower in this neighbourhood has singled out Perfection as superior to anything else, and certainly, as I saw it growing with him in company with many old and new varieties, it was by far the best. It did not appear quite so large as Hackwood Park, but it was a perfect fruit and very prolific. Ham Green Favourite was a favourite, but had to take second place to the above-named. No Tomato has succeeded so well with me this year as Dwarf Champion, and I should advise Mr. Iggulden

to give it another trial. It set nearly every flower, and yielded a very heavy crop of fine fruit, not up to the Perfection class for smoothness and regularity of outline, but useful for supplying the kitchen. The Peach I also like. It sets well and is a good cropper. The fruit is of medium size, and is particularly acceptable to all lovers of the Tomato in a raw state, as the skin is crisp and can be readily eaten with the fruit.—E. BURRELL, *Claremont*.

KITCHEN GARDEN NOTES.

PREPARING FOR FROSTS.

THE month of October proved, on the whole, remarkably mild, the genial weather experienced having favoured extra vigorous growth in Broccoli, Cabbage, Celery, and Endive, as well as more hardy kinds of vegetables, and which we may probably have cause to regret. It is to be hoped we may have a colder time of it soon, or it may be a severe frost will happen before vegetables at all tender will have time to become sufficiently hardy to withstand it. In any case it behoves those in charge of kitchen gardens generally to make some provision for protecting all such vegetables as in past seasons have been known to suffer badly from frosts. If precautionary measures are delayed till a "nipping" frost is felt, much mischief will be done in a few hours. When once the points of the leaves of Endive, Lettuce, and Celery, and the hearts of Broccoli are crippled, no amount of after protection will prevent the spread of decay to the more vital part of the plant. In some instances the leaves are the most vital parts of the plant; in others it is the heart, and in a few, notably in the case of Broccoli, it is the stem that is most susceptible of injury. What makes matters worse are the variability of our climate, and also the great difference as regards the relative hardiness of winter vegetables in one district even, and it so happens that experience gained in one part of the country is of comparatively little value in another. As a rule, however, frosts ought to be prepared for early in the season or when the cropping is planned, this, in some instances, obviating the necessity for many protective measures at this time of year. We have long ago discovered that planting Broccoli, Celery, and Cabbage in the lower part of our garden is simply so much labour and space wasted, a moderately severe frost ruining the crops. Broccoli especially will not winter well when planted on loose rich ground, and in no case ought the plants to be crowded. We have the best breadths of plants this season I have yet grown here, the Broccoli, although much of it is about 3 feet apart each way quite covering the ground, while the stems are not more than 4 inches above the soil. Nothing but an exceptionally severe frost will cripple these, and no attempt will be made or thought necessary to protect either Brussels Sprouts, Borecole, Savoys, Chou de Burghley, or Spinach. Leeks are exceptionally hardy. A little soil drawn over the roots of Beet, Turnips, and Celeriac will protect them from a moderately severe frost, a covering of fresh leaves also answering well for a similar purpose. If a portion of a breadth of Carrots, Jerusalem Artichokes, Parsnips, Salsafy and Scorzonera is covered with a good layer of strawy litter whenever a severe frost is imminent, they can be drawn from at any time, and by many this plan is preferred to lifting and storing the roots. Autumn planted Cabbage are growing rather too freely again this season and unless prevented many of them may heart in prematurely. Partial lifting either with a trowel or fork, the plants being afterwards made firm, will effectually check the growth and the Cabbage will be hardier and more serviceable accordingly. Chou de Burghley is also hearting in rather more rapidly than wished for, and a portion of the plants have also been partially lifted with digging forks and pressed back into the soil again. Parsley ought in all large gardens especially to be covered with a frame or frames and the contents of these may prove most acceptable later on. Seeing how comparatively tender the finely curled strains of Parsley are, these collapsing when the inferior strains sur-

vive, some provision ought always to be made against wholesale destruction. A few dozen roots lifted, duly cleared of the oldest leaves, packed rather closely in either boxes or large pots and kept in a cool house, pit, or frame, will usually be sufficient to meet the requirements of smaller places, especially if reserved till all outside is destroyed. Parsley, Cauliflowers, Lettuce, and Endive, stored in frames or pits in any way should be given abundance of air both night and day whenever the weather is sufficiently mild, this retarding growth and keeping the plants harder than they otherwise would be. Where, as in the case of plants covered with cloches or bell-glasses, the plants get plenty of light, there is little or no need to admit air at any time, and it is doubtful if handlights need be opened daily.

GLOBE ARTICHOKE.

These merit a separate paragraph, so much depending upon the winter treatment of this valuable vegetable. Unless protected they are liable to be killed off wholesale, and a difficulty be experienced in restoring the stock in time to be of much service next season. At the present time many of ours are still productive, frosts scotching, but not killing, the heads. The latter are always acceptable, and the stems will not be cut down while the heads are of any value. All exhausted flower-stems remaining ought to be cut cleanly out, and it is also advisable to remove any large outer leaves there may be on the plants. On no account, however, would we cut down the strong suckers, as these if not actually destroyed by frosts may push up flower-stems much earlier than usual next season. Our Artichokes are growing in a low position, and in no sense can the garden be said to be an early one, yet we commenced cutting good heads by the end of May, these being produced by stems springing from crowns carefully protected the winter previous. Ashes mounded well up to and around the clumps are an efficient protection, and in northern districts is, perhaps, the best material that can be used, but we treat our rows to a heavy covering of strawy litter, this also being the only dressing of manure the majority get during the year. It is banked up around the plants to a height of about 12 inches, the hearts of the strongest suckers being well enclosed, but not unduly smothered by it. Worthless seedlings ought long since to have been destroyed and those retained as well as in any clumps that have pushed up few or no suckers protected, the spring being the safest time to destroy old clumps and form new rows, though there is no reason why the site for the latter should not now be heavily manured and trenched.

HEELING IN BROCCOLI.

I have already alluded to Broccoli in my general remarks, but there is yet more to add concerning the practice of laying or heeling in the plants as a precautionary measure against loss by frosts. There are districts in England, notably Lincolnshire, where the greatest difficulty is experienced in wintering Broccoli, no matter how carefully the plants have been prepared for the ordeal. In this case, as well as in various instances where the plants are extra long-stemmed, heeling in is to be strongly commended as being the simplest way out of the difficulty. Few need be told that the stems of Broccoli are most susceptible of injury from frosts, these not unfrequently being nearly or quite dead for some time before the head follows suit. If not well protected by their own healthy leaves they must perforce be covered with either strawy litter, Bracken, ashes, or soil. In the case of a few isolated rows the stems can be easily protected with either of these materials, this not injuriously affecting the size of the hearts. This plan, however, is hardly practicable when large breadths of plants are grown, and it is better therefore to heel these in, even if this materially checks the development of the hearts. Now, or before November is out, is a good time to do it, and the method of procedure may be much as follows: First open a rather deep and sloping trench on the north side of the breadth to be operated upon, and then with the help of a spade inserted well behind the plants carefully lay them in a leaning position, the

heads well facing the north and the roots not being greatly disturbed. Next dispose a little soil rather firmly about the balls of soil and roots and slightly cover the stems with more of the same. Another row of plants can then be laid over and so on till the whole breadth is completed, finishing off with some of the soil wheeled back from the first-formed trench. In this manner the stems are protected by both soil and leaves, and the hearts facing somewhat northwards they are less likely to be injured by rapid thaws. If the work is done in fine weather and carefully no great check will be administered to the plants, and they soon assume a natural appearance. Occasionally Broccoli is lifted with good balls of soil to the roots and laid in rather closely where it can be lightly protected if need be from severe frosts with the aid of either mats, litter, or Bracken. Each time I have adopted this rather extreme practice, either with the motive of protecting or retarding, the roots were well surrounded by solid manure, and in the end fairly large hearts resulted.

PROTECTING CELERY.

Celery is apt to keep badly on heavy somewhat water-logged soils, and ours being clayey land was supposed to be unfavourable to its preservation. For the first season or two after I took charge Celery certainly did keep very badly, indeed either very moderate frosts or much rain hastening a wholesale decay. One of the best remedies I found was planting in quite shallow trenches, a higher position and a lighter soil being assigned the crop. This, coupled with careful and rather high moulding up, answers admirably, no further protection being accorded. When the greater portion of the leaves are left uncovered they are liable to suffer from moderately severe frosts even, the decay resulting being soon communicated to the hearts. There is no reason why high moulding up should not generally be resorted to, a dry time in November being chosen for the work. Where the soil is of a stiff nature and, in any case, where the Celery keeps badly, it is a good plan to surround the stalks with burnt soil or ashes, and if boards are placed on either side of the rows, the ordinary soil being banked up to these, and before they are withdrawn the space enclosed filled in with the added material, not a very great amount of the latter will be needed. The outer stalks ought always to be held or temporarily tied together, so as to effectually exclude the soil from the hearts, care being taken in the earlier stages not to unduly confine the delicate centres, and at the final moulding the leaf-stalks may be gathered well together and the soil lightly pressed around them, only the tops of the leaves protruding. The ridge being rounded and smoothed off, much of the rain and snow water that fall will pass away in the grips formed on each side. In cold, low-lying districts the Celery must be well moulded up as I have outlined, or else be protected in some other way. Covers formed with two fairly wide boards, nailed together to resemble the letter V, can be readily inverted over single rows of plants, and not unfrequently a covering of dry litter or Bracken will ward off frosts, but are not so easily taken off again. When the Celery is planted four or more rows wide in broad trenches, it can be protected either with thatched hurdles or poles and mats.

W. I.

Potato The Puritan.—I cannot speak so highly of this variety as "A. H." in *THE GARDEN* for November 2. I had it growing by the side of several other kinds, amongst them being Beauty of Hebron and Veitch's Ashleaf. After cooking Puritan I came to the conclusion that, from a flavour point of view, it was not equal to Beauty of Hebron, while neither Puritan nor Beauty of Hebron was equal to the Ashleaf. From a cropping point of view, it had no advantage over Beauty of Hebron. I have grown here this season a number of kinds, including several American sorts, and after trying them all I do not consider any of the American kinds equal to a good English-raised variety.—J. C., *Somerset*.

Chou de Burghley.—If Mr. Gilbert had given us nothing but this he would have done good service to gardeners, for assuredly it is one of the

most useful vegetables grown. By sowing seed at the proper time, it comes in from now all through the winter and very early spring, and is equal to almost any Cabbage we have. Why gardeners should cultivate Savoy when they can have Chou de Burghley instead, I am at a loss to conceive, but it must be that they have not become acquainted with the last-mentioned, or surely Savoy would have no place in the garden. Here we have great breadths of the Chou de Burghley, from some plantings of which we are now cutting fine heads, that are close and compact and when cooked mild and tender and of excellent flavour. If we had not had so many Autumn Giant Cauliflowers, there would have been a much greater demand for the Chou de Burghley, but when they are over we shall have these Cabbages to fall back on. What a fine thing it must be for market work at and after this season, and with us it turns in fairly quickly. It is thus not long on the ground, but is soon out of the way for some other crop to follow.—S. D.

A curious place for Mushrooms.—I have just made a rather extraordinary find, viz., a bed of Mushrooms in an outhouse attached to some works situated in the centre of this town (Wolverhampton). The premises have been shut up for many years. The extraordinary part of the thing is, that the Mushrooms have grown through about 4 inches to 6 inches of coal or slack, under which is about the same thickness of litter and manure. The litter is full of natural spawn. When I first saw this natural Mushroom bed it was covered with Mushrooms in all stages. Some were dried up and had evidently been there for a long time, while other patches were represented by Mushrooms of first-class quality and budding spawn quite equal to the produce obtained from artificial beds. My object in writing to you is to point out that the coal in this case has not proved deleterious to the development of the mycelium, but on the other hand it appears to have produced Mushrooms of exceptionally good quality, some specimens weighing 8 ozs. each, and not fully developed.—W. D. BASON.

Market gardening in the West.—During the past week (observes a Penzance paper) the market gardeners of West Cornwall have received a portion of their seed for next season's crop of early Potatoes. The remaining portion will soon arrive; and all the gardeners who want to be among the first to draw (*i.e.*, dig) will have their seed all carefully placed away on shelves to start before many days are over. A few of the gardeners, who aim to get ahead of their neighbours, often save a quantity of their own Potatoes, as it is well known that under favourable circumstances their own-saved seed will produce an earlier crop than tubers which have been imported. But sometimes there comes a frost and then those who thought to be the first are last. The success of the early Potato crop depends on so many circumstances, not only as regards the weather, but also the price, that its cultivation is attended with more than ordinary expense and risk; and those who engage in it have often to speculate on chances which in other cases would be called reckless. The seed that has arrived is in a satisfactory condition—sound and firm; and, from its promising appearance, hopes of a good crop next year are entertained. The price is usually from £4 to £4 5s. per ton; but those who can drive a hard bargain, and pay cash or promptly, can buy on much easier terms than these.

Taking up and storing roots.—The winter being now close upon us it is high time to be thinking of taking up and storing our roots, the first requiring attention being Beet and Carrots, which, as they are rather tender, soon take harm from frost. In the lifting of Beets, although it may seem a very simple operation, great care is required, for, should they become bruised or the main tap roots broken, they bleed or boil out and lose their colour while being cooked which quite spoils them for table. The best place for keeping both Carrots and Beet is a shed, where they ought to be packed in dry sand or earth. Some pit them outdoors, but that is a risky method of storing. Although Potatoes keep well under ground in clamps or pits, they are never so good eating, as it affects their flavour

by causing them to taste earthy, and therefore those for the table should, if possible, always be stored in sheds or cellars from which light is excluded.

HORTICULTURE AT THE PARIS EXHIBITION.

THE show of vegetables was held in the parallel canvas-covered corridors or tents that run up from the Seine almost to the palace of the Trocadero. The upper portions of these corridors were devoted to horticultural accessories. Boilers, hot-water pipes, tools, contrivances, inventions, knives, water-pots, rollers, straw and mat coverings, trellises, stakes crowded these parts to repletion. The lower portion of one corridor was devoted to Potatoes and tuberous-rooted plants, dried Peas, Beans, French Beans, Haricots, Onions, Shallots, Garlic, &c. These did not reach the British standard either in size or form, much of the Mangolds, silver and other Beet being especially rough, the majority of the exhibits running on coarse, rank lines. The vegetable show proper was more remarkable from the mode of showing than any special quality in the exhibits. The vegetables were tastefully arranged, the majority of them, in fact, planted in the double raised bank of earth that forms the base of the tent. This was a flat edition of the canvas top; hence there was no path down the centre, the tallest vegetables being placed or planted there. Throughout a considerable portion of the show tent Tomatoes in pots in full fruitage formed a very telling centre. Where these failed, tall greens followed, so that throughout the whole tent a high line of colour or verdure ran down the middle, virtually cutting the two sides into two sloping banks, only one half of which was seen at one time. All being well under the eye, the products were remarkably well seen, and as Cauliflowers, greens, Cabbages, Beet, Celery, Celeriac, and any quantity of salading were all planted in the soil, the exhibits retained their freshness for any reasonable time. Most of the greens were shown in considerable masses or blocks, and the effect of Brussels Sprouts, Cauliflowers, greens, Cabbages, and broad blocks of Batavian and three varieties of curled Endive thus shown was alike novel and pleasing. Three other specialities heightened both these peculiarities of the vegetable show. These were the extraordinary numbers of Gourds, Capsicums, and fruits of the Egg plant, all of the latter except one as unlike the only varieties grown in England as could well be. These, of different lengths and mostly of a deep purple colour, were more like the fruits of our larger Passion Flowers that were exhibited at the Crystal Palace the other day than any Egg fruits with which we are familiar. They are grown in great numbers across the Channel, and are largely used for cooking. Capsicums, too, mostly of the most fiery red or scarlet, and as large as one's fist, abounded, and these two exhibits in quantity gave great richness and brilliancy to the vegetable show.

But the Gourds, running down in lines three or more deep against the central row of Tomatoes, gave the exhibition its most un-English-like feature. The variety was great and exceedingly varied, some of them lank and long as a green monstrous Cucumber a yard long, others gnarled and knotted like the barnacles on a ship's bottom, and yet others, and most of them, of monstrous size and glowing orange or ruddy colours, such as are sold all over Paris for soup or pies at one or two sous a slice. Assuredly Gourd growing is an important branch of horticulture in France, and some of those round sorts have more colour, and probably better flavour, than those often grown to mix with Apple pies in England. Next to this brave array of Gourds came Carrots, Celery, Celeriac, Onions, Shallots, Garlic, Leeks, Beetroot, Silver Beet, Mangolds, Salsafy, Scorzoneria, Parsnips, and black Radishes larger than the Parsnips, Cardoons, small red Radishes, Endive, Whitloof, and small salading, such as Mustard and Cress in pots. Potatoes formed the outer fringe chiefly in this tent, and in addition to numerous dishes and collections for use there were dishes already greened for seed, and other dishes gnarled,

withered, and studded with strong shootlets, evidently tubers of last year, already far advanced towards yielding almost immediate supplies of new Potatoes for the winter and early spring. Such features as these are never seen at English shows, though they are most suggestive of important cultural hints. Another still more instructive feature was two small sections of Mushroom beds in full bearing thrust in among other products, and standing up sufficiently high above it to show the character of their substance, depth of soil, casing, &c. These were studded with buttons in healthy growth, and seemed to excite much interest. Further on were about a dozen samples of spawn exhibited by different growers, all of the loose, flaky character preferred by the French and well furnished with mycelium, though some were more richly so than others. But, singularly enough, though this is the land and Paris is the city of Mushrooms, there were no dishes at the vegetable show. Possibly as great mounds or hillocks of these may be seen daily at the Halles Centrales, and though they may be had off almost every coster's barrow, they were thought too common to have any place in this great international exhibition. Be that as it may, we have evidently very much to learn from the French alike in the culture and consumption of Mushrooms. The pancake specimens so often seen and eaten in England are never, or very rarely, seen in France. To grow such is esteemed a loss of time as well as of quality, for while these deliciously sweet buttons are degenerating into something little above the level of Toadstools, one or even two lots of buttons might have been produced. Apart from the Cherry, Golden Gage, as well as fairly good red Tomatoes grown in pots, the general exhibits of these were disappointing, and by no means up to the level of our British standard. Neither are Tomatoes anything like so common nor so popular in Paris as in London. In this respect the Halles Centrales was as far behind Covent Garden as the vegetable show at the exhibition was in arrears of Chiswick and the Crystal Palace.

Good edible Cucumbers, too, seem nowhere in France, and the marvel to a Britisher is how such a refined and highly-cultured nation, gastronomically, can go on generation after generation eating those white, or rough, ridge-looking things that seem to suffice, if not satiate, all their Cucumber wants. Assuredly there was not one Cucumber at this vegetable show fit to eat according to our standard of fitness. And where were the Marrows and the Turnips? There is plenty of the latter in the markets and the streets, but I noticed few or none in the exhibition. And as for Marrows, they too seemed conspicuous by their absence. Or can it be possible that some of those Gourds were ripe Marrows, and that a whole nation—like a gentleman at the Chiswick Vegetable Conference the other day—has been carried away with the fallacy that the older and bigger the Marrow, the better, and therefore have elected to eat it ripe? Certain it is I neither saw nor tasted any young, sweet Marrows, the queen of all vegetables, in Paris. Of course, the season is getting late, but it is not yet quite over.

It may seem presumptuous to add that the French growers and cooks must see to it if they are to maintain their supremacy among vegetables. During the Asparagus season this grand vegetable is pre-eminent—at least for size, and Cauliflowers and French and runner Beans are generally plentiful and well served. But at this season there is little but Potatoes of wretched quality and horribly cooked, with an occasional change between Cauliflowers and Haricots; while as for the salad, it is always alike—Endive, plain and curled, drenched in oil, forming a very inferior contrast to the bright and piquant English salad composed of Lettuces, Endive, sliced Beet, Tomatoes, Celery, and Cucumbers, flavoured with various herbs to taste, and mellowed with soft, sweet cream sauce. But in Mushroom culture and consumption, rapidity, certainty, and abundance of production they are still a long way ahead of us. And one of the first problems that ought to be thoroughly thrashed out, either through the press or a special conference on

Mushrooms and edible fungi, is how far our hard bricks of spawn account for our limited success and many failures, and the soft flaky spawn of the French, so full of life in the germ, if not even of Mushrooms in embryo, lays the basis of their greater success.

D. T. F.

STOVE AND GREENHOUSE.

THE STOVE PERIWINKLES.

THIS is a genus of stove-flowering plants not nearly so much grown as they deserve to be; in fact, it is now a rare occurrence to see a well-grown specimen. This arises, no doubt, from an idea that the flowers of Vincas are not suitable for cutting. Such, however, is by no means the case, as I have proved conclusively to my own satisfaction. Indeed, I have found

the Vincas require all the sunlight possible to produce short-jointed wood that will eventually flower well. At no period of their growth is it necessary to shade them at all. Cuttings from old stools should be struck in the spring when the young growth is sufficiently long for that purpose. They strike freely in a brisk heat not too heavily surcharged with moisture. After becoming established in small pots, they should be put near the glass and kept frequently pinched; the point of every shoot should be taken off after it has made two joints. Thus treated, a dwarf and compact plant will soon be obtained with many shoots upon it. Considering that Vincas grow as freely as Fuchsias in the early period of the year, they want a somewhat similar course of treatment in this respect. As the young plants fill their pots with roots they should be transferred to those of a size larger

turely. When growing Vincas for exhibition some years ago I well remember keeping a plant on the dry side, with the result that the flowers were very small and dropped before their time. Finding out my error, I proceeded to water freely, every day, in fact, knowing that my plant had plenty of roots. The result was soon apparent in finer flowers of the size of a crown-piece. These lasted in good condition for a longer time, each terminal having in many instances three open at once. Close attention when in full bloom is needed to remove all decaying flowers as soon as they become loose. If this is overlooked, the succeeding flowers will receive injury from the decay of the older ones. When the plants are in full flower every other watering may consist of liquid manure, not too strong, or the leaves may fall off whilst green. As the plants cease to flower water should be gradually withheld, but not so much as to cause the wood to shrivel. The plants should be kept in the stove during their resting period; removal to a cooler temperature would probably endanger their existence, as it does many another stove plant at such times and under such treatment. If required for decoration when in full flower for the conservatory, Vincas may be safely used by giving them the warmest spot, and by watering with tepid water. They thrive well in a light soil, and should be potted firmly. Light fibrous loam, with well decomposed leaf-soil and a little peat added for young plants, and the usual amount of silver sand, will suit them well. As the plants progress in size, some sticks will be needed to train them to as bushes. Sometimes I have seen them treated as climbing plants and trained on wire trellises; this latter system is, however, unnecessary, as well as too formal in appearance. Insects are not partial to these Vincas; the usual pest of the stove, mealy bug, where it exists, may trouble them somewhat; so also will red spider. The latter can easily be checked by a free use of the syringe, whilst for the former, the shortest way and the most effectual, too, is to throw the plants away and start with a clean stock. The astringent character of the foliage possibly prevents them in a great measure from becoming too great a prey to insect pests. There are three varieties in cultivation in our stoves of to-day. *Vinca rosea* (the rosy Vinca), the subject of the accompanying engraving, is of a most distinct colour. *Vinca oculata*, with white flowers and a bright rosy eye, is one of the freest growing, and under good cultivation will produce the finest flowers. *Vinca alba*, as its specific name denotes, is a white form, quite distinct, but, unlike many plants with white flowers, it is not quite of such a strong growth as the others or coloured kinds. These Vincas can be raised from seed, which is annually offered by our large seedsmen. If this mode of obtaining a stock is decided upon, the seed should be sown early in the spring, and good plants will thus be secured the first season.

J. H.



A well-grown *Vinca rosea*.

them most useful during the autumnal season when outside flowers become scarce. They are so distinct from anything else as to merit more recognition than they generally receive at the hands of many cultivators of stove-flowering plants. A well-grown Vinca will flower for months together without intermission if proper attention is paid to its requirements. After doing good service on the plant, each flowering shoot can be turned to a further account when needed in a cut state. Thus treated, the plants will not take so much room during the winter season, when, after a prolonged period of flowering, the plants need a rest. The stove Periwinkles are easily cultivated in a moderate stove temperature such as would suit *Allamandas* or *Crotons*. Like both of these well-known genera,

till they reach a 6-inch pot, which will be large enough to flower them in during the first season. The plants the following spring will require to be put into smaller pots and shifted on, just as with the *Fuchsias*, as growth progresses, still keeping them pinched. The omission of this last piece of advice will result in a straggling plant, which will become unsightly before half the season is over, thus gaining the repute of being a plant of bad habit. When required in flower at any particular period, about seven weeks should be allowed by the cessation of stopping the shoots. Water should be given freely all through the growing season, at no time allowing the plants to suffer for want of it, or the result will be that the leaves will turn yellow and the flowers drop prema-

Arum Lilies.—J. M. in a paragraph on *Arum Lilies* in *THE GARDEN*, Nov. 9 (p. 432), claims early flowering as one of the advantages resulting from planting them out during the summer. I have grown them both planted out and in pots, and my experience with those which were planted out has always been the reverse of hastening their blooming, and I would therefore much like to hear the opinion of other growers on the subject. My opinion is that a deal more is claimed for this method of cultivating the *Arum Lily* than results support, for although the labour may be lessened a little during four months of the year, there is more work attached to lifting and potting than is the case in repotting pot-grown plants. The mutilation of the root, too, when the plants are being lifted

is an undoubted check to their growth, and I imagine will tend to retard their time of flowering. Besides, it is impossible to get so many rhizomes into a given size of pot as can be conveniently got by the old method, and this, it will be seen, means more pots and consequently more labour in potting and, afterwards, watering. As I have invariably obtained better results from pot culture than from the planted-out system (better than any I have seen grown that way), I am convinced that where early bloom, bushy well-flowered plants, and large spathes are wanted, it is the best means to obtain them. I can get seven good rhizomes into a 10-inch pot, and these yield three spathes each, commencing to bloom in November.—R. C. H.

HARDY AZALEAS.

If *Azalea mollis* had but the scent of the old Ghent Azaleas, it would very soon replace those varieties, as not only are the blooms considerably larger, but they embrace almost every shade of colour, and are charming as pot plants for greenhouses or conservatories, where they are very attractive and make a fine show. To have them in early for these purposes plants should be obtained at once, and in ordering them it is necessary to bargain that they be well set with buds, in which condition most of the leading nurserymen supply them of good size and strength. When received, they should at once be potted in sharp sandy peat, or, failing that, nice gritty, turfy loam, ramming either material quite firm, as, like all fine-rooting subjects, they like a close medium to grow in. When potted, the most suitable place for the plants is a close pit or deep frame where they can be kept moist, which will not only encourage the formation of fresh fibres, but materially assist the swelling of the buds, and much depends on the gradual way these are brought forward as to the way the plants bloom. To hurry them by forcing before they have made a fair start is to induce them to flower prematurely, or to open before the blossoms are fully formed, when not only do they come undeveloped, but they do not last half the time open. As soon as the plants show signs of moving they may be placed in a gentle moist heat, which may be gradually increased till the flowers begin to show colour. After that the plants do better in a cool house, or in a temperature between 50° and 60°, in which the flowers will open freely and last a long time. As soon as their beauty is over, the plants need careful treatment on account of their fresh growth, which is then young and tender and requires protection till the end of May or till all danger of spring frost is gone. They may then be stood out in the open or permanently planted in beds or borders, for either of which purposes they are equally well adapted, and soon grow into fine bushes in suitable places. What they like is peat, fresh leaf-mould, or sharp gritty loam, but no chalk or calcareous matter must come near them, or they soon cease to do well. As these Azaleas send up suckers freely or break out below, they admit of ready increase by being pulled apart and divided. They also seed freely, but it takes years to raise them in this way, and yet it is very interesting to do so. The way to manage to get the seed to germinate is to prepare a bed by spreading fine sandy peat to a depth of 2 inches or so on the natural soil in some shady place, making the peat quite firm and smooth on the surface. After giving a good watering the seed may be sown, but as it is very fine it must not be covered beyond having a little silver sand sprinkled amongst it. A handlight placed over and kept shut will maintain the moisture, but it may be necessary to sprinkle or damp down occasionally during changes of weather, and it is a good plan to exclude light till the seed begins to sprout. Another way of raising these Azaleas is to sow the seed in pans and cover it with a pane of glass, and then stand it in a cold frame out of the reach of sun, when it will germinate freely. S. D.

Blandfordias not flowering.—I cannot get my *Blandfordias* to flower. They have grown very strongly and are making suckers. Would it be advis-

able not to repot this spring? I keep them in a temperature of from 50° to 55° during the winter.—W. SHIRLEY.

THE FANCY PELARGONIUMS.

I ALWAYS notice at the exhibitions of the Royal Botanic Society at the Regent's Park, and at the May exhibition held at the Crystal Palace, that those of the company who go to examine and admire the flowers always group themselves about these beautiful plants, admiring their soft tints, compact growth, and wonderful masses of bloom. And yet it is only in certain nurseries and at a few leading exhibitions that they are now seen—in London, at Leeds, and at the great Whitsun show at Manchester, where, unfortunately, they appear to be becoming a declining feature. The fancy Pelargonium has long been known as the Ladies' Pelargonium. One of the older writers on floriculture has stated that it well deserves the name. "Seeing the profusion of many-coloured flowers it produces, varied as the colours in the rainbow, added to which its sweet foliage renders it indispensable in the formation of a bouquet." This was written twenty years ago, when there were fewer varieties than now, or at least they were not equal in quality to many at the present day. Time was when they were a weak and sickly race, requiring more than ordinary care in their management; now they are of a much more robust-growing character, and will in regard to their cultivation bear the same treatment as the larger flowered varieties. The fancy Pelargonium may be designated a perpetual flowering plant. If the trusses of bloom are removed as soon as the flowers have withered, and the plant be repotted and kept close for a few days, it will soon come into flower again and continue to bloom all the winter if assisted with some artificial heat.

How the fancy or Ladies' Pelargonium originated is, perhaps, not clearly known. It is supposed by means of cross-fertilisation from one or more of the comparatively insignificant flowered species from the Cape of Good Hope. My first remembrance of it carries me back nearly forty years, when the varieties had narrow petals and starry flowers, many of them wanting in symmetry. Gaines, Ambrose, and others were then at work improving the race, but the greatest gains in the way of improving the size and form of the flowers and adding a more robust constitution came with the fine varieties raised by the late Mr. Charles Turner, of Slough. In the general spring catalogue, issued from the Royal Nurseries, Slough, in 1888, there were forty-eight varieties catalogued, and of these forty-five were raised there, the remaining three being Cloth of Silver (Henderson), remarkable for its delicate silvery blossoms; Delicatum (Ambrose), an almost white and singularly free-flowering variety; and Roi des Fantaisies, of French origin, also singularly free and attractive.

The fancy Pelargoniums will succeed in a higher temperature than the large-flowering types; therefore, it is customary to grow them in smaller, closer, and therefore warmer houses. Only let a plant have thoroughly ripened wood, and then, if in robust health, it will bloom abundantly under proper treatment. Supposing anyone were to purchase say a dozen plants from a nursery in the early part of November, and they were sent packed in the usual way, it would be necessary to place them in a close house for two or three days after they are received, and then, having recovered from the effects of the journey, they can have a more airy position, but be kept from cold draughts and from the ill effects of damp. Here they can remain all the winter until early spring, and be repotted into a size larger pots if necessary, though the effect of repotting at that time of the year would be to somewhat delay the flowering period. But it is not necessary to give the plants such large pots as the stronger-growing, large-flowered varieties. If thought desirable, the plants can bloom in the pots in which they are sent from the nursery. After they have done flowering, the wood should be thoroughly ripened in a cool airy house or frame, taking care that the plants are

not exposed to heavy showers. When the wood is sufficiently ripened, cuttings can be made.

For cuttings, strong and clean shoots should be selected, and be cut into lengths of about 3 inches and be put into well drained pots of light sandy soil, placing them in a gentle bottom-heat or in a close frame shaded from the sun. They will soon root in the month of August, and when each has made a shoot 3 inches or so in length this should be pinched, and the result will be that the plant will break into several shoots, and thus lay the foundation of a bushy specimen. When the plants commence to grow again they can be potted singly into 3-inch pots and be grown on in these all the winter, or if advanced enough to bear another shift before Christmas, let it be given, taking care not to overpot.

Mr. J. Robinson, once a famous grower of fancy Pelargoniums at Pimlico, used to strike cuttings in February, making them from the tops of the shoots and placing them singly in 2½-inch pots, using a suitable compost, and plunging the pots in a slight bottom-heat of about 65°, a little air being given by day to prevent the plants from damping off. As soon as they were sufficiently rooted they were potted on, and in this way Mr. Robinson made fine specimens in a short time. I may add that the hard ripened wood of fancy Pelargoniums will not strike so readily as that of the large flowering class.

Fancy Pelargoniums may be grown to almost any size by keeping the house moist and warm, care being taken not to have too great a heat, otherwise the shoots will become weak and a poor head of bloom will result. Fancy Pelargoniums like and must have a little warmth, but when fire-heat is applied plenty of air should be given by day, and the plants should have plenty of room. As the shoots grow somewhat closely together, the outside ones should be kept tied out in some way, as this will afford room for the others.

The soil best suited to the fancy Pelargoniums is good yellow loam, leaf soil, well decomposed manure, some sand, and a little rough peat. Some growers mix broken oyster shells with the compost. It is a good plan to place the fancy Pelargoniums a little higher in the soil at the time of potting than is done in the case of the large-flowered varieties.

Watering is of the first importance. The plants will do better too dry than too wet. The roots, being of a much finer description than those of the show varieties, cannot endure an excess of moisture. As soon as possible in the season fire heat should be abandoned, but the house kept closed if chilling winds blow. The plants grow freely when stood in the lightest part of the house, and as they come into flower they will be helped by a little weak liquid manure administered twice a week.

The time for potting into the blooming pots must depend upon when it is required they should flower. If early flowers are required, say in May, the plants should have their last shift not later than October, and the roots should not have too much room in the pots. If blooms are desired later, they can be had in flower in July by giving the plants a good shift in March. Another way to retard the bloom is to pinch out the points of the shoots, doing this at the end of March and later. This is a good plan if the plants are thin of foliage, as they break out freely and form larger plants with a later head of bloom. R. D.

Salvia Pitcheri.—This *Salvia*, which is now regarded as a variety of *S. azurea*, and known under the name of *S. azurea grandiflora*, merits all that can be said in its favour as a flowering subject for the greenhouse at this time of the year. The long slender shoots of this *Salvia* are seen to great advantage when associated with more massive subjects, and intermixed with *Marguerites* or white *Chrysanthemums*, they form a very pretty picture. It is an old plant in gardens, but would appear to have been lost for a long time till eight or nine years since it was brought prominently forward by Messrs. Cannell, and then attracted a great amount of attention. Like the rest of the greenhouse *Salvias*,

it is of easy propagation and culture, but being less robust than the others, it may be grown in smaller pots than the more vigorous ones. A coloured illustration of it appeared in *THE GARDEN*, June 11, 1881 (p. 600).—H. P.

Variegated-leaved Carex.—At the last meeting of the Royal Horticultural Society, Messrs. Veitch were awarded a first-class certificate for a small-growing *Carex* with variegated leaves, which bids fair to prove an extremely useful plant, and one that will, no doubt, be grown largely for market work. The *Carex* in question forms a tuft of very narrow leaves that arch over in a graceful manner, and with a wide band of white down the centre of each leaf. Among subjects suitable for the decoration of the dinner table it should take high rank. The plants as exhibited were not in flower, so that its specific name could not be definitely decided upon, but it will probably prove to be almost hardy, though the specimens shown appeared as if they had been pushed on in heat.—H. P.

Nertera depressa.—This pretty little plant, which was figured in the *Botanical Magazine* just twenty years ago, is a native of Cape Horn and the Antarctic Mountains; it also extends to New Zealand and across the Andes to New Grenada, but I have never known anyone to preserve it in the open air through the winter months in this country. For some few years this was a very popular plant, and large stocks of it were grown in our principal nurseries; now, however, one seldom sees it. I was therefore agreeably surprised to find nice examples of the plant in full berry in the gardens at Burford Lodge, where they are used to give a little colour to the *Odontoglossum* house at this season. I omitted to ask Mr. White where he grew the plant in the earlier part of the season before the berries were set, but when I had the plant in quantity at the Messrs. Rollisson's nursery I obtained the best results when the plants were stood on a shelf close to the glass in a greenhouse during the time of flowering; in this position the flowers opened well and became fertilised. Treated in this manner the flowers set evenly and well, forming dense cushions covered with bright orange-red berries. As soon as the berries begin to swell the plants must be removed to a cold frame, placed well in the sun, and not be allowed to suffer for want of water. It would not do to allow the plants to remain long under glass after the berries began to swell. If so, the plants started to grow again, and the berries became quite smothered with the new growth. I have also had nice berried cushions on plants kept in the cold frame, but I prefer a little extra encouragement for them during the time of blooming.—W. H. G.

Double Chinese Primulas.—The double varieties of *Primula sinensis* are all valuable for providing a supply of cut bloom during the winter months; the old variety *alba plena*, however, is, I consider, the best. I know of no other plant that will keep up such a succession of bloom throughout the winter. When well managed the plants will commence to bloom early in the autumn, and continue until late in the spring. The flowers, too, are valuable on account of their lasting well after they are cut. This old favourite is also more easily managed than some of the larger flowered varieties. Plants that are divided or propagated from cuttings annually succeed best, and are not so liable to rot off as older ones. The plants may be grown on in cool pits during the summer, or, if in a house, they should stand on a cool moist bottom and have plenty of top air and no artificial heat. This is an important point. I believe plants are brought into an unhealthy condition through being kept in a hot, dry atmosphere, for it is a common error to suppose that they must be grown on a shelf or a dry, open stage to prevent damping. As soon as the dull, damp weather comes on in the autumn the plants require just sufficient fire-heat to dry the atmosphere. The plants must be gone over regularly, and all the old leaves taken off as close to the stems as possible; if this is done, damping will not cause any trouble. Any plants that have much stem above the surface of the soil may have a little

fresh compost pressed rather firmly round the neck and brought up close to the base of the bottom leaves. A good compost for growing double *Primulas* in consists of about two parts good yellow loam, the other part to be made up of leaf-mould and well rotted manure in equal portions. Before adding the leaf-mould and manure to the loam a little slaked lime may be mixed with them. A good sprinkling of sharp sand should also be added. The pots should be well drained and the plants potted fairly firm, keeping them well down so that the crowns of the plants are well in the soil. If the base of the lower leaves is partly in the soil it will be better than if the plants are potted too high. Watering must be carefully attended to, especially during the winter. *Primulas* do not like to be kept very dry; on the other hand, overwatering is a great evil.—A.

WORK IN PLANT HOUSES.

ROSES.—One of the chief causes of failure when an attempt is made to force *Roses* in houses that are partially occupied by other things is that the other plants daily require more air; whereas to treat the *Roses* as they require the house should be kept continually closed all through the winter, as if any air is given it is almost impossible to prevent its injuring the tender young leaves of the *Roses*, which fall a prey to mildew. Against this it is a hopeless task to wage war whilst the cause that produces the parasite continues. It is scarcely necessary to say that where a regular supply of flowers is wanted through the early months of the year, the *Tea* varieties alone are to be depended on. The plants that had set their buds out of doors during the latter part of summer and were housed some weeks back will now be opening their flowers, and will continue to do so without much artificial heat. But it is now time to start a portion of the stock that is intended to bloom through the latter portion of January and the following month. The strongest and best plants should be chosen, as they may naturally be expected to bear forcing better than those that are weak. If the plants are repotted about the end of the summer in good new soil, well enriched with manure, the roots should by this time have got well hold of the material and the plants be in a condition to make strong wood. To further assist this, as soon as the young growth begins to move manure water or surface dressings with concentrated manure should be given freely. It is well to err on the right side by not giving too much of any potent stimulant at once. But so far as forced *Tea* *Roses* are concerned, when in the hands of those who have not had much experience with them the plants seldom get assistance often enough, or to the extent that they require. It must not be forgotten that with the *Tea* varieties the stronger the growth the larger number of full-sized flowers they will bear. Before putting the plants in heat, it is requisite to see that they are quite free from aphides or mildew. If either of these pests is present it will increase apace in the genial atmosphere which the plants are to be subjected to, and will be worse to deal with after young tender leaves have been made than previously. Syringe overhead once a day, not the surface sprinkling overhead that is often looked on as all that is needed alike for *Roses* as for other things. The water should be directed to the under side of the leaves. If the work is done properly, neither aphides nor red spider will give trouble, provided the stock is clean to begin with.

ROSES, HYBRID PERPETUALS.—Hybrid varieties that have been grown in pots and are intended to flower towards the end of winter and in the spring should be cut in as far as they may require. By doing this now in place of putting off the operation until the plants are about to be put in warmth, the buds will become plump and in a condition to start more readily into growth. The plants should be put in cool airy pits or frames, with as much, but no more water than will keep the soil fairly moist. Any excess of water now when the roots are dormant would injure the young fibres, which should be ready to move as soon as top-

growth is to be excited. If high coloured flowers are wanted to mix with the light shades of the *Tea* sorts, plants of the old Hybrid *Tea* variety General Jacquemont may now be put into gentle heat. This old favourite *Rose* is one of the few high-coloured varieties that may be depended on to give early flowers. Any plants that have been grown in the open ground, and that are to be potted for blooming indoors in spring, should now be lifted and potted. Use good holding loam, well enriched with rotten manure, and a little sand. Drain well, and see that means are taken to prevent the soil getting down into the material. This is more necessary with *Roses* than some things, as when the plants are stood out of doors in summer, worms are more liable to get into the pots than in the case of ordinary greenhouse stock that is mostly kept under glass continuously.

DOUBLE CHINESE PRIMULAS.—When well grown, which they not often are, double *Primulas* are scarcely ever out of bloom, but it is during the winter months that they are the most valuable, especially where there is much demand for white flowers for bouquets. One of the principal things that causes indifferent success with these *Primulas* is their being kept too cold in the winter. In a cool greenhouse temperature the flowers come on very slowly, and the plants are so much inclined to damp off, through which many are lost outright, that the stock increases slowly. Medium-sized plants, such as can be accommodated in 7-inch pots, are more to be depended on than large examples, as the air and light can circulate better through them, and when the plants are very large they are apt to damp in the centre. Specimens that are strong and have filled the soil with their roots should be kept from this time through the winter in a temperature of about 50° by night. They should be raised so as to be within 18 inches or 2 feet of the roof of the house or pit they occupy. Under these conditions they will keep on making the necessary growth to enable them to flower freely, and there will be no danger of the leaf-stalks damping or the plants rotting off at the collar. The old double white variety is still the best for general use.

PRIMULAS—CHINESE SEMI-DOUBLE VARIETIES.—Plants of the semi-double sorts that have been raised from seed sown early in the year, and have been pushed on since, will now have attained a useful size. They grow faster than the double kinds, being stronger and more vigorous, and they are not so liable to damp off as the double ones. Yet to enable them to give the best return in the shape of plenty of full-sized flowers, they should be kept through the winter, if possible, in a temperature something like that named for the double sorts. In the absence of this the flowers come on more slowly than they should. It is also important that the plants be stood near the glass.

PRIMULAS—SINGLE VARIETIES.—Plants raised from seed sown early should by this time have attained enough strength to be allowed to bloom, unless there happens to be no demand for the flowers, in which case it will be better to continue a little longer removing the bloom as it is formed. This will tend to strengthen the plants so as to enable them to flower better later on. With younger stock raised from later sowings that are required to bloom in spring the flowers should be taken out as soon as they are prominent enough to get hold of. A temperature of 45° in the night is better for single *Primulas* than keeping them cooler; as, though they will bear cooler treatment than the double sorts, the flowers come on more slowly when subjected to a low temperature. Keep the plants near the glass where they will have plenty of light. All the stock will be benefited by weak manure water; this should be given each alternate time the soil requires moistening. Assistance of this kind is especially required by the double kinds when kept in a temperature such as advised.

PRIMULA SIEBOLDI and any others of the hardy section of *Primulas* that have been grown in the open ground, and that are to be flowered in pots, should, if not already taken up and potted, be at once attended to, as after this frost might occur at

anytime so as to interfere with the work. P. Sieboldi, of which there is now such a number of beautiful varieties, ranging from pure white to the deepest crimson, is one of the most charming as well as useful of all the Primula family for greenhouse decoration in spring.

VIOLETS.—These flowers have in most places been plentiful this autumn, the weather having favoured their production out in the open ground. If the plants have been properly prepared, they will now be strong and capable of yielding a full crop of flowers. A slight bed of leaves that will give a little warmth to the soil above in which the plants are put is all that is necessary, with the requisite covering and protection to the frames when the weather becomes frosty. Air must be admitted freely every day. Give enough water to keep the roots sufficiently moist, the gentle warmth of the bed will set them moving and necessitate the soil being kept in a healthy condition, yet any excess of moisture must be carefully avoided. T. B.

PERPETUAL CARNATIONS.

WE were told some two or three years since in THE GARDEN by M. Sisley, of Lyons, that the perpetual or Tree Carnation first originated in France about fifty years ago, and after that many new varieties quickly made their appearance. The culture of this class of Carnations would appear to have been followed ever since in the neighbourhood of Lyons, and now considerable numbers are sent to this country from that favoured district every year. They have been grown in the open ground, and usually reach here in the shape of dwarf bushy plants, many of which are bristling with flower-buds. It is surprising how well they bear the journey, provided sufficient care and attention are bestowed upon them on their arrival here. The soil in which these Carnations are grown is a stiff reddish loam (almost clay), and if lifted when fairly moist it is of sufficient consistency to remain around the roots unless the plants stand about too long after being taken up and are allowed to become dry. On their arrival in this country the plants should be potted without delay and placed in a structure where there is a gentle fire-heat in order to encourage the formation of roots. If the plants reach here about the early part of October and the surrounding conditions are favourable, they quickly recover from the removal, and the roots take hold of the new soil. By English cultivators the plants are, as a rule, grown entirely in pots, being usually propagated in heat very early in the year, and shifted on as the plants require it. The cultivation of these Carnations is certainly greatly on the increase, for many of our nurserymen grow large quantities in addition to the increased number of flowering plants sent from France. The first place among nurserymen that make a speciality of these Carnations must be assigned to Mr. Charles Turner, of Slough, who during the early part of the present year announced a dozen new varieties for distribution, two of which had already received first-class certificates from the Royal Horticultural Society. Between the productions of the two countries there is, in the matter of varieties, some little difference, for whereas among those raised in France flowers of a striped or parti-coloured character predominate, the tendency in this country is towards the production of self-coloured blossoms. Some of the flaked and edged varieties are wonderfully pretty, but to the grower for market they are of but little use, as the demand for them is so limited. By some they are greatly admired and form a very pleasing variety in the greenhouse. Of course, where a succession of Carnation blooms is required throughout the winter the plants should be grown on in two or three separate batches, as then when one is exhausted there is another to take its place. In the culture of Carnations for blooming in the winter the great thing to bear in mind is that plenty of air is at all times essential to their well-doing. If the atmosphere is too moist the leaves are liable to be attacked by mildew, which must be especially guarded against, and a sharp look-out should be kept for aphides, which quickly injure the unopened buds.

Of the long list of varieties now in cultivation it is somewhat difficult to make a selection, but there are some good and well-tried kinds that must always be included among the best.

Of bright coloured varieties, especial mention may be made of Lucifer, Rufus, and Huntsman, with Alegatière and Sir Charles Wilson. Among the pinks, that beautiful soft-tinted flower Miss Joliffe is by far the most popular, and often grown to the exclusion of all others, but quite distinct from all these are Irma, rich bright rose-pink; Mrs. Llewellyn, bright rose; Le Favori, vivid pink; and Rose Rivoire, rich magenta-rose, a very large-flowered variety. Paquerette is of dwarf free-flowering habit, while the blooms are large, well formed, and of a very pleasing shade of blush.

Of yellow varieties the most popular is Pride of Penshurst, and though so much grown it is by no means of a desirable habit, being so tall and loose. The fringed-flowered Andalusia is still more open to this objection, but the individual blooms are beautiful. Germania is also another good yellow Carnation of this class, while in some of the parti-coloured flowers yellow greatly predominates. Among those with white blossoms must be especially mentioned Mlle. Carle, which is a free-flowering variety of good habit, and in addition to this it is very pure in colour. To the lover of sweet-scented flowers this possesses another recommendation, for it is one of the most fragrant of its class. La Belle, a fringed flower, is also very good, and to this may be added L'Hermine. Of dark-coloured flowers we have Adrien Benoit, rich crimson-purple; Dr. Raymond, crimson; Indian Chief, deep crimson; The Moor, dark crimson; Negro, deep maroon; and Purple King, rich purple. Among the striped, flaked, and parti-coloured flowers, some of which are exceedingly pretty, may be mentioned Jean Sisley, salmon, edged and suffused with bright red; Chevalier, yellow, striped with carmine; Marie Thevenet, pale pink, flaked with magenta-purple; Prince of Orange, yellow, edged crimson; Mme. Loury, white, heavily edged and flaked crimson; Whipper-in, scarlet, with dark stripes; Empress of Germany, white, lightly tipped and striped red; Lavigne, white, flaked and spotted rich purple; Flambeau, buff, edged and flaked with red; Mme. Sainte-Hyacinthe, yellowish ground, striped rose; and Oriflamme, glowing scarlet, flaked with a lighter tint. H. P.

GARDEN FLORA.

PLATE 727.

THE FLAME FLOWERS.

(WITH A COLOURED PLATE OF KNIPHOFIA ALOIDES
VAR. GLAUDESCENS.*)

THE Flame Flowers, as defined in the "Genera Plantarum" and other standard works, number upwards of twenty species, chiefly restricted to the Cape of Good Hope, which indeed may be termed their headquarters, and the mountains of Abyssinia, from which district we have about six of the twenty. Two come from near the equator, and a single species from the mountains of Madagascar. In our climate under the altered conditions which they find they affect dry rather than damp situations, but we are assured by Colonel Grant, who found the species bearing his name in Tropical Africa, that it grows in swampy ground, of which he describes it a great ornament, having a powerful hoiied smell too sweet to be agreeable. It has been lately named K. Granti by Mr. Baker, but it is doubtful if it is in cultivation now. It is a very curious and distinct species. Another new one is K. Kirki, which first flowered in the Royal Gardens, Kew. We believe it was collected in South-east Tropical Africa, and is a much more

ornamental species than K. Granti. Both will require the protection of a warm greenhouse, and are consequently out of count as hardy herbaceous plants. The Madagascar kind, a dwarf, pretty, white-flowered species, does well in a cool conservatory, but unless for variety it is not worth troubling much about. Taking into consideration all the species, Cape and Abyssinian, introduced since the advent in 1707 of the old and well-known K. aloides (Tritoma Uvaria of most gardens), how few equal that grand old species, by far the most gorgeous, the hardiest, and most easily managed of the entire genus. The varieties of this are very numerous, many of our most beautiful and brilliant late autumn forms being allied to this species. Their precocity in flowering under altered conditions has given rise to such names as *præcox*, *serotina*, &c., few of which, however, flower annually at the same time. As we have stated above, they are amongst the easiest hardy flowers to cultivate we possess, and although many of the others are equally hardy and easily grown, K. aloides and its varieties are far superior to all the other kinds as effective autumn plants. Grouped in the wild or picturesque garden, isolated on lawns or in parks, or judiciously mixed with various kinds of shrubs, they have no equals, and the beautiful effects that may be obtained by informal grouping are quite surprising. Grouping is the only way to see this plant at its very best. To be effective, Kniphofias must be grown naturally, and the only way to attain this is to plant them where they will be unhampered and allowed to grow as they like. Dry banks and light sandy soil suit them admirably, and we have found them little affected by Elm roots or the shade of trees. Flame Flowers can be increased by seeds or division, the latter the quickest and most satisfactory. The following are the species in cultivation at present so far as we know:—

THE COMMON FLAME FLOWER (K. aloides).—The old Tritoma Uvaria is, in our opinion, by far the handsomest of all the species yet introduced to cultivation. It is one of the most important of our autumn-flowering plants, and in good light soil it has no equal as a border subject. There are few more effective plants suitable for grouping, and none certainly more able to take care of itself. The only conditions to be guarded against are too exposed situations and heavy soil. With the latter it may do very well and give a fair show of bloom, but where the soil is light and dry the yield of bloom is much greater and the growth of the plant more satisfactory. Although a native of the Cape of Good Hope, no plant could well be harder or more easily grown. It was introduced about 200 years ago. The variety *glaucescens*, of which the accompanying figure will give a fair idea, is a charming form with large heads of flowers, vermilion-scarlet when in bud, changing to a more orange colour after expansion. It is one of the freest bloomers of the group, and hence one of the most desirable. Introduced about 1859, K. aloides var. *maxima* is much taller than the type, the leaves 4 feet to 5 feet long, the heads longer, and the flowers much larger. It is also known as *grandis*. Orange Free State, 1862. *Maxima globosa* has more globose heads of bright yellow and red flowers. K. a. var. *nobilis* is a still more robust form, with flower stems from 6 feet to 7 feet high, the heads 1 foot to 1½ feet long, flowers orange-red; produced from August to the beginning of November. K. a. var. *præcox*, figured under this latter name in Saunders' *Refugium Botanicum*, t. 168, seems about midway between the type *aloides* and *Rooperi*. The name *præcox* was given on account of its precocity in flowering about the middle of May in Mr. Saunders' garden at Reigate, but it afterwards flowered in September, and also does now. The variety *serotina*, sometimes called *chloroleuca*, is a very late form with yellowish flowers. The variety *longiscapa* has very long flower-heads,

* Drawn in Messrs. Krelage's nursery, Haarlem, by Arentine H. Amsden. Lithographed and printed by Guillaume Severeyns.



KNIPHOPHIA ALOIDES VAR. GLAUDESCENS

and is a very fine form. *Grandiflora*, Saunders, &c., are only a few of the many forms found in gardens under all kinds of curious names.

K. BURCHELLI is another plant about which there is much confusion in gardens. It is said to have been introduced about 1818, from the southern provinces of the Cape, and was figured in the *Botanical Register*, t. 1745. The leaves are bright green, firm in texture, about 2 feet to 3 feet long, and about an inch broad at the base, tapering gradually to a point. The margins are quite smooth, and with about twenty veins on each side of the midrib. Flower-stems as long as the leaves, the heads dense, and 3 inches to 4 inches long, the upper flowers bright red, lower bright yellow, the style only finally exserted. It is not far removed from *aloides*, and not worth troubling much about, unless where variety is desired.

K. CAULESCENS differs from all the other Cape species, excepting *K. Northie*, in having a distinct stem about a foot in length. From the old *aloides* this species differs in its dwarfer habit, its very glaucous leaves and flower-stems, its short flower-heads, and smaller flowers. The leaves are 2 feet to 3 feet in length, and 2 inches to 3 inches broad at the base, firm in texture, very glaucous, and having about fifty distinct ribs, and distinct keel. The flower-heads are dense, 4 inches to 8 inches long, flowers nearly an inch long, straight or slightly curved, deep blood-red when young, becoming yellow after expansion. Though not so beautiful a plant as *K. aloides*, this species will be found

collected in a dense oblong head, and are bright canary-yellow, the stamens and style bright red, and exserted about twice the length of the perianth. A very pretty little species most suitable for warm spots on the rockery; it most nearly resembles the better known *K. pumila* of the Cape. A native of Abyssinia.

K. FOLIOSA.—This fine species is one of the most robust of the whole genus, and easily recognised at a glance from all others by the broad leaves and exserted stamens. Unlike *K. caulescens*, *K. foliosa* is quite stemless, the leaves, gathered in a dense rosette, 3 inches to 4 inches broad at the base, and

pumila, from which, however, it differs in a remarkable manner. It forms a fine rosette of spreading leaves 3 feet to 4 feet in length, widening at the base into a broad clasping sheath, narrowed gradually to the tip, bright green on both surfaces, moderately keeled, and almost three-cornered. The margins are usually quite entire. The flower-stem is 3 feet to 4 feet high, with a head of drooping flowers 3 inches to 4 inches in length; flowers bell-shaped, of a dull vermilion-red; stamens and style only slightly exserted. The variety *distachya* is more robust, with broader leaves, the lemon-coloured flowers smaller, and the stamens more decidedly exserted. The plant figured in *THE GARDEN*, May 23, 1881, as *K. carnosa* is, I believe, this species, and not *comosa*, as is generally supposed. It was said to be a clerical error for *K. comosa*, but in that species the stamens are fully as long again as the flower, while in the figure mentioned they are not more exserted than in ordinary *K. Leichtlini*. In *K. comosa* the perianth is yellow, short, and much contracted near the base. In *K. Leichtlini* this is not so marked; the perianth is longer, and, as in *K. carnosa*, the stamens are less exserted. Indeed, the only difference in *K. carnosa* from the figure of *K. Leichtlini* in the *Botanical Magazine* is in the colour of the flowers.

K. MACOWANI.—This amongst the dwarfer species is a particular favourite. It is a remarkably distinct form, and one of the most desirable for rockeries and front rows of mixed borders. With us it has always proved perfectly hardy, and the never-failing profusion of its lovely flowers marks it as a desirable subject for small and large gardens alike. It is suitable for situations where the more gorgeous *K. aloides* would be out of place, and it is so distinct from that species as to be worthy of cultivation in all collections. It forms a short stem, clothed with the fibrous nerves of the old leaves. Flower-stems 1 foot to 2 feet in height; the heads dense, 2 inches to 6 inches long; the flowers with reflexed or spreading tips, bright orange-red, the lower or older ones yellowish; the leaves slightly glaucous, narrow, erect, about 2 feet long, with three to five strongly-marked veins on each side of the midrib. Syns., *Tritoma rigidissima* and *maroccana* of gardens. A native of the Cape in grassy places on the Boschberg, 4000 feet to 5000 feet elevation. *K. corallina*, a lovely hybrid, raised by Deleuil, of Marseilles, between *Macowani* and *aloides*, is a more robust plant altogether, and a companion for its stronger parent.

K. NATALENSIS is a new species lately introduced from Inanda, Natal, and flowered at Kew this summer and autumn for the first time. It has a stem 2 feet to 3 feet in height, a rather loose head, 6 inches to 8 inches long, of orange-red flowers with darker red veins, the lower and older ones yellow or slightly tinged. A pretty plant, but doubtfully hardy.

K. NORTHIE.—This is the plant referred to by Mr. Baker in *Journal of Botany*, 1885, under *K. caulescens*, painted by Miss North from a plant procured near Grahamstown. This has proved to be an entirely new and distinct species, and though perhaps not so beautiful as its ally, *K. caulescens*, it is sufficiently so to entitle it to a place in the collection. Its hardiness is doubtful, and it will be better until more plentiful to treat it as a cool green house subject. It has a distinct stem 2 inches to 3 inches in diameter, produced above the soil. The leaves number thirty to fifty in a regular rosette, glaucous, channelled on the surface and remarkable in the entire absence of a keel. They taper gradually from the broad base to the point, the margins finely serrated. The flower-stems stout, 4 feet to 6 feet high; heads dense, about a foot long and 4 inches to 5 inches in diameter; flowers pale yellow, the upper ones only flushed towards the tip with red, the style a little exserted. Discovered by Mr. W. Dugmore near Grahamstown.

K. PALLIDIFLORA is a pretty dwarf species from Madagascar, with very narrow gracefully recurved leaves and very small pure white flowers. It can only be treated as a warm greenhouse plant.

K. PUMILA.—This handsome little Cape Flame Flower is distinguished from all the other species



Flame Flowers in the wild garden.

a useful addition. It is perfectly hardy on high exposed ground, and we have found that as a rock plant it is all that can be desired. A native of South Africa, where it was found by Mr. T. Cooper, about 1860, when travelling for W. Saunders in the Stormbergen Mountains.

K. COMOSA is a much dwarfer and altogether smaller plant than *K. aloides*, with narrower three-cornered leaves and smaller flowers, and having the stamens protruding over an inch beyond the perianth. The leaves are in dense rosettes, bright green, erect, and very narrow, pointed, and nearly three-cornered, 3 feet to 4 feet long, and about an inch broad at the base. The flowers, all drooping, are

tapering gradually to a long, fine point, green on both sides, the edges slightly rough; the flower-stems erect, stout, 2 feet to 3 feet long, the flowers in a dense cylindrical head about a foot in length; flowers bright yellow, or often tinged with red in mild autumns. Native of Abyssinia. Syn., *K. Quartini*.

K. LEICHTLINI.—This beautiful and distinct species is a native of Abyssinia, where it was discovered and roots sent to the garden of the Grand Duke of Baden-Baden by the indefatigable Schimper about 1880. It first flowered in this country in the Royal Gardens, Kew, in September, 1881. As a species it is perhaps nearest to the pretty little *K.*

by its distichous leaves and short cup-shaped flowers. It is one of the oldest species, having been first introduced to Kew by Masson about 1774. It has narrow leaves, 1 foot to 2 feet long, tapering gradually to a point, with twenty to twenty-four veins and smooth margins. Flower-stem as long as the leaves, stout; the heads moderately dense, 4 inches to 6 inches long; flowers orange-red, the style and stamens being half as long again. Central and southern provinces, northward as far as Colesburg and Bechuanaland.

T. ROOPERI, though distinct, is nearly allied to *K. aloides*; its chief characters are the broad glaucous leaves and the broad oval bracts. The true *K. Rooperi* is an early or summer-blooming plant, while the one generally grown under this name flowers quite late in autumn. It was first described in the *Gard. Comp.*, t. 113, by the late Mr. T. Moore, from plants received from the Rev. T. Rooper, who obtained it from Kaffraria. One of the chief distinctions claimed by Mr. Moore was that in *K. Rooperi* the veins running through the leaves were quite transparent, which was not the case in any other species examined by him. The leaves are 3 feet long, dull green; flower heads densely crowded, flowers orange-red, becoming yellow with age.

K. SARMENTOSA.—A very pretty species from the Cape, introduced by Mr. Williams, nurseryman, of Turnham Green. It is easily distinguished from aloides by its smaller glaucous leaves, the edges and keel being smooth and not serrated, as in that species. They are 2 feet to 3 feet long with about twenty-four veins. The flower-stems are of about the same length, the heads dense, the upper flowers red, the lower yellow. A plant in gardens called *hybrida sarmentosa*, and which seems to be a form of this, is a very fine late-flowering kind; all the flowers are bright red, the tips only of the lower ones yellow.

D. K.

FRUIT GARDEN.

W. COLEMAN.

PLANTING AND RENOVATING ORCHARDS.

NOTWITHSTANDING the fact that fruit trees have made a good average growth of clean wood, and fine prominent flower-buds are very abundant, the leaves, owing to the extreme mildness of the season, have been more persistent than perfect maturity might lead us to expect. I use the word "perfect" advisedly, as I have observed for a great number of years that well-managed fruit trees invariably ripen their wood well and show a profuse blossom when the Elms put on their sheen of bright gold towards the end of October. No fear next spring of feeble and decrepit flowers, or the cry that tropical weather has forced them past their strength; they will stand all the sunheat with which these islands are likely to be blessed, and to a certain extent they will be well prepared for a more subtle enemy in the form of late spring frost. Protection in the orchard is simply out of the question, but trees, old and young, in a great measure may be prepared for frost, as we frequently find those which have been transplanted or root-pruned carrying good crops of fruit when in the same orchard their undisturbed neighbours are less fertile. Such being the case, I would urge all who have suitable land to take advantage of the present month not only for transplanting their young standards, cordons, and pyramids, but also for working round and amongst the roots of older trees which may be too strong, or more likely too weak, to set and swell their fruit beyond the normal size so frequently met with in our poverty-stricken orchards. Quite recently I read an article in which the writer suggested the possibility, if not the probability, of our overdoing our fruit trees with deep tilth and good living. This may hap-

pen in some localities, but certainly not in these parts. Neither does it happen in the heavily-manured market gardens about London, for there, if anywhere, those shrewd cultivators get full crops of the finest fruit when miserable grass orchards in the country fail or produce small scabby samples, a sure sign of a cold, water-logged subsoil. The days of working in an unlimited quantity of rank manure and planting trees upon free stocks over it have passed away, and practical cultivators, like skilled horsemen who are not afraid of their steeds bolting, plant on deeply-stirred, well-drained loams, reserving their manure for top-dressing or mulching when the promise of a bountiful harvest is secured. On such soils the trees should be planted without delay. If on free stocks, the standard Apples and Pears may have at least 40 feet by 30 feet of head-room, and then, if carefully protected and kept thin in the heads, they may be left to extend in every direction, until, like "A. D.'s" Mother Apple, they become marvels of fertility. The ground meantime may be largely cropped with bush fruits, Strawberries, vegetables, or being specially adapted for fruit, Apples on the Paradise and Pears on the Quince may be introduced very freely. These trees commence bearing the second year, produce the finest fruit met with in this country, and if root-lifted once or twice, they grow into money, as they can be transplanted when the standards overshadow them. But why plant standards at all, some may ask, when the dwarf trees on Paradise and Quince stocks come so quickly into bearing, suffer less from storms, and are so readily reached when the time arrives for thinning, cleansing, and gathering? Well, from the farmer's point of view, the standard trees are clear of stock, and the ground, as in Canada after five or six years' culture, can be laid down in Grass for sheep, lambs, and calves, which require daily attention in sheltered spots near the dwelling house. From the professional fruit grower's point of view, smaller tracts devoted specially and entirely to fruit will pay better, and this method of planting must and will, I believe, be arrived at before we can compete with other nations. Mr. Bunyard very wisely says, spare old trees, naturally assuming that they are good varieties, and will be well nurtured and looked after; but simply sparing hundreds of acres of inferior sorts which do not pay the rent is worse than useless. Far better plant one-tenth of the area with profitable varieties, selecting, as a matter of course, the most suitable soils and sites, and allow the old orchards to revert to open pasture and tillage. This, no doubt, is work which the landlord should perform, and why not when he expects his rent? and wheat and old orchards which gave cider to the Roundheads and Cavaliers will not pay it. I know at the present time a small plot within forty minutes' walk planted with about four sorts of Plums, a few Apples, Black Currants, and Gooseberries. A strict debit and credit account has been kept, a good rent has been charged, and although in its infancy and seasons have not been good, it has paid over ten pounds an acre clear profit.

Then as to varieties. Apples, Plums, and bush fruits, unless the land is especially adapted, pay better than Pears; but who is to make the selection? Well, there is hardly a parish in which some intelligent and enterprising man has not made a start. Let him be consulted as to the varieties which do best in the district and sell best in neighbouring markets. If a mistake is made, let it be on the side of too few of the best sorts, and if any planter wishes to see the fruit before he buys, he has only to visit our great trade growers' nurseries in September, or their fruit rooms in October, and

there he will gather the fullest information as to the growth of the trees, the appearance and quality of the fruit. Nurserymen, no doubt, are adding new varieties—and old ones, too, for that matter—under new names, but planters, like any other class of traders, must learn their business, and when competent, the reduction of fat lists will rest in their own hands. Confining myself to Apples, I repeat that varieties are greatly too numerous, and, anxious as I am to see all second-rate sorts expunged, no one more than myself would shrink from checking the introduction of new varieties. They must and will come, and so long as inexperienced people ask for any particular sort, the trade will supply it. I do not for a moment infer that all new sorts are inferior, as some of the most promising Apples have been introduced within the past few years; therefore, assuming that there are as good fish in the sea as ever were caught, I see no reason why our best standard varieties should not be equalled, if not beaten in the future. The one-Apple man who grows Cox's Orange Pippin to perfection may rest and be thankful; but this variety is tender, and does not succeed on all soils, especially upon cold heavy marls. The aim of the intelligent hybridist, then, should be the production of an Apple equal in flavour and superior in hardiness of constitution.

HARDY FRUIT SHOWS.

GREAT interest is taken in these exhibitions by many who have not hitherto taken part in them, owing to the national character imparted to the movement for encouraging supplies of home-grown produce of various kinds, and of hardy fruits in particular, by the action of the Lord Mayor and other public bodies, aided, as they appear likely to be in the financial part of the movement, by donations from those who are ever ready to give when once the necessity is proved.

In forwarding this movement, exhibitions of fruit must of necessity play a somewhat conspicuous part, as they attract large numbers of people who would not attend lectures. It therefore becomes all the more necessary that these shows should be made as real and effective as possible, and being called hardy fruit shows, the uninitiated spectator takes it for granted that the exhibits are all outdoor products. In this, however, they are frequently mistaken. That the Apple and the Pear are classed as hardy fruits in catalogues and gardening works we are well aware, but that the exhibits set on the tables at these shows are all *bona fide* outdoor grown fruit is by no means so certain, as I have repeatedly seen fruits that had been grown under glass exhibited with the others without anything to inform the public that they were other than grown in the open air. The consequence is that these kinds are noted as suitable for outdoor culture, even in the midland and northern counties, while we even on the south coast would not think of planting them except against sunny walls or under glass. The consequence has been that the buyers were disappointed with the whole business, and have come to the conclusion that it is useless trying to grow fruit in the open air in England.

If these shows are to be made as educational as they ought to be, the classes for open-air grown fruit and fruit grown under glass ought to be very clearly defined, and any infringement of the rules should disqualify the exhibitors. Under the loose way fruit is now shown more harm than good very often ensues, as the most useful kinds to grow, either for home consumption or for market, are not always the most likely to gain prizes on the exhibition table. Among Apples the kinds that find most favour with exhibitors when only a limited number of dishes are allowed are such strikingly beautiful kinds as Emperor Alexander, as it attracts the eye far more than kinds with a sober, russety skin. No one, however, who knew his business would

plant such a kind as this largely, for although very handsome it is not a profitable variety, and plenty of other instances of a similar kind might be cited. The most instructive exhibits are those staged by large growers of trees for sale, as their fruits, grown on quite young nursery trees in the open air, include all the sorts in most request. This is what we want to know about, as it is only by obtaining fruit from open-air trees than we can hope to compete successfully with the foreigner. As regards Pears, we have not yet fairly tried what can be done in the most favoured counties of England and Ireland, and when this has been done or by the aid of walls for a few kinds, I question if glass will be needed, for on the cordon system, as practised in good gardens in the southern counties, splendid samples are gathered year after year, with very few failures either in quantity or quality.

Gosport.

J. GROOM

COOKING APPLES FOR LIGHT SANDY SOILS.

Will any reader of THE GARDEN kindly give me the names of twelve cooking Apples that would bear well on our soil, which is light and sandy and rests on sandstone? Very few Apples bear well here.—J. L., *Oswestry*.

* * If well-prepared and suitable stocks are selected, Apples of fine colour and superb quality should be grown on the soil in question. The size may not be equal to that obtained from the heavier sandstone loams of the adjoining county of Hereford, but having the advantage of warmth, choice dessert Apples, including the famous Cox's Orange Pippin, will reward attention to the following mode of procedure: If the trees are intended for garden or modern orchard culture and the sandstone will allow, trench the whole of the ground 2 feet to 3 feet deep, working in plenty of marl, clay, scorings of ditches, and old mortar or brick rubbish. Tread each spit firmly as it is turned over, not only to save time in settling, but also to give thorough solidity and moisture-holding power to the layer nearest the rock. Form the stations, throw out holes large enough to receive the roots and plant on the level, using the best heavy loam for the purpose. Flood the soil home, mulch with good manure, stake well, and see that the roots do not suffer from drought the following summer.

Varieties being so numerous, and many of the best dessert sorts as suitable for cooking as for the table, a very choice selection may be made from the lists so frequently published by the editor of THE GARDEN last year. All of them do well on the English Paradise or Doucin stock, the most suitable for gardens and small holdings, and, producing the finest of fruit in a very short time, their bearing capacity can be tested within a couple of years. My selection from the two dozen varieties would be Lord Suffield, Alfriston, Blenheim Orange, Bramley's, Claygate Pearmain, Cox's Orange Pippin, Dutch Mignonne, Lane's Prince Albert, Mère de Ménage, Northern Greening, Stone's and Wellington.

"J. L." however, asks the names of twelve heavy cropping culinary Apples, and unenlightened as to whether he wants them for garden or orchard culture, I will endeavour to meet him by suggesting the following baker's dozen: Annie Elizabeth, Alfriston, Blenheim Orange, Cox's Pomona, Ecklinville Pippin, Keswick Codlin, Mère de Ménage, Northern Greening, Stone's or Loddington, Stirling Castle, Bramley's, Winter Hawthornden, and Wellington. These, with the exception of the Blenheim Orange, come quickly into bearing, but assuming that they are to be planted in a Grass orchard, then the whole of them must be worked as standards upon free stocks. In this case, in the hope that my remarks as to preparation may be of use to some readers similarly situated, if not to "J. L.," who does not ask for advice, I may say throw out holes 6 feet in diameter and not less than 3 feet in depth. Reject some of the poorest of the natural soil or rock to make room for a liberal admixture of heavier consolidating material, as recommended above; return the improved soil or compost, treading firmly as the work is pro-

ceeded with. Plant on the level, flood home the soil about the roots, stake well, and protect from sheep, cattle, and rabbits.—W. C.

APPLES AND PEARS AT THE LOWFIELD NURSERIES.

THE present season in regard to the Apple and Pear crops has been about the most puzzling that could possibly happen. In this district and for miles round, and also in parts of Berks, Surrey, Kent, and Sussex, Apples have been a complete failure, the trees whilst in full flower having been most virulently attacked by caterpillars, not a vestige of leaf or flower being left on the trees; several large orchards in this district really looked as if a fire had entirely destroyed every bit of live vegetation. Pear trees were not quite so badly attacked, but very little more than a third of a crop was saved by persistent washings with hose, garden engine, and syringe. At length heavy thunder showers, that proved a veritable godsend, fell and settled the pest thoroughly for the season at any rate. The trees, barring the absence of fruit, are and have for some time looked as if the plague had not happened; buds are well set and ripened, but it is with fear and trembling that we look forward to the blooming season next year, lest the plague breaks out afresh. Should this happen, the experience gained this season will greatly assist us to battle with the enemy successfully by hand-picking and the application of water with great force the moment it is seen. Mr. Joseph Cheal assured me when on a recent visit to the nurseries that but for the persistent washings which their many acres of fruit trees had received they could hardly have saved any of their fruit, whilst now they have it in quantity and as fine as it is possible for any fruit to be. Of course a large proportion of the trees are fruitless that would otherwise have carried good crops, but what struck me most was to see certain kinds of both Apples and Pears bearing extra heavy crops amongst the trees that had been badly hit with blight, a circumstance that would seem to indicate either that such kinds are more robust, and therefore not so readily injured by parasites, or else that the taste of the leaves and flowers of certain varieties is obnoxious to the insects. Be this as it may, I think that a record of the names of the varieties that in this year of scarcity are bearing well will be of interest, and may serve as a guide to those desirous of growing a few kinds only, and anxious to have those few good croppers in all seasons; because, obviously kinds that in such an unkindly season, and after one of the wettest and most sunless on record do well, must assuredly do the same in all seasons. The Apple of all others is a variety named "Forge"; all the trees are literally weighted down with fruit. It is a handsome fruit, medium-sized, bright red in colour, and of excellent quality either for cooking or for dessert. The tree makes a handsome standard, and, judging from examples of trees in these nurseries and in the cottage gardens all through the Crawley district, I should say that this is the best form in which to grow it. What the local repute of this Apple is every cottage garden bespeaks, and without exception the trees are all loaded, and I am informed that it is the same every season. It is high time, therefore, that there was a general awakening to its value that other districts may share in the treasure. All the following were bearing excellent crops: King of Pippins, Golden Spire, a grand kitchen Apple of medium size; Hornead's Pearmain, extra heavy crop and very large, an Apple that ought to be more generally grown, and it is as good for dessert as for cooking; Manks Codlin, Pott's Seedling, a first-rate kitchen Apple, hardy and always bears well; Prince Albert (Lane), very handsome and a sure bearer, while Stirling Castle is well known; the Queen, a large, flattish, evenly-shaped fruit and an enormous cropper; Frogmore Prolific, Hawthornden, and Ecklinville were all well furnished with fruit, and all of them are first quality cooking Apples. Bismarck, a newish variety from Australia, was wonderfully well fruited. The fruits are of immense size, and coloured as highly as those

of Mère de Ménage. Mr. Cheal gave it a good character as a kitchen Apple, and I should say, judging from the holes that wasps had made in some of the fruits, that it would not make a bad dessert Apple; Dutch Mignonne, Betty Geeson, Alfriston, Warner's King, Sturmer Pippin, and Yorkshire Beauty complete my list of this season's free-bearing Apples. Many varieties of Pears were bearing quite as freely as the Apples, especially the trees trained as cordons, of which form the Messrs. Cheal make a specialty. At the time of my visit (Sept. 26) the following varieties were bearing heavy crops, and with few exceptions the samples were all large, from the standpoint of their variety, and free from the black spot that is this year so general: Beurré Hardy, Beurré Diel, Beurré Clairgeau, Fondante d'Automne, Duchesse d'Angoulême, Doyenné Boussoch, Doyenné du Comice, Louise Bonne of Jersey, Pitmaston Duchess, Princess (Rivers'), Beurré d'Amanlis, Zephirin Gregoire, and some others that I did not note. The Messrs. Cheal are favoured in having soil of various descriptions, from heavy clay to the lightest black loam nearly allied to peat soil, and in which Conifers and American plants generally do well. The best Apples they get from the clay land, and the best Pears from loam that is but one remove from clay.

Heckfield, Hants.

W. WILDSMITH.

Flavour of Peaches.—It is somewhat remarkable how differently Peaches thrive in certain soils and localities in the same latitude, and how the flavour of the fruit is affected by the state of the weather at the ripening period. The difference in flavour (especially in northern districts) where glass is used for protection when the fruit draws to the last stage of swelling is very great, and some kinds which are held in low estimation for flavour (such as Sea Eagle) when ripened on open walls, are greatly changed for the better by being kept quite dry by means of glass. In structures where the air can be kept quite dry with a free circulation of air night and day, and aided by a little warmth from hot-water pipes, the flavour of Sea Eagle is changed almost beyond recognition from that of the same kind grown in the open air. A low temperature, dull, damp, and sunless weather when Peaches are ripening render them only fit for cooking. A case such as this came lately under my notice. In a garden where the soil is of the finest for fruit culture there are some of the finest Peach trees in Scotland, and the management is very near perfection. The kinds grown are few, and the finely developed trees bear abundantly most seasons. A few of the fruit of Royal George were sent me for consideration of their merits. The colour was of a deep rich crimson, the size large, and the appearance would have done credit to any exhibition table in the country, but the flavour was perhaps the worst I ever tasted, no doubt caused by the continuous rains and low temperature experienced while the fruit was ripening.—M. T., *N.B.*

Reduction of varieties of Apples.—No doubt many worthless varieties of this useful fruit occupy space which might accommodate other and much more deserving sorts. In such seasons, however, as the present has been, others as well as "A. D." (GARDEN, October 26, p. 388) have found that many of these reputedly inferior sorts have fruited better than some of those from which better results were naturally expected. It is well known that in ordinary seasons some varieties found to succeed in certain localities are invariably worthless in others. Notwithstanding this, however, there is no doubt that varieties of the Apple, as well as of some other fruits, are much more numerous than is desirable, and it is for the nurseryman to eliminate from his list sorts known to be inferior. At the same time this ought not in any degree to prevent efforts being made to secure or obtain new and improved varieties. It is to be hoped that the efforts of the National Apple Congress of 1883 will tend to this result, as well as to the elimination of inferior sorts, the rectification of nomenclature, and the ascertaining of the various names by which varieties are known in different parts of the country. The diversity in this respect

is very remarkable in many of even the best varieties. Thus, Blenheim Orange is ascertained to have no less than eight synonyms; Dumelow's Seedling has a like number; Hawthornden has seven; while Claygate Pearmain appears to have no less than thirteen. As regards cooking Apples, the committee of the congress very judiciously recommended the discarding of small varieties, or varieties under 3 inches in diameter. But as regards dessert or table Apples which are considered too small to be worthy of cultivation, some growers may demur to the discarding of such varieties as Golden Harvey, Court of Wick, Lamb Abbey Pearmain, &c. Large Apples are not always desirable for the dessert, and some of the varieties named are all that could be desired as regards quality and flavour, &c.—P. G.

CONFUSING NOMENCLATURE OF PEACHES.

WILL you give me the benefit of experience in determining the true names of the Peaches called, 1, Bellegarde; 2, Galande; 3, Crimson Galande? In Rivers' catalogue 1 and 2 are synonymous, and 2 is synonymous with Violette Hâtive. In another catalogue they are said to be different with a month's difference in ripening. These synonyms are very confusing. As so much is being written now in your journal on Peaches, the question may be the more easily answered.—JOHN PUGET (Colonel).

* * If the pertinent questions put forth by the editor of THE GARDEN, and so loyally answered by Peach growers in all parts of the country, do not settle this unsatisfactory confusion of tongues and names, a very important step will have been made when his lists of good, bad, and indifferent are published to the world. Another encouraging sign of progress is the fact that a spirit of inquiry is now taking possession of the minds of gentlemen who like to have that which they ask for, and to feel sure that they have not been deceived. To some a Peach is a Peach, but to the forcing gardener the substitution of a late for an early variety, or *vice versa*, is a most serious matter; so serious, indeed, that no horticulturist should rest until all doubt as to the identity of each member of a large family is removed. There are two steps which should be taken simultaneously, and if properly carried out the matter may be settled within the next two years. The cost would not be great, as the trade, whose interests and credit are at stake, would lend a helping hand with trees, and growers of the fruit have proved their willingness and ability when a conference is to be made a success. In the letter quoted herewith, the writer bears testimony to the importance of a subject, upon which, unaided, until the editor of THE GARDEN took it up, I have agitated for some years. He, the writer, I assume, is aware of the fact that nearly all the best Peaches, prior to the advent of the Sawbridgeworth seedlings, came to us from France; also that our leading pomologists have thrown them into groups, including the Noblesse, Mignottes, Purples, Georges, Galandes, and Chancellors. The varieties Bellegarde and Violette Hâtive, together with some thirty others, are Galandes, precisely as a score or more varieties of Plums are grouped as Gages. Some nurserymen, the late Mr. Rivers, for instance, one of our greatest authorities on Peaches, always, I believe, sent out the well-known Bellegarde, a large, flattened, dark purple Peach, under the French name of Galande. Another variety, the English Galande, the present representative of the firm quotes in the catalogue as the Violette Hâtive generally grown in English gardens. Messrs. Veitch and the trade generally offer Violette Hâtive as a distinct Peach, and the late firm of Osborn and Sons, most reliable in point of nomenclature, grew and sent out a Bellegarde Peach very large, much higher from stalk to nipple, bright, and well coloured. This, I believe, is the English Bellegarde, the dark and flattened variety is the French Bellegarde, and Violette Hâtive, a variety I have grown and known for forty years, is quite distinct from either. All these as grown here have small flowers and round glands. Violette Hâtive ripens first; Osborn's Bellegarde, or Eng-

lish Galande, second; and the dark purple Bellegarde, or French Galande, a little later. Crimson Galande is a seedling from one of the Mignottes, a large-flowered variety named Belle Beauce, one of the brightest crimson Peaches with which I am acquainted. It was raised by the late Mr. Thomas Rivers, and although not quite so fiery in colour as the parent, it is a little earlier, a profuse cropper, and a much better variety for early forcing. This, like the preceding, has small flowers and round glands, and being a good grower and hardy, is well adapted for south or west walls in the open air, where it ripens from the middle to the end of August.—W. C.

FRUITS UNDER GLASS.

PINES.

LATE or winter fruiterers having been considerably reduced in number, those left, as a matter of course, in an advanced stage may now be placed pretty close together in a smaller pit or compartment to finish off when the house they have occupied can be cleared out, cleansed and made ready for the first batch of Queens intended for starting in January. A period extending over six or eight weeks may appear a long time, but knowing the importance of a thorough raid upon filth and destroyers, including crickets and cockroaches, of limewashing and inside painting, and last, but not least, of giving newly harvested leaves time to settle down into a steady state of fermentation, I may say it is safer and better to commence early than late, especially where houses in private gardens can be turned to profitable account when once ready for their legitimate occupants. If sound Oak leaves of the past year are at command, these will cause less anxiety, but they should be well broken up in an open shed, watered if necessary, and frequently turned over to get rid of dangerous gases and restore healthy fermentation. New tan, again, should be taken in hand equally early, as it is much easier to revive than suppress sharp fermentation when the time arrives for plunging early in January. The Queens meantime resting in a mild declining bottom-heat of 75° to 70° must be kept very quiet in a temperature ranging from 56° to 60° by night and 60° to 65° through the day when the weather is dead and cold, and sharp firing is necessary. The pots being full of white healthy roots they may now be completely mounded up with the semi-dry plunging material in preference to leaving them partially exposed, as it will not be wise to give them any more water. There is, nevertheless, no rule without an exception; therefore should the roots be getting somewhat dry and in danger of shrivelling, a little tepid water may be poured round the outsides of the pots just to keep the old material moist before they are mounded up, as I have suggested. Should bright, clear, frosty weather set in, a chink of air must be given when the temperature approaches 70°, and sharp fire-heat being needed through the night, the floors, not the pipes, may be damped down when the house is closed. Although imperceptible, the atmosphere by this means may be greatly softened and made acceptable to the plants, which just now must not be weakened by abstraction, as so often happens where radiation is not prevented by night covering. Hot-water engineers have done much for the forcing gardener, as he can command any amount of fire-heat, but in too many instances the old-fashioned method of economising fuel and maintaining a moister and steadier atmosphere through the night is neglected. If anyone doubt the advantage of roof covering, be it never so thin and light, let him cover one compartment and leave another exposed; let him spend a few minutes in each on a sharp frosty moonlight night, and then, independently of a sense of security, his own body will decide which of the two atmospheres is taking least out of his plants.

Successions.—Under ordinary circumstances these well plunged in a mild bottom-heat will now be very quiet, making little progress, but at the same time not going back. Like those which are resting, they will not require any water, but bearing in mind that spring growth is expected, a check

from a too dry and cold atmosphere must be avoided. To secure these conditions, a temperature ranging from 58° to 60° by night and 60° to 68° by day should be the aim. Then, to counteract the drying influence of the hot-water pipes, the floors and possibly the surface of the bed may be moistened with tepid water, especially about noon on bright gleamy days. It is, of course, possible to keep late potted plants progressing through the gloomy months; but, independently of danger and damage from drip, of the production of elongated foliage and enervation of the system, the plants never go on so well in the spring, no matter how light the house or complete the heating and ventilating arrangements. November and December, then, should be the resting months, and if possible good covering should be employed during the hours of darkness.

Suckers potted in the autumn come under precisely similar treatment, but being much smaller and having fewer roots, they will winter best in a temperature ranging from 55° at night to 60° or 65° by day, when a little air should be given, if only for half an hour. As suckers in this low temperature rarely start into fruit through having been kept too dry, very little, if any water need be given to the roots, especially if well plunged in moist leaves or tan and highly heated bottom-heat pipes are not too near them. In the latter case it may be well to examine them occasionally, and water the bed in preference to the compost if found too dry.

CUCUMBERS.

The latest plants put out after October Melons will be rather more backward than we care to have them, but where several compartments are under treatment, they will come in extremely useful at a time when plants now in bearing are on the wane. Indeed, so useful are these late plants, that no one need be without fruit in February and March where they are kept steadily progressing through the dead months of the year. A temperature ranging from 70° by night to 76° or 80° on fine days is generally recommended, and fruit-bearing plants, no doubt, produce the sweetest Cucumbers under this treatment, but much depends upon the start, as these plants keep on growing in a minimum of 60° and a maximum of 70°, always provided the bottom-heat is brisk, say 75° to 80°, and fermenting material is the main factor in producing it. Such plants should not be pinched until after the commencement of the year; the foliage should be kept well away from the glass; they should not be syringed, but if possible the lights should be well covered through the night.

Plants now in full bearing will require very liberal feeding and good top-dressing little and often to keep them prolific and healthy. If the bottom-heat, be they in pots or upon ridges, is obtained from fermenting leaves and hot-water pipes combined, the drainage being ample and perfect, the roots will take more stimulating liquid than many people imagine, but it must be weak and varied, and if 10° warmer than the bed, so much the better. Drainage from the manure heaps and beds, guano and soot water ring good changes both for root-watering and damping purposes, but they must be weak and perfectly clear, otherwise the surface of the compost will soon become clogged and impervious to the entrance of fresh air. The material used for top-dressing can hardly be too rough; therefore, moderately light sandy turf with the finest particles beaten out of it, rough pieces of lime rubble or plaster and plenty of charcoal should always be kept in a dry, warm corner ready for use. In the application of these to the tender surface roots very thin layers best answer the purpose, and although the Cucumber will stand earthing up, the charcoal should be carefully piled round the stems. If canker or mildew attacks the plants, a little quicklime and sulphur may be well rubbed into the parts affected, and sulphur in any form will prevent the spread of mildew, but, prevention being better than cure, every part of the house, including the floor and glass, should be kept scrupulously clean; not a particle of decaying matter should be left lying on the bed; and last, but not least important, there should be a constant inlet of

fresh air, not in the ordinary acceptation of the term by opening the top ventilators, but by admitting it near the ground-line a little below the front row of hot-water pipes. Direct syringing having been discontinued, atmospheric moisture, and at the same time a brisk bottom-heat, may be secured by the frequent turning and renovation of the bed, particularly if it be composed of sound, gradually decaying Oak leaves. Manipulation, too, is an operation which requires great care, especially in dealing with the old leaves, the one great secret being the avoidance of the slightest check at a time when the vitality of the Cucumber in this country is very low. Old leaves upon plants which have been overfed at the outset often look rusty and seem to invite the introduction of the knife; but of two evils it is better to put up with these for a time than run the risk of bleeding or gumming until after the turn of the year. When the trellis is quite full, a leaf here and there may be removed, and space for the extension of the best laterals may be secured by pinching the points of weak growths the moment they can be seen. Some growers leave a few male blossoms, but no one thinks of securing seed at this time; therefore the whole of them, without detriment to the fruit, may be removed.

STRAWBERRIES IN POTS.

Unless the pots are unusually full of roots, growth having ceased, the plants will not derive further benefit from exposure to the heavy rains we have lately experienced. The main stock, as a matter of course, will be plunged up to the rims of the pots and face the elements with impunity, but plants intended for starting within the next few weeks will be the better for shelter from a deluge by being placed in a cold pit, from which the lights may be removed when heavy rain is not actually falling. Quite recently I suggested the cleansing of the pots, followed by immersion in soapsuds or sulphur water, two operations of the greatest importance to those who are obliged to start their plants in early Peach houses and vineries. There is no fixed time for this work, provided it is performed before the plants are taken into the forcing house, but economy being the order of the day, each plant should pass through the bath on its way from the summer station to the store-pit, from which batches can be drawn as they are wanted. Where a regular supply of good forced fruit is imperative, it is hardly fair to expect private growers to obtain that supply from structures in which the Strawberry is looked upon as an illegitimate and dangerous occupant; therefore, no matter how skilful or willing he may be, a proper Strawberry house should be provided for his convenience. A house of this kind is by no means expensive, and, considering how useful it may be made throughout the summer, I question if the cost would not be cleared in one or two seasons. Assuming, then, that the Strawberry house is ready, the shelves may at once be filled with suitable varieties in the smallest pots, and time being so essential to success, the temperature through the first stage need not exceed 40° to 45° by night and 50° through the day. A good body of fermenting leaves cast in beneath the shelves, whilst giving a continuous stream of moist, gentle warmth, will very often favour the maintenance of these figures for a long time, but free ventilation being imperative, the pipes, as a matter of course, must be warmed when absolutely necessary. Early morning at first is the best time to warm the pipes, also to water the plants, and, if necessary, to syringe the foliage, but much as the Strawberry enjoys root moisture, tepid water should be carefully and judiciously used through the early stages.

CHERRIES.

If the earliest trees have not been housed, no time should be lost in getting them cleansed and placed in the positions they are intended to occupy until the fruit is ripe. Like the preceding, they are most impatient of fire heat and close confinement, no matter how light or suitable the house may be for early forcing. The degree of heat indeed, and the free circulation of air which suit the Strawberry, also suit the Cherry, and so well is this fact understood, that not a few provide good shelves where they will not impede light for bringing the

two on together. When the Cherries are introduced they should be moderately rammed with the potting stick, watered with lime water to expel worms, and top-dressed with stiff, calcareous loam, enriched with bone-dust or rotten manure. Then if headroom admits, each tree may be placed on an inverted pot or pier of bricks for the twofold purpose of exposing it to light and a circulation of air. If the weather is moist and mild, all the ventilators may be left wide open by night and day, and when the buds show signs of swelling, a good substitute for drying fire-heat will be found in the introduction of a body of fermenting material. This may be thrown in loosely amongst the pots and pedestals where it can be turned, and renovated from the reserve the warm vapour will be found more genial than moisture from the syringe.

WORK AMONGST HARDY FRUITS.

PLANTING.—Anxious to impress the importance of autumn planting, I am constrained to say the ground on this the first day of November, slightly on the dry side, is still in splendid condition, and containing, as it does, a certain amount of summer warmth, trees of all kinds may be planted with the certainty that new rootlets will be formed before the latent heat is dissipated. This is a very important matter, as trees which take to the soil not only plump up their buds and make a good growth the following year, but having their roots well mulched they do not become hide-bound, neither do they require spring watering. Autumn planting in some cases is impracticable, but so soon as selections are decided upon the trees may be procured and located in the home nursery, where they may remain for a year or two, or, carrying a profusion of fibry roots, they may be lifted and transferred to their permanent quarters on any suitable day after the end of August. Good foresters, who cannot afford risk of failure, adopt this plan by filling up every spare foot of ground in the home nursery as fast as the quarters are cleared, and all fruit growers having space at command might follow in their footsteps, not only to their own advantage, but most decidedly to the great convenience and credit of the nurserymen. But why study the nurserymen when they are so well able to protect themselves? Well, upon the principle that our interests are mutual, it is easy to conceive that early orders ensure early lifting and quick despatch direct from the ground; whereas, tardy orders mean laying in by the heels, double and treble exposure of the roots, late or unseasonable planting, a large percentage of deaths, and much grumbling. All trees as soon as they are planted should be well staked to prevent wind-waving; indeed, so important is this operation, that it is a good and expeditious plan to set out the stations by driving the stakes first and planting to them. Then comes mulching, watering in the autumn, as a rule, being unnecessary. Mulches, as a matter of course, vary quite as much in quality as they do in purpose, but for protecting the roots of newly-planted trees all that is wanted is a material calculated to exclude frost in winter, drought in the spring, and to prevent the escape of latent warmth immediately after planting. Animal manure, as a rule, is used simply because it comes most handy, but the ground having been well prepared, stimulants are not wanted. Old lime rubble and charred refuse, which suit all fruit trees and improve heavy soils, exclude quite as much frost during the winter, and absorb moisture and warmth in the spring, may be used with excellent effect, or, lacking these, the next best article is fresh stable litter.

PRUNING.—Bush fruits, Pears, Plums, Cherries, Apples, and Apricots may now be pruned, washed, dressed, or painted according to taste. The best and cheapest insecticides for extensive use in the open garden are strong soapsuds from the home laundry or Gishurst compound, 6 ozs. to 8 ozs. of the latter to the gallon of water. If scale is troublesome, all the old stems and branches should be well scrubbed, then, to make a complete cure, they may be coated with either of these washes thickened to the consistency of paint by the addition of finely sifted loam and cow manure. Independently of

the healing properties of this paint, its tenacious nature fixes the scale, whence it never moves until the swelling bark throws all off together the following season. I do not recommend or believe in the painting of clean trees, but wherever these tiny pests are destroying the bark, a mixture of this kind will be found the best and most economical remedy. Old Apple trees badly affected by the American blight should be well scraped and cleared of Moss before the dressing is applied, and this insect being more troublesome than scale, a little paraffin, say half a pint to a gallon of paint, will make it more efficacious without doing harm to the dormant buds. W. C.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

— For the first time during the past seven years Peaches outdoors are a complete failure, and so are Nectarines. This is solely owing to the immaturity of the wood, which bore no flowers. Malta, a Peach of medium size (tree of rather delicate constitution) is of the very highest quality. Goshawk is a Peach of good size and of the very best quality, but it is unfortunately of a pale colour. Bellegarde is also a good Peach of the best quality. Both Dymond and Sea Eagle are Peaches of noble size, the former a midseason kind of good quality, and the latter the best of late kinds. Market Peaches, so long as they have to be gathered when only three parts ripe, must consequently be wanting in flavour. The fact of sending ripe Peaches to market is fatal to the sale of the fruit; besides, growers for market aim at appearance regardless of quality. The Peach or free stock undoubtedly gives the healthiest tree, and is the least subject to disease.—M. GLEESON, *Cumber Park, Wexford*.

— Peach trees are looking well and the crops have been good. Grosse Mignonne, Royal George, and Sea Eagle are good outdoor Peaches. Waterloo, of fairly good flavour, is an acquisition as far as earliness is concerned. In a friend's garden near here this variety was ripe on the open wall on July 15, colour and flavour also in this instance good. I have no experience as to the flavour of "market Peaches." In my opinion, the most prolific cause of disease and canker in the Peach is through the repeated cutting back of the young trained trees before leaving the nursery. I find it much the best plan to obtain maidens, and grow them on freely without cutting back. By this means I obtain fine trees that last longer in health than others treated on the cut-back system. Outdoor culture may be, and is, successful in this district where trees are given the necessary care and attention. C. HERRIN, *Dropmore, Tipton*.

— In my opinion the following are the best flavoured Peaches: Royal George, Noblesse, Barrington, Bellegarde, Dr. Hogg, Belle Beauce, A Bec, Violette Hative, Grosse Mignonne. The new kinds that have come under my notice are, without exception, inferior in point of flavour to those above mentioned. Inferior flavour in Peaches usually results from their being gathered before they are actually ripe, in order that they may reach the fruiterer in good condition, and frequently through having the packing material about them a considerable time, and also occasionally through being

packed in new deal boxes. The Mussel and Pear Plum are, in my opinion, by far the most satisfactory stocks to use. From general observation I should say that a Peach budded on the Peach stock is the most liable to disease. I have never seen trees remain healthy for any length of time, although they grew vigorously for a few years. No Peaches are grown on the walls here or in this district; in fact, I have not seen it attempted with any degree of success during the sixteen years I have lived in this county.—WILLIAM ELPHINSTONE, *Shipley Hall, Derby.*

—Peaches are grown here and in this neighbourhood with success; the low rainfall and splendid soil resting upon Kentish rag and gravel, which ensure good drainage, have no doubt a good deal to do with the success of Kentish fruit in general. Without these conditions it is uphill work to grow such fruits as Peaches and Nectarines. The stock that the trees are worked upon, too, has a good deal to do with success. Purchasers of trees should note whether the stock upon which the Peach is worked is swelling as fast as the Peach itself. There are some stocks used that do not swell and produce healthy trees. Peaches should be worked upon either the Brompton or Mussel, either of which makes a stock that is capable of carrying sufficient sap to support the trees. The sorts, too, must be considered if we are to succeed. Royal George is one of the best for flavour, but it is not suitable for outdoor cultivation. None of the American varieties I consider worth growing. The sorts that I would recommend for outdoor cultivation are Violette Hâtive, Dymond, Grosse Mignonne, Barrington, Stirling Castle, Noblesse, and Princess of Wales for a late crop. The reason of the inferior flavour found in Peaches is largely caused by their being gathered before they are ripe.—A. WATERMAN, *Preston Hall Gardens, Ayleford.*

—In regard to the best Peaches for flavour, the older varieties are undoubtedly far in advance of the more recent introductions. For growing under glass I prefer the following: A Bec, Royal George, Violette Hâtive, Bellegarde, and Noblesse, the last a rather tender Peach. Of Nectarines, Lord Napier, Violette Hâtive, Elruge, and Rivers' Orange do well. Were I limited to two sorts only, the first and last named would be my choice, and both deserve a place in every collection. In this neighbourhood Peaches and Nectarines out of doors are not much grown. Here, as a rule, the following varieties do the best: Stirling Castle, Dymond, Violette Hâtive, A Bec (an excellent Peach), and Walburton Admirable. This season I gathered fruit from a young tree of Dr. Hogg, which coming in, as it did, between the first four named and the Walburton, I believe will prove a valuable addition to our outdoor Peaches. Of Nectarines, Lord Napier, Violette Hâtive, and Stanwick Elruge do fairly well. I am not able to say what is the most suitable stock for Peaches, but I find those worked on a kind of Plum do the best. Canker is unknown amongst the Peaches here. As regards the deficiency of flavour in market Peaches, I am inclined to think it is in a great measure due to the Peaches being wrenched from the tree before reaching maturity, no matter how favourable the conditions under which they have been grown.—H. FISHER, *The Gardens, Elfrinton Hall, Bungay.*

—The best flavoured Peaches grown here under glass are Grosse Mignonne, Royal George, Noblesse, Stirling Castle, and Walburton Admirable; these sorts are grown in an unheated house and seldom fail to produce crops of excellent quality. Outside culture is fairly successful in this district; the sorts grown are Early Louise, Stirling Castle, Grosse Mignonne, Early Grosse Mignonne, Royal George, and Hale's Early; the four last-named are the best for flavour, and likewise the most constant bearers. The Plum stock appears to be the best for this part, and produces the healthiest trees; but in some cases the scion greatly overgrows the stock at the point of union. To secure the best flavour, well-drained borders are necessary, and the trees should be planted upon stations or raised borders well above the surrounding ground, as unless the roots are kept from pene-

trating deeply into the border, neither flavour nor well-ripened wood can be expected in this moist climate.—JAMES DAY, *Galloway House Gardens, Wigtownshire, N.B.*

—The best flavoured Peaches in my opinion are Dymond, Grosse Mignonne, Alexander, Royal George, Noblesse, Violette Hâtive, Walburton Admirable, Barrington, Hale's Early, Goshawk, and Alexandra Noblesse. I believe the reason market Peaches are so inferior is through being gathered before they are ripe. The hardy and almost wild Plum is the best stock for the Peach. The Peach stock, I believe, tends to disease. It is the most natural, and the Peach takes well on it and grows vigorously for a few years, and then it begins to decay. Peaches outdoors do fairly well here; they are carrying a lighter crop this year than they have done for several years previous, owing to the wood not having been thoroughly ripened last season. Late varieties ought not to be planted out of doors, as the fruit does not come to perfection unless in exceptionally fine seasons such as we had in 1887.—W. HARMAN, *Newham Paddox, Luttermouth.*

—With respect to the several points in Peach culture on which you invite notes, I may say our remarks will refer principally to the culture under glass, as our position is not quite a suitable one for outdoor culture. The kinds which find most favour at table here are Hale's Early, Stirling Castle, Royal George, Noblesse, Barrington, Bellegarde, Grosse Mignonne, with Late Admirable and Walburton Admirable for late kinds. Out of this list we should place Hale's Early, Stirling Castle, Bellegarde, Barrington, and Walburton Admirable in the front rank. Of the newer kinds which we have grown, Goshawk, Princess of Wales, and Prince of Wales are when well grown and ripened of excellent flavour; while Lord Palmerston, Lady Palmerston and one or two others of American origin have nothing but size to recommend them. They are coarse and woolly in flesh and require very good cultivation and management as regards watering at the ripening off period to bring them to anything approaching in flavour those above mentioned. Regarding the inferior flavour so often found in market Peaches, it may arise from several separate causes, or a combination of them. Overcropping or trying to take too great a number of fruit from a given surface of branch and leaf, and which mostly ends in a great number of undersized flavourless fruits, is a common cause. Carrying on the watering of the borders a stage too far after the ripening process has commenced is another cause of insipid flavour in Peaches. In some instances I have known inferior flavour to be the result of certain hide-bound Plum stocks, in which the ratio of growth between scion and stock has been so unequal as to form a large swelling at the junction. The tree ultimately dies, throttled out of existence, as it were. During twenty years we have lost several trees from this cause, mostly collapsing when in full fruit at the stoning period. The greatest cause, however, of the inferior flavour so often found in market Peaches, in my opinion (and here I can speak from twenty years' experience in the marketing of surplus fruits), arises from the necessity of forcing the fruits from the trees before they are naturally ready to gather. The exigencies of the market demand that the Peaches shall arrive not only fresh and sound without a blemish on them, but if necessary be in a condition to keep on hand for five or six days. To do this the Peaches must be pulled from the trees six to eight days before they are ripe. I have tested over and over again such early gathered Peaches with those that have been allowed to hang on the trees till they were perfectly ripe, say within a day or two of the time that they would naturally fall if not gathered, and the superiority of the latter over the former in flavour has been most marked. The stocks that give the healthiest and longest lived trees with us are the Julien, the Almond, and the Mussel Plum if the latter is worked close to the ground. The stocks that tend to disease and canker and to early death are the white and other light-barked Plums, the wild Cherry, and even the Mussel Plum when worked

standard high. At any rate we have had more trees suddenly fail and die on these stocks than on the others. The outdoor culture of the Peach in this district is carried on successfully on the warm and well-drained soils, but on the higher lands mostly of diluvial and bolder clay formation, the culture is not so successful.—J. KIPLING, *Knebworth.*

FLOWER GARDEN.

THE TULIP.

THERE are evident signs around us that the old-fashioned, gay-coloured, late-flowering Tulips will soon be popular again as beautiful hardy garden flowers. We have cultivated a considerable collection of the finest varieties for many years, and are, as I write, preparing to plant out our collection. The weather has been all against us, but it will not do to delay any longer, as the roots are beginning to push out from the base of the bulbs. Thus they do, as a rule, by the third week in October, and the planting must not be delayed after the middle of that month if the ground can be got ready. We have to trench up the ground and plant out the bulbs immediately. We get a good show of bloom always, and find the bulbs make very vigorous growth if a layer of decayed farmyard manure be placed about 6 inches or 8 inches under ground. The ground where we plant them being so wet, and moreover of a very clayey character, we are obliged to break up some dry, decayed, turfy loam, and spread about 3 inches of it over the surface of the bed, and the bulbs are planted at once. We make a hole for each bulb about 4 inches deep, place some clean river sand in the bottom of the hole, and press the bulb into it. The fibrous loam which was placed on the surface is an excellent covering for the Tulip bulbs. The largest bulbs are planted about 8 inches apart, and the smaller ones from 3 inches to 6 inches, according to their size. After planting it is certainly best to place a thin layer of decayed stable manure over the surface. This covering serves several useful purposes. It prevents the surface of the bed from being battered down by heavy rains, and if the soil is of a clayey nature, it also maintains a more equable temperature in the soil, and protects the young Tulip plants from frosts as they push through the ground. The florists who make a practice of exhibiting their flowers for prizes take great pains to protect their plants in winter as well as the flowers in May. As soon as the beds are planted, iron rods are bent over the beds, strings are run along the bed to connect the hoops, and to help to sustain the mats that are thrown over the beds in severe weather. These mats are used until the Tulips have considerably advanced in growth, when a tent large enough for a country exhibition, as I have seen it in Mr. Barlow's garden at Stakehill House, in Lancashire, is erected over the beds. Some growers, such as the Rev. F. D. Horner, have erected glasshouses over their beds, so much is the Tulip esteemed by them, and the superiority of a glasshouse over a canvas tent is seen in the greater purity and better texture of the flowers when placed on the exhibition table. The house is span-roofed and formed of large panes of glass, and the glass reaches down almost as low as the ground-line. Most of the Tulip growers are raisers of seedlings, but only those who possess the very best flowers can hope to produce varieties worthy of the time and care necessary to produce good flowering bulbs. I saw a big basket filled with bulbs of seedling Tulips in Mr. Horner's possession this year. He has grown a large number of them up to the flowering size, and the results

so far have been such as to justify the expectation that new Tulips are likely to emanate from the Lowfields garden. Mr. Horner would not sow seeds of either unless they were taken from well-selected parents carefully hybridised. The seeds may be sown in pans any time between February and April. An experienced seedling raiser stated that when he began to raise seedling Tulips, he sowed his seeds in October, and failed to produce any plants; next he sowed them in January, with little better success. He then tried the first week in February, and obtained a fine lot of plants. But what is worth noticing, he sowed a batch of seeds in April, and obtained still better plants. The largest bulbs of this sowing each weighed 4 grains, while the largest bulbs from the February sown seeds only weighed 2 grains each. The pots or pans containing the seeds should be placed in cold frames; here the seeds will vegetate freely, and will grow on until they ripen in July. J. DOUGLAS.

AUTUMN BLOOMING OF AURICULAS.

THE "primulaceous trick," as the Rev. F. D. Horner once forcibly expressed it, on the part of the Auricula to flower in the autumn is showing itself in some collections this season in a very marked manner. One successful grower, writing to me a few days ago, said his Auriculas were flowering very freely. What is the cause of this autumn blooming? Some are found asserting that it is caused by the plants being potted in May instead of in July and August, as practised by a past generation of cultivators. But so good an authority as the Rev. F. D. Horner, who probably repots as early as anyone, states that he does not believe this to be a cause of autumn flowering. He states "autumn blooming is a family feature among the Primulas (of which the Auricula is one), and in a great measure beyond our control. Some varieties are more constitutionally given to it than others, and if the untimely display be unusually widespread, it is due either to exciting causes in the autumn weather, or to some check the plants have suffered in the summer inducing them to throw up flower-stems prematurely, as if in an attempted effort to save their species by attempting seed." I can scarcely think the season of potting has much to do with the production of autumn trusses, notwithstanding some think differently. I remember being at the Royal Nursery, Slough, a few years ago where late potting of Auriculas is generally carried out, and though for certain reasons it had been done later than usual that year, a great number of the plants had thrown up autumn trusses of bloom. Perhaps the change from the summer to the winter quarters may have something to do with it; but then the trusses must have been formed before the plants were removed from a northern to a southern aspect.

In the case of plants that do bloom in October and September, it is best to pick off the buds and not allow them to expand. The stem of the truss should not be cut away, but merely the unexpanded buds removed, allowing the stem to die away gradually. Cases have occurred where rot has been communicated to the plants through snapping off the autumn flower-stem near the plant. I think it will be generally found that autumn trusses of bloom are thrown up not from the central fibrous heart of the plant, but from the leaf axils, leaving the centre to mature its flower-stem for the spring blooming. But sometimes a flower-stem is thrown up from the heart in the autumn, and this may effect the spring blooming.

Some hold that the use of exciting materials in the compost has the effect of causing autumn bloom. I can scarcely think this is a tenable position. That by means of a rich compost and the application of heat during the winter plants are grown strongly and produce large pips on bold trusses, there can be no doubt, but the nauseous compounds of soils, &c., recommended by Maddock and others are not now employed. Some good yellow fibry loam, well decomposed manure, a little

charcoal and silver sand and some leaf mould, and probably some crushed bones are employed, but nothing in the way of quack ingredients. It is generally held that the standard of bloom in the south as compared with the north is somewhat coarse; at any rate, this is the opinion expressed by some of the northern growers who come south to see the Auriculas shown in London.

I am sometimes amused at the contempt expressed by northern growers for the practice followed in the south of placing supports to the flowers of Auriculas when they are exhibited. The opinion held in the north is, that unless a plant is strong enough to produce a stiff rigid stem that will support a truss of blooms in an upright position without a support, it is not worthy of a place on the exhibition table. At the exhibition of what is called the northern section of the National Auricula Society, held at Manchester, no supports are allowed to the plants whether of Auriculas or Polyanthus, but the stands lose in effectiveness. In London supports are allowed, and the plants have a much more attractive appearance in consequence.

Auriculas this season appear to fall away very slowly to their winter's rest. The mild autumn with its unusual freedom from frost has much to do with this. Some of the days are sunny and bright, the plants dry quickly, water has to be administered; consequently the plants may be said to be kept in an unusual state of wakefulness. The cultivator must watch the weather, withholding water as autumn more nearly approaches winter and fog and frost appear on the scene. Then the plants use up less moisture at the roots and find more in the atmosphere. Let the plants have plenty of air even if the fog is dense, and provided there are no severe frosts. R. D.

Bamboos.—All the Bamboos named by F. Cowslade (GARDEN, Nov. 2, p. 421) are quite hardy here, except Mazelli, which I do not know. *B. aurea* I think I like the best. The stems are shining yellow and fluted. There are fine clumps of it here with canes each 10 feet to 12 feet high. *B. Fortunei aureo-variegata* is the prettiest of the variegated kinds. The fault of *B. nigræ* is, that as soon as it gets large, like *Arundinaria falcata*, it often seeds and dies; it would be a desirable sort but for this; the black canes are very distinct. *B. viridi-glaucens* is another strong-growing kind. *B. gracilis* has made canes 14 feet high this year. *Phyllostachys bambusoides* is another good sort, similar to *B. Metake*, but not so tall—quite hardy here, though I have heard it is not so in some places. The fine vigorous growth of the Bamboos can never be obtained in pots, however large. In moderately moist soil and a sheltered situation Bamboos make surprising growth when once established, which takes two or three years to bring about.—J. M., Charmouth, Dorset.

The large-flowered Wood Lily (*Trillium grandiflorum*).—I venture to doubt whether your correspondent, "S. D.," has adopted the best plan of cultivating this beautiful flower by planting it in a bog. I rather agree with a former writer, "D. K.," that to grow it in perfection it requires to be carefully guarded against stagnant moisture at the roots. The all-important question as to plants difficult to grow in England is, Under what conditions are they found in a state of Nature? I do not think *Trillium grandiflorum* grows naturally in swamps or bogs, though it does in low woods bordering them. I found it some years ago in a forest near Ottawa, luxuriating on the side of a hill in the rich, loose leaf-soil, the accumulation of centuries, which is so characteristic of American forests. The soil was damp, as such soil would naturally be, but not in the least wet. To see it in perfection, *Trillium grandiflorum* should be planted on sloping ground where one can look up at it, because its flowers droop, and only half its beauty is seen when it is viewed from above. *Trillium erectum*, the purple form, grows, I believe, in wetter soil, though I have never seen it growing wild. We must not forget, however, in dealing with Canadian bog plants, that there is not a drop of moisture in a Canadian swamp during their severe winter, with

its 60° of frost, and that in that country there is nothing analogous to the English spring which is so trying to plant life. When I was in Quebec a shopkeeper was trying to sell me a fur overcoat to drive about with in winter. I said to him, "I am afraid it would get spoiled by the wet." "Wet," he replied, "Who ever heard of wet in winter?"—F. W. HARMER, *Norwich*.

QUIET CONTRASTS AND HARMONIES.

WE have all too few of these in our gardens and landscapes. Striking effects are too often striven after on the lines of violent contrasts and what may be termed loud, rather than quiet harmonies; hence it is the more refreshing to find "W. W." recommending the admixture of Ageratums and Heliotropes on page 336. At first sight how tame, almost insipid, the blend seems on paper. But, in fact, it is as chaste as it is pleasing. It will also be welcomed by the constantly increasing number of flower gardeners who are expected to furnish flower beds and borders with fragrance as well as beauty or brilliance. Though Heliotropes alone do fairly well in many places, yet in many more they seldom grow or bloom with sufficient density to form good masses of colour or verdure. They are too weak and thin to stand alone. The majority of their colours, not even excepting the white, are also somewhat hazy and indistinct.

Ageratums, again, are formal, monotonous, and, as not a few ladies of taste have declared, insipid, one assuring me that the colour matched the odour, and, consequently, she would have no more Ageratums in beds nor borders. Their spread of lavender made the garden too cold, while no one would admit Ageratums into sitting or drawing-rooms. All this but confirms what your correspondent has already affirmed, that neither of these plants is very effective nor ornamental alone. I found this out years ago in regard to Heliotropes. These had to be grown in quantities in beds and borders for cutting and their most pleasing fragrance. But when other flowers had grown into a blaze of colour, the Heliotropes lacked brilliancy of colouring, and even a profusion of branchlets. Carpetings of Tagetes, dwarf Marigolds, China Asters, Zinnias, *Salvia splendens* and patens, and other things were tried with more or less success—perhaps the most effective being the old-fashioned semi-hardy *Verbena venosa*. The latter, however, barely afforded sufficient contrast of habit and colour, while most of the others were too distinct and different to form a quiet harmony or a pleasing blend.

A somewhat lighter and taller strain of Ageratum than Cannell's Dwarf formed our most useful and telling combination. It furnished the ground so rapidly and kept it so fully furnished, as to enable us to cut Heliotropes in quantity for vases and baskets without being greatly missed, and the unopened trusses standing well up over the Ageratums had a unique and cheering effect. In fact, it is not wise to have too much Heliotrope, though there is but scant chance of this in households where Cherry Pie is appreciated in every room of the house. But a part of this plant in bed or mass is more effective than a whole, the blush-purple or dark hues of the Heliotropes being thrown out, and with abnormal distinctness and beauty from the blue-lavender bed of the Ageratums. The unopened shootlets, too, of the Heliotrope seem like veritable ripples of colour and form on the even sea of the Ageratums.

If one more touch or tone of colour is needed to enrich the quiet harmony of such pleasing combinations, it may readily be found in an edging of *Lobelia Paxtoni*, one of the most valuable of all the now blue strains of *Lobelia speciosa*.

D. T. F.

Anemones.—Already early spring-raised plants of these are beginning to show bloom, and if we only get tolerably fine weather they will be more or less gay through the whole of the winter; for though frost may keep them back and check them for a time, the flowers only wait for the sun to shine when they at once open, and I have seen them thus,

with their heads just through the snow, looking bright and beautiful on the white carpet. To have them so early, it is necessary to grow them on a warm sloping border in deep, rich, sharp soil, and those who have not planted should do so at once, as the tubers soon lose weight and strength after this. I like to treat Anemones as biennials and raise a fresh stock every year. Those referred to above were sown in spring in pans, which were placed in gentle heat and the plants pricked off and nursed on till large enough to plant out in the open. One of the most useful is *A. fulgens*, but all the Poppy or *A. coronaria* kinds are very desirable and look exceedingly well mixed, and are most valuable for cutting, for though they close when on the plants, they keep open in water in warm rooms and are very effective.—S. D.

AN AUTUMN-FLOWERING IRIS.

THIS lovely bulbous Flag is one of the latest of the Irises in bloom, and more welcome in the gloom of November and December than in the leafy month of June when the great Spanish and English Irises fill the garden



Bulb of *Iris alata*.

with colour and beauty. The flowers sent by Mr. Ewbank from his Ryde garden of a form of this Iris recall the tenderly coloured type, which the accompanying illustration well portrays. This Xiphion was introduced from Algiers as early as 1801, and is given in Miller as *Xiphion planifolium*. Our illustration shows well the broad, pointed, and sheathing leaves, each quite 2 inches in diameter and soft green in colour. The charming flowers rise from the centre, as is well shown in the cut, their frail beauty rather suggesting spring than autumn; their colour is a tender blue-lilac, picked out in bright yellow at the throat, and on either side of the crest is a mottling of white. Its season of blooming commences in October, and flowers are produced as late as Christmas. There is no mystery in its culture; it is quite easy to grow, loving a sunny border somewhat dry and sheltered. Nooks on the rockery, where heavy rains cannot spoil the flowers, are the spots for this delicate beauty; also plant it

amongst Grass or some carpeting plant to shield the blooms. The Iris has no distinct season; one or other members of the vast family are in bloom almost every month of the year, commencing with the delicate *I. Histrio* and closing with *I. alata*.

FLOWER GARDEN NOTES.

SHRUBS VASES AND STATUARY IN THE FLOWER GARDEN.—Stone, stucco, terra-cotta, or whatever the material may be of which vases, statuary, &c., are composed, and which in some gardens, to judge by their prominence, are considered to be more essential than flowers or live plants of any kind, are a blot in the garden. That ornamental vases in which to plant flowers may sometimes be desirable I will not deny, but even these are in many gardens far too numerous, as suitable shrubs planted where the vases stand would be much



Iris alata.

more effective and good both in winter and summer. It has been my privilege to oust from the flower garden a number of vases and substitute for them suitable kinds of shrubs. My argument is that a garden is intended for live plants, and anything that tends to either mar the appearance of flowers or detract from their effect should be removed. The terrace garden here affords an excellent example of the improvements that can be effected where the vase and statuary mania still exists. A few years since there were vases on the walls at a distance of only 6 yards apart. These have all been removed except four on the step piers at ends of the terrace, and now from the windows of the mansion the grand landscape scenery beyond the terrace flower garden can be clearly viewed, and the terrace wall looks more sober by the removal of these obstructions. With regard to vases on the turf, they sometimes are admissible as central objects amongst flower beds, say at the ends and middle of the design, but my opinion is that suit-

able shrubs are much better. I said suitable shrubs because, obviously, any that grow rapidly and such as will not bear curtailment by the knife or clipping are out of place, as most terrace gardens are of formal design. The shrubs that are to outline or form centres in the design should also manifest this character, and those that assume a spiral or pyramidal shape naturally are the most appropriate. One of the best is *Retinospora squarrosa*. By a very little manipulation, such as clipping out the points of the strongest-growing shoots about twice during the growing season, this plant grows perfectly symmetrical, and the colour being glaucous grey, it harmonises well with any coloured flowers. There are here eight plants that eight years since were planted on the turf where vases for flowers had stood previously, and though this is all the change that has been made, they have so altered the appearance of the series of beds near which they are planted, that several have remarked that they thought the

design of the beds changed, and now that the flower-beds are planted—mainly with shrubs—for winter effect, these *Retinosporas* display themselves to even greater advantage than they do in the summer. Another and, where labour is limited, an important advantage in regard to this substitution of permanent shrubs for vases is that no artificial watering is required. Other good shrubs that have here taken the place of vases are *Retinospora plumosa aurea*, *R. pisifera*, golden variegated Yew, and variegated Holly. These can all be made to assume a pyramidal or rotund form by very little labour, or cutting out the points of long shoots; shearing or close clipping of such specimen shrubs is to be avoided. I have hitherto dwelt on the desirability of reducing the number of vases and replacing them with specimen shrubs; but I go further than this, and advocate the planting of the same description of shrubs for a permanency in the centres of large flower-beds. By this plan the garden presents at all times a furnished appearance, and is the means of saving a considerable amount of hard labour both of planting and preparing bedding plants. On the other hand, it is possible to overdo the thing. If the garden be small, obviously shrubs instead of vases, and also as centres to the flower-beds, cannot be used without risk of making the entire garden monotonous. It is difficult to lay down any exact rule as to how far the planting of shrubs in this fashion may extend. For large

gardens and beds of large size the practice is best suited. We have flower borders planted on this principle with *Sedum glaucum*, *Herniaria glabra*, and *Antennaria tomentosa* as undergrowth for the shrubs. These borders have just been cleared of the summer bedding plants and the ground made tidy, and though about half of the soil is bare, the borders seem sufficiently well filled for the winter season and the colours good. A bronze, dull red, or brown colour would improve matters, but how to obtain it is the question. I once tried the bronzy-leaved Beet and it stood fairly well, but there was something so incongruous in the mixture of Beet and shrubs that I never mustered courage to repeat it.

BEGONIA PRINCESS BEATRICE.—This fibrous-rooted Begonia is not only one of the best bedding plants in the whole list, but is a gem of a plant for indoor decoration in winter. Numbers of plants that were lifted from the flower beds and put into heat barely a month since are now nice bushy plants

full of bloom, and are most useful for small vases and for the forming of an outer floral line in baskets of larger plants in rooms, or as edgings to conservatory plants.

YELLOW AND WHITE MARGUERITES.—A number of these—the smallest plants—that were lifted from the flower beds are also in good flower, and promise to be very useful as vase plants for the winter. They were prepared for pot culture by cutting round the balls with an edging iron a month before they were lifted, and this cutting allowed of their being potted into smaller-sized pots than would otherwise have been possible without causing a serious check to the plants.

GREVILLEA ROBUSTA.—This is another plant that after doing duty in the flower beds can be made to do as good service in the conservatory during winter. Large plants only lift well when there has been previous preparation by cutting round the balls a month or so before. Small plants lift well without being cut, but both require warmth for a few weeks to admit of new roots being made in the fresh soil. After that cooler treatment is desirable.

W. W.

OUTDOOR CARNATIONS FLOWERING AT CHRISTMAS.

I SHOULD very much doubt the Carnations referred to by "A. H." (GARDEN, Nov. 9, p. 427) flowering during the winter if severe weather was to come. No doubt if the winter be open and mild a stray bud may partly expand, but it is very doubtful, in fact I might say impossible, to obtain a sufficient quantity of flowers to be of value. I cannot see the advantage of putting in cuttings so late as November, as in my experience the earlier the layers are rooted and established in their permanent quarters the better will the flowering season be. More than this, it is questionable if in such a soil as that referred to by "A. H." layers, though well rooted and planted out in good time, would survive if a hard winter was to follow. The better plan, I think, in such a case would be to layer the plants at the usual time, pot them, and put them into a cold frame during the winter. These layers by the spring will have filled the pots with fine fibrous roots, and if planted out into well-prepared soil would start away into growth at once, and in the end prove far superior to those left in the open ground during the winter. In layering, every plant can be guaranteed to root, while with cuttings, even though put in at the proper time, this is not the case. With those referred to by "A. H." the difficulty is increased, seeing the soil in which they are inserted. In the case of soft-wooded plants like the Carnation, it is likely that cuttings put into a heavy wet soil in November will remain fresh and afterwards root in April as "A. H." says? I should certainly say not. During the last few years the winters have been comparatively mild, and Carnations have stood fairly well, but he who wishes to have flowers will do well to have two strings to his bow and not risk all his plants in the open ground, but have duplicates in pots in cold frames. Mr. Hadlow's plants may have "100 blooms and buds," but we are not out of the wood, and if severe weather should come, how many of these blooms and buds will be of any value for decoration? I should say very few, and consider the game is not worth the candle, seeing how easily Carnations can be had under glass at the present time, as witness the fine groups lately exhibited at Chiswick and the Aquarium.

W. P.

SHORT NOTES.—FLOWER.

THE plant described by "W. W." (GARDEN, October 12, p. 336) as a *Harpalum* is evidently one I see named in the Edinburgh Botanic Gardens as *Actinomeris helianthoides*. The flower is almost identical with that of *Harpalum rigidum*, but the plant is much taller and of an erect habit, the leaves larger, broader at the base and serrated. It is in bloom now (November 1), and only begins flowering in October.—M. W.

Dwarf white Antirrhinum.—The merits of this valuable Antirrhinum (figured in THE GARDEN, Sept. 29, 1888) cannot be too widely known. It has many claims on the lover of garden flowers in the open

border. It can be advantageously used in the flower garden. For this purpose it is used largely at Didlington Hall, Brandon, Norfolk. It is as a plant for massing in mixed borders or in open spaces on the margin of shrubberies that I wish to draw attention to it. I have used it in this way this summer with good effect.—DORSET.

SOCIETIES AND EXHIBITIONS.

CRYSTAL PALACE.

NOV. 8 AND 9.

THE Chrysanthemum Show at the Crystal Palace was an interesting revelation of the uncertainty of prize-winning. There was a new list of successful names, at least in the Chrysanthemum world, and old exhibitors that previously held matters almost in their own hands took inferior places and occasionally completely failed. This revolution gave the exhibition an unusual interest, as there was a large competition and the flowers throughout were marked by the highest finish and character. The greatest struggle was in the class for 24 incurved and 24 Japanese varieties, but Mr. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Marlborough, Wilts, was a good first. His finest blooms were of incurved varieties. They were perfect in finish and remarkably fresh, especially the Queen family and the clear yellow Miss M. A. Haggas. The Japanese varieties were scarcely inferior, the blooms of Ralph Brocklebank, Mme. Laing, Bertha Flight, Mme. Baco, and Carew Underwood being in true character. The second prize went to Mr. Peter Blair, gardener to the Duke of Sutherland, whose Japanese blooms were finer than the incurved. Such varieties as *Fimbriata*, made up of a mass of fimbriated florets, and Stanstead White were well represented. To judge of the competition there were no fewer than fourteen entries. Such an exhibition as this shows how quickly a good thing becomes popular. In the class for eighteen Japanese varieties, the first prize collection, shown by Mr. J. Blackbourne, Elmstead Grange Gardens, Chislehurst, contained admirable blooms of Sunflower, the new yellow-coloured variety and a grand acquisition, and Stanstead White. The second prize went to Mr. C. Cox, gardener to Mr. J. Trotter, Brickendon Grange, Hertford. There were no less than twenty competitors in the class for twelve varieties, and the first prize went to Mr. W. Slogrove, gardener to Mrs. Crawford, Reigate; the varieties exhibited were Val d'Andorre, Mlle. Lacroix, Mrs. J. Laing, Mme. C. Audignier, H. Cannell, Edwin Molyneux, Jeanne Délaux, and Avalanche. The second was Mr. W. Collins, gardener to Mr. J. W. Carlile, Bonsbourne Park Gardens, Hants, who had a good flower of Sarah Owen, which is of a pale red colour, the reverse of the florets rich yellow. The class for six blooms of one variety is always interesting, and Mr. Blair was first with six beautiful flowers of the pure white Avalanche, that is finer this season than ever, and promises to maintain its character far better than the crimson-coloured Edwin Molyneux. Mr. H. Harker, Oakwood Lodge Gardens, Epsom, who was second, showed Japonaise. In this large competition there were beautiful blooms of the clear soft yellow Ralph Brocklebank, the sport from Meg Merrilies. Mr. Collins exhibited twelve excellent reflexed flowers in the class for these, the rich crimson Cullingfordi appearing in full perfection. Mr. A. G. Hookings, Moulsey, was second; the blooms were smaller than in the first prize lot, but well finished, and included the old Emperor of China. Mr. Sullivan, gardener to Mr. D. B. Chapman, Roehampton, had the best twelve Japanese Anemone varieties, and this grower always presents this section in its highest phase of beauty. The same exhibitor had the finest large Anemone flowers, showing the new Sabine and Nelson; the first has flowers of a pale yellow in the guard florets, but the centre is of a richer shade of the same. Nelson is rich red, the outer florets of a paler shade. The delightful free-growing pompons, such as Marabout, Roseum perfectum, Prince Victor, rich crimson, and the pink-coloured, beautifully shaped Mlle. Elise Dordan were well exhibited by Mr. G. Duncan, Warnham Court Gardens, Horsham.

This exhibitor occupied the same place in the pompon Anemone class, which includes such elegant flowers as Rose Marguerite, Mme. Montels, a delicately coloured variety, pale yellow in the centre, the outer florets bluish colour; the deep yellow Antonius, and Mme. Sentier, which has the guard florets white, the centre delicately shaded with primrose. It is a pity there were not more exhibitors in the class for single flowers, as these deserve culture for their exceeding elegance and refinement. The only contributor was Mr. E. Chadwick, Hanger Hill House Gardens, Ealing, who had fine blooms of the leading kinds, including Lady Churchill, which has fluted florets of a pale orange-red shade.

The incurved varieties were splendidly shown, especially in the class for eighteen varieties, in which Mr. J. Horsefield, gardener to Lord Heytesbury, Wilts, was first, exhibiting Empress of India, Novelty, Mr. Brunlees, Jeanne d'Arc, Nil Desperandum, Jardin des Plantes, Lord Wolseley, Venus, W. Shipman, Golden Empress of India, Golden Queen of England, Alfred Salter, Lady Hardinge, Lord Alcester, and the new Charles Gibson and M. A. Haggas. Mr. P. Blair was second with blooms very little inferior in finish and freshness. Mr. Collins had the finest twelve incurved and Mr. Blair the best six, exhibiting perfect flowers of Queen of England.

There were considerably more "trained" specimens this season than for several years past, and some splendid groups both as regards arrangement and colour. There was only one competitor, however, in the class for a group of incurved, viz., Messrs. J. Laing and Sons, Forest Hill, and the same firm also came first for a group of Japanese kinds, both arrangements being faced with cut-back plants. There were also classes for Chinese Primulas in various colours.

Special prizes were offered for Potatoes by Messrs. Sutton and Sons, of Reading; Mr. C. Fidler, of the same place; and Messrs. J. Carter and Co., of High Holborn. It is noteworthy that Mr. J. Hughes, of Byfield, took the first prize in every instance. The tubers were smooth, regular and handsome, with no trace of coarseness. Such results are only attained by skilful culture and natural advantages.

There were several miscellaneous collections. Messrs. Sutton and Sons had a large collection of Potatoes of named varieties and seedlings, the result of crossing *Solanum Maglia* and *S. tuberosum* to infuse a greater hardness into the Potato. Two or three of the crosses seemed promising, but it is early yet to speak of their merits. Mr. Fidler also had a large assortment of Potatoes. Messrs. James Carter and Co. showed a large series of Chinese Primulas, and Messrs. H. Cannell and Sons, Swanley, flowers of the Japanese Chrysanthemum Etoile de Lyon and other varieties, besides Gourds. Messrs. J. Laing and Sons exhibited an excellent collection of hardy fruit, both Apples and Pears, and a collection of Japanese and incurved flowers. Mr. T. S. Ware showed a plant in flower of Mrs. Alpheus Hardy.

A full prize list is given in our advertising columns.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE dingy Aquarium was filled with flowers, fruit, and vegetables on Tuesday and Wednesday last, the occasion of the annual metropolitan exhibition of the National Chrysanthemum Society. To suit the peculiarly early season the show should have been held a week ago, when the flowers were in their full freshness and perfection, but the fogs and damp hastened their decay, hence the number of poor blooms, especially of the bulky Japanese varieties. Such a display as that of Tuesday is misleading, by reason of the stereotyped and false system of showing the flowers. Every exhibition of a special flower shows the same glaring faults, and a very slight deviation from a hard and fast set of rules that must be strictly

adhered to from year to year. There is a great advance in the variety of the flowers of the Chrysanthemum, a brilliant range of beautiful colours, some as soft as the tint of a blush Rose, others deep and lustrous, but the expression of the blooms, their beauty of form and grace are destroyed by a lumpy way of placing them on the board. In this large exhibition, comprising no less than forty-one classes for Chrysanthemums alone, there were no cut blooms exhibited as they would be placed in a lady's room. Even the splendid single flowers were so jammed together that their fine outline could not be seen. The slight variation made by Mr. Cannell on the common way of staging the flowers was quite refreshing, but even he did not go so far as to place a few shoots as they grow. The light and shade and delightful freedom of the rugged Japanese flowers are lost in mere bulk and lumpiness. One box of the clear yellow Ralph Brocklebank was so huddled together as to destroy the individual charm of this essentially Japanese variety. There is, unfortunately, no class for cut blooms with leaves to promote a better style of growing, except in the case of the pompons and Anemone pompons, and these would appear ridiculous shown in the same style as the large-flowered incurved and Japanese kinds. The tweezers were used to "finish" and increase the formality of the incurved types. This dressing is quite artificial, and it depends more frequently than otherwise on the skill of the "dresser" than on the actual quality of the flower whether it succeeds in gaining recognition. This is a bad way, and quite opposed to true gardening. There is the same wretched formality in the plants. There was not one naturally grown plant to be seen, and by "natural" we mean those that are useful for the greenhouse and conservatory, unfettered by a series of pinchings and stoppings. Any natural grace of form or habit the plant possesses was stolen from it as far as could well be. We are sorry to see an increase in trained specimens, the victims of the whims and fancies of the cultivator, whose object is to distort the plant into a certain set of shapes. This pernicious system destroys the character of the blooms, especially of the incurved varieties, as shown by the empty centres and general roughness. The society has a great work before it to remove existing evils. Its influence is felt throughout the whole of England, and reaches even to the Continent. This power it might use in promoting a different style of exhibition from that in vogue now, by offering prizes for good hardy kinds useful for the garden, and encouraging the showing of flowers artistically to display the individual beauty and charm of each. It is, unfortunately, located in the Royal Aquarium, which is badly lighted, so that it is impossible to see the true colours of the flowers, noisy, and full of the smoke of bad tobacco. Such conditions are likely to keep away, rather than attract, visitors who wish to enjoy the flowers.

A glance through the numerous stands reveals the value of the new incurved varieties added last year to the increasing list. The rich violet-coloured Violet Tomlin, the pale yellow M. A. Haggas, the buff-coloured Lady Dorothy, and the fawn-tinted Charles Gibson were exhibited both largely and well, so that they may be ranked amongst standard kinds of their section. It is pleasant to find an increasing number of this type, as, unlike the Japanese varieties, there is a very limited series of colours, and few of deep, decided shades as Violet Tomlin. In the Japanese section there is a quicker march forward, and the introductions from the flowery land

improve on acquaintance, especially the beautiful snow-white Avalanche, which has the advantage of size unaccompanied by coarseness. We must also praise the English raised seedlings, as Stanstead White and Stanstead Surprise, two noble acquisitions, and in several stands the bright yellow Sunflower already figured, although only sent out last season. One strange omission in the schedule is the class for single varieties, which have many admirers. In the whole range of Chrysanthemums there are few flowers prettier and of such exquisite grace as Jane or Snowflake, as it is occasionally called. There is also a rich yellow counterpart of the pure white type; while such kinds as Lady Churchill, Admiral T. Symonds, yellow, should be grown by everyone who wants graceful flowers for the drawing-room. As is always the case at this exhibition, there was a keen competition throughout, with the exception of one or two minor classes, and the groups of cut-back plants from the nurseries of Messrs. Laing and Sons presented a large surface of remarkably fresh and well coloured flowers.

The great class was one of much interest, and instituted last year to bring about a competition between various local societies. The first prize is a challenge trophy and £10, and forty-eight blooms have to be staged, consisting of twenty-four incurved, in not less than eighteen varieties, and twenty-four Japanese distinct. We should have liked to see more exhibits, but just now almost every society, except those whose exhibition is past, are engaged in their own special event. The Wimbledon District Society gained the first place, and the blooms were contributed by the well-known Streatham grower, Mr. C. Gibson, of Morden Park Gardens. The Japanese flowers were amongst the freshest in the show and comprised the leading kinds. The same can be said of the incurved blooms. The Cranbrook and Weald of Kent Society came second, and this position was due to the excellence of the flowers contributed by Mr. Doughty, Angley Park Gardens, Cranbrook. The third prize was won by the Hull Society, who were well beaten by the southern growers, a rather singular fact, owing to the remarkably early season and the quick decay of the flowers in the south. Next season other societies should join in this competition, as there are many country shows in which the flowers are quite as fine as here staged. There was little competition in the class for forty-eight incurved blooms, but Mr. Robert Adams, gardener to Mr. G. B. Hudson, Frogmore Hall, near Hertford, was a good first with the leading varieties and the best of the new acquisitions. There was a marked finish in the flowers of Mr. Sullivan, gardener to Mr. B. Chapman, Roehampton, a London grower whose flowers this season show him to be a skilful cultivator of the great autumn flower. He had Violet Tomlin, Norman Davis, a clear yellow-coloured variety, and M. A. Haggas in true character. There were several entries in the class for twelve, and here Mr. C. J. Salter, Woodhatch Lodge Gardens, Reigate, was first. A remarkably fresh and clean lot of flowers was staged in the class for twelve incurved distinct, the first prize exhibitor, Mr. D. Hill, Beachboro' Park Gardens, Hyde, showing Lord Alcester, Alfred Salter, Nil Desperandum, Lady Hardinge, Lord Wolseley, Queen of England, Empress of India, Princess of Wales, Hero of Stoke Newington, Barbara, Mrs. Heal, Golden Empress of India, all varieties that were often repeated through the various stands of incurved flowers, and which will hold their own well against new varieties, unless of unusual excellence. The classes for six blooms of one distinct flower are always interesting; they bring out the favourite kinds, and there is usually plenty of competition. Such was the case on Tuesday; but it would have been difficult to beat the six flowers of the Princess of Wales, shown by Mr. B. Calvert, Great Halingbury Gardens, Bishop's Stortford, who was placed first. The divisions for amateurs, single-handed gardeners, and metropolitan growers were well filled, and the flowers exhibited showed the remarkable ease with

which the Chrysanthemum can be grown in small places and in the London suburbs. It would be well if more such classes were introduced at other shows, so as to give the small growers and those settled in the smoke and dirt of London a chance of gaining awards, which is frequently impossible against the stronger competition of country gardeners, who have the pure air to bring out the full richness of the varied colours. There is also a division restricted to those who actually grow the plants without outside help. Mr. Briscoe Ironside, of Foot's Cray, Kent, was the most successful, his flowers rivaling for freshness, beauty, and intrinsic merit those in the stands of professional growers.

The Japanese flowers were not so fresh and full as last year, but this we must attribute to the early season and loss of bloom through damp. There was a brisk competition in the large class for forty-eight blooms, not less than forty-eight varieties. The fortunate winner was Mr. Charles Cox, gardener to Mr. Trotter, Brickendon Grange, Hertford, whose flowers were finely coloured and fresh, comprising the leading old kinds and the newer additions, as Ralph Brocklebank, the broad, white-petalled Lady Trevor Lawrence, Sunflower, and Sarah Owen. Mr. Thomas, gardener to Mr. Marshall, The Elms, Taunton, was first for twenty-four, exhibiting excellent blooms of well-known kinds, especially of Mme. Baco, a full, globular, rose-coloured flower; Mme. J. Laing, Meg Merrilies, and Ralph Brocklebank. Mr. Cox was again first for twelve flowers, showing Boule d'Or, which was good throughout; Mme. C. Audiguier, Mons. Bernard, Fair Maid of Guernsey, Triomphe de la Rue des Châlets, Avalanche, Carew Underwood, Thunberg, Edwin Molyneux, Meg Merrilies, Jeanne Délaux, and Mrs. John Laing. One of the great features of a show is usually the classes for six blooms of one variety of the Japanese section. Avalanche was the principal variety exhibited, Mr. T. Bettesworth, gardener to Mr. R. Ewing, Cheshunt, showing the flower in its fullest beauty, and when in perfection there is no Japanese variety purer or more delightfully informal than the snow-white Avalanche. In the other stands were excellent blooms of Fair Maid of Guernsey, Ralph Brocklebank, Mr. H. Cannell, golden yellow, and Boule d'Or, but all placed too close together, so as to destroy the characteristic beauty of outline. Such a free and elegant variety as Ralph Brocklebank requires to stand out singly, uncramped by other flowers; then we have the clearness of its yellow colour and freedom of expression in perfection. Reflexed flowers were well shown by Mr. W. Collins, who exhibited Cullingfordi, Phidias, Cloth of Gold, and Dr. Sharpe, all standard kinds. Two exhibitors who had flowers that would have placed them in a good position were disqualified through admitting Amy Furze. This is classed amongst the Japanese reflexed, and rightly so, as it has the character of a Japanese variety, but with the florets reflexed in a different style to the true varieties of this section. All exhibitors in classes where a thin line is drawn between the divisions should carefully consult the catalogue of the National Chrysanthemum Society to avoid disappointment. Mr. W. Packman, gardener to Mr. C. E. Shea, The Elms, Foot's Cray, Kent, had the finest twelve Japanese reflexed, exhibiting Elaine, Criterion, Val d'Andorre, J. Délaux, La Triomphante, L'Adorable, Mme. Paule Dutour, and Mrs. J. Laing. The classes for pompons and Anemone pompons were well filled, and the way of staging the flowers in bunches brings out the lightness of these two charming sections. Mr. Sullivan had the finest twelve Japanese Anemone flowers, showing beautiful blooms. A very light and pleasing arrangement of Chrysanthemum blooms in an epergne was shown by Mr. D. B. Crane, Archway Road, Highgate, who was first in the class, and also by the winner of the second prize, Mr. C. Ings, gardener to Sir Spencer Wells, Golder's Hill, Hampstead.

The plant class called for little comment. We have in the introduction expressed our disapproval of the mop and stick style of training. The groups, however, were the finest we have seen for years, and in both classes Messrs. J. Laing and Sons were first. This success was accomplished by cut-back

plants, a system of growing that is now widely spread. The plants by this method are not more than 3 feet high, a few even 2 feet, and clothed with rich foliage to the edge of the pots. Such varieties as *L'Automne*, *Lady Dorothy*, *Lord Eversley*, *Etoile de Lyon*, *Mrs. F. Jameson*, *Stanstead White*, *Stanstead Surprise*, *Sunflower*, and *Ralph Brocklebank* carried beautiful flowers, quite as good as those produced on the long-legged specimens sparsely clothed with leaves.

There were several miscellaneous collections of flowers. Messrs. H. Cannell and Sons, Swanley, had a large series of *Pelargonium* blooms of rich and bright colours, and showing the great value of this plant for winter-flowering, and flowers of the new *Chrysanthemum Etoile de Lyon* from cut-back plants. The colour is rich carmine on the first expansion of the bloom, but fades to pink, and then to nearly white. It is large and striking, but has an undesirable coarseness of petal. The same exhibitor had beautiful blooms of the charming white single *Chrysanthemum Jane*, *Lady Churchill*, *dall red*; *Souvenir de Londres*, crimson; and the rich yellow *Admiral Sir T. Symonds*, besides the newest of the incurved and Japanese varieties set up in bunches of three and four, an innovation that should be still further extended. A beautiful group of *Carnation Miss Joliffe Improved*, a variety with larger flowers than the type, came from Mr. J. Jennings, gardener to Leopold de Rothschild, Leighton Buzzard. There is no variety that beats this for market, and the improvement in size of flower without loss of the charming rich pink colour is an advantage. Devices and arrangements of cut *Chrysanthemum* flowers filled a fair portion of the St. Stephen's Hall, and these were contributed by Mme. Josephine, Belgravia. Messrs. Perkins and Sons, Coventry, and Mr. J. Chard, Stoke Newington; Messrs. Pitcher and Manda, Short Hills, New Jersey, U.S.A., exhibited flowers of Mrs. Alpheus Hardy and several American seedlings of promise, especially one named *Superbe Flora*, rich rose, with a silvery reverse to the florets. Chinese *Primulas* were shown by Mr. C. Titmus, Leytonstone, and *Cyclamens* by Mr. J. May, Twickenham.

Besides the *Chrysanthemums* there was a large show of fruit and vegetables that constituted quite an exhibition of itself. The Apples were richly coloured, and in some cases suggested orchard house culture. If so, then such fruits should be disqualified in the interests of those who visit exhibitions to note the best outdoor kinds. The first-prize lot of Mr. G. Duncan, gardener to Mr. C. T. Lucas, Warnham Court, Horsham, included good samples of *Blenheim Orange*, a variety that deserves high praise. Mr. John Mackenzie was first in the corresponding class for cooking varieties. The finest dish of Pears was from Mr. Allan, Gunton Park Gardens, Norwich, who had splendid fruits that seemed as if grown in the open ground, as they should be. *Marie Louise*, *Doyenné du Comice*, *Beurré Diel*, *Marie Louise d'Uccle*, *Beurré Bosc*, and *Glou Morceau* were the varieties shown. In one lot *Beurré Clairgeau* was exhibited as an eating Pear. This variety is one of the poorest of all in flavour; its handsome appearance is its only good point, but even this counts for nought when quality is absent. There were some noble clusters of Grapes. Mr. C. Griffin had the finest white variety, showing excellent bunches of *Muscat of Alexandria*. The clusters of *Alicante* from the same grower were also of unusual weight, finish, and colour. Mr. J. Ocle, gardener to the Marchioness of Lothian, Blickling Hall, Aylsham, had the finest clusters of *Gros Colman*.

There was a large display of vegetables, due to the special prizes offered for Cauliflowers, Potatoes, Carrots, Leeks, Onions, and collections of several kinds by Messrs. Sutton and Sons, Reading, C. Fidler, Reading, Webb and Sons, Stourbridge, Daniels Bros., Norwich, and H. Deverill. In the classes for Potatoes, Mr. J. Hughes carried off chief honours, as at the Crystal Palace on the previous Saturday. All the produce was exceptionally fine, especially the *Oxonian Leeks* and Potatoes.

Miscellaneous collections of Apples and Pears

were shown by Messrs. J. Laing and Sons, Forest Hill, Cheal and Sons, Crawley, and John Watkins, Pomona Farm, Withington. Large collections of Potatoes came from Mr. C. Fidler, comprising well-known varieties in commerce and seedlings of his own raising, and also from Messrs. Sutton and Sons, whose exhibit was of the same character. Mr. H. Deverill, Oxon, had a large collection of vegetables and Onions of his own introduction; and Mr. J. Watkins Potatoes of leading kinds. Messrs. H. Cannell had a large series of Gourds.

Floral Committee.

At the close of the judging a well attended meeting of this body took place, a large number of flowers being staged for inspection, Mr. R. Ballantine, chairman of the committee, presiding. The society's certificate of merit was awarded to the following flowers: To Miss Marget (large-flowered *Anemone*), blush guard petals, with sulphur centre, very promising; from Mr. W. E. Boyce, Archway Nursery, Highgate. To John Doughty (incurved), a sport from Queen of England, a fine well-built flower, having a pink base and a pale buff centre; from Mr. J. Doughty, Cranbrook, Kent. To Mrs. Alpheus Hardy (incurved Japanese), some fine blooms of which were shown by Messrs. Pitcher and Manda, United States Nursery, Short Hills, New Jersey, U.S.A., the massive white petals being thickly covered with hairs; Mr. T. S. Ware, Hale Farm Nurseries, also showing a flowering plant. To Lady Dorothy (incurved), a sport from Hero of Stoke Newington, cinnamon-buff in the centre, the basal petals suffused with pale pink; from Messrs. Henry Cannell and Sons, nurserymen, Swanley. To Mme. Alfred Carrière (reflexed Japanese), pure in colour and of good form. To Mrs. S. Coleman (incurved), pink, with a pale yellow centre, a sport from Princess of Wales. To Mrs. Judge Benedict (*Anemone*-flowered), blush white, with sulphur centre, a very promising variety. To *Lune Fleuri* (pompon), yellow, small, finely formed, and very free, likely to prove very useful for cutting from; all these came from Mr. Robert Owen, Castle Hill Nursery, Maidenhead. To Alice Stevens (pompon), apparently a hybrid variety of a fine deep golden yellow colour and very free; from Mr. George Stevens, St. John's Nursery, Patney. To Mme. Baco (Japanese), bright lilac-pink, a large and full flower of a pleasing character; from Mr. Thomas Bettesworth, Burton Grange, Cheshunt. To Willie (incurved) a sport from Captivation, and it is not a little remarkable in relation to this sport that Captivation threw a yellow flower, and this in its turn sported to Willie, delicate pink, with a buff centre; from Mr. W. Holmes, Frampton Park Nursery, Hackney.

A silver medal was awarded to Mr. R. Owen for a large collection of new varieties of which the certificated ones formed a part. The most promising flowers not certificated were *Souvenir d'Alfred Mort* (reflexed), magenta and buff; Mrs. Falconer Jameson (Japanese), red and buff, having broad petals, but not produced in its best form; M. Jules Lefebvre (reflexed Japanese), pale pink, with a silvery reverse; *Perle Precieuse* (incurved), pale purple, with a massive broad petal, but difficult to get into good size; Fred Hart (reflexed), rosy pink; the committee wished to see this again; and Mme. Robert Owen (large *Anemone*-flowered), pure white. Mr. George Stevens had *Anemone pompon Lucy Stevens*, pale yellow, and Colonel Ray (reflexed), reddish chocolate in colour. Mr. G. French, Palmer's Green, had a pure white sport from the pompon *Anemone Marie Stuart* of a very promising character which will, no doubt, be seen again. Mr. J. Doughty had a large single golden yellow named *Sir Thomas Symonds*, rich in colour, of great size, and sweetly fragrant. H. C. Kingston (Japanese) came from Messrs. H. Cannell and Sons. It is an amaranth-coloured variety not sufficiently developed, but the committee desired to see it again. A vote of thanks was awarded to Messrs. Pitcher and Manda for a collection of thirty-four varieties of *Chrysanthemums*, mainly Japanese.

A full prize list is given in our advertising columns.

Smearing fruit tree stems (*Amateur*).—See GARDEN, Nov. 10, 1888 (p. 449).

WINDFLOWER OR WOODFLOWER?

WHILE upon the subject of English names for plants, I should like to deliver a small etymological discourse in support of a correct and significant name for one of our commonest and prettiest wild flowers, and against the incorrect and meaningless name now in use.

Once upon a time, in the bronze age, let us say, our remote and ignorant ancestors, who, nevertheless, knew a thing or two, and certainly had eyes to notice the most striking characteristics of bird, beast, or flower, were familiar with a white blossom which they saw carpeting the quiet and sheltered places of the woods in early spring. So it seemed good to them to call it the Woodflower, or, in their language, *Anemone*. The first letter is perhaps merely emphatic, perhaps locative, much as we say now a-fire, a-bed, a-field; the remainder of the word is almost identical with the Latin *anemus*, a wind. I chanced lately to hear of a place in Ireland called *Anemoe*, a name which, with little doubt, means "the place in the woods," and is actually the very same word as *Anemone*, since *n* is a letter very commonly dropped in pronunciation. The name *Anemone* was also used by the Greeks for the wild flower, either imported from the north, or more probably because most of the languages of Western Europe sprang from the same stock. But, unfortunately for the cause of true word-history there is in Greek a word *anemos*, meaning wind, and so the dear old pedantic early herbalists thought *Anemone* must mean, or, at all events, must be made to mean, Windflower, an erroneous derivation which even Professor Skeat has perpetuated. We can call the *Anemone*, Windflower either upon the somewhat imbecile *lucus a non lucendo* principle, because the plant will have nothing to do with wind if it can possibly help it, or, more rationally, because we think it too late in the day to reject so old a name, however mistaken. But it is evident to the observant that of all flowers the *Anemone* is the most impatient of wind, sheltering itself in the warm copses in England and in the Olive yards in the south, and always looking stunted and shivering and miserable if its light seeds fly abroad and spring up in windier spots. Curiously enough, the common sense of later times has unconsciously fallen back upon the very name given to the flower by our "rude forefathers." *Anemone nemorosa* is but a repetition both in form and signification of the ancient name *Anemone*, and means the Woodflower of the woods.

G. H. ENGLEHEART.

Death of William Davies.—We regret to announce the death on the 31st ult. of Mr. William Davies, aged thirty-five years. He was a partner in the firm of Messrs. Isaac Davies & Son, Brook Lane Nursery, Ormskirk. In early life he was engaged in the cotton trade at Liverpool, but in 1875 he entered his father's nursery business, and seven years later became a partner. One result of his joining the firm as partner was that his father, Mr. Isaac Davies, was able to devote a great deal of his time and attention to the production of new varieties of hardy *Rhododendrons*, of which many beautiful varieties have been raised of late years at the Brook Lane Nurseries. Mr. William Davies, who was of somewhat delicate health, contracted a violent cold in April last, which resulted in lung disease, and in the end caused his death.

AN *Odontoglossum* figured in *Le Moniteur d'Horticulture* for November 10 is known as *Odontoglossum luteo-purpureum* seeptrum var. *Maesserei*.

Names of plants.—*F. B.*—*Scuticaria Steeli*.—*G. T.*—*Veronica parviflora densa*.—*A. J.*—*Brassica lineata*.—*D. B. K.*—Female flower of *Cataetum Bungerothii*.—*Scut. A.*—*Chrysanthemum*, not recognised.—*G. G.*—*Kniphofia foliosa*—syn., *K. Quartiniana*.

Names of fruits.—*C. J.*—Send better specimen and say where grown.—*H. R.*—*Red*—Pear, *Beurré Diel*; Apples, 1, *Emperor Alexander*; 2, *Yellow Buckland*.—*J. C.*—*Cocker*.—*Catillac*.—*G.*—Pears, 1, *Easter Beurré*; 2, *Doyenné d'Alençon*; 3 and 4, *Glou Morceau*; Apple *Lewis's Incomparable*.—*T. J. B.*—Apples not recognised. 1.—*Blossom*.—Pears, 1, *Brown Beurré*; 2, *Duchesse d'Angoulême*; 3, *Huyshé's Victoria*; 4, *Maréchal de la Cour*; 5, *Passe Colmar*.

WOODS & FORESTS.

FORESTRY.

THE forestry lectures in Edinburgh are naturally attracting a considerable amount of attention from foresters and many others who take an interest in tree culture, and it is earnestly hoped that they will be the means of spreading much useful knowledge on such an important subject. At a recent meeting the lecturer gave a brief outline of the advantages of maintaining forests in this and other countries in order to keep up a proper water supply, as well as improve the climate, both of which are affected to a large extent by the presence of woods and plantations. This subject, however, has been well treated by others, so that there is little to invite discussion. Further on the lecturer said that the natural renewal of woodland by sowing is always the best, and that timber produced by naturally renewed forests is better than that from such as have been planted. It would have been very interesting had the lecturer told us where he had gathered such information, as I have cut up wood extensively in the natural forest as well as in woods where part of the trees was planted and part raised from seed. I have always found the wood of planted trees to be of a firmer texture than that of seedlings. In cutting and felling these trees, my men could tell me without any hesitation whether the tree was a seedling or planted by the difference in the hardness and firm texture of the wood. When seedling trees are allowed plenty of space they are apt to assume too much of the bush shape and exhaust a good deal of their substance in producing excess of side branches; whereas planted trees direct their energy more to the formation of wood in the stem.

In the natural forest the best and cleanest timber is always to be found in places where the side branches have been subdued in early life by confinement. In order to illustrate the influence of transplanting upon stem and branch take the common weeping Birch (*Betula alba pendula*) as an example. In many parts of the Highlands of Scotland this tree in its native habitats produces weeping branches and spray upwards of 3 yards in length, but when the seeds are gathered and raised in a nursery and transplanted, the progeny never assumes the character and contour of the parent tree, and this I attribute in a great measure to the artificial way of raising the tree. It has sometimes been suggested that this may arise from a difference in the quality of the soil, but this is not the case, for I know of no other species of tree that is capable of attaining its full and healthy development on such a variety of soils and situations. Transplanting has not only a tendency to harden the wood on the stem, but likewise to promote the formation of fibrous bushy roots. Those who wish to propagate this tree for ornamental purposes should sow the seed in the place where the trees are to remain.

In the management of woods the lecturer laid great stress on the utility of shading the ground and lower part of the stems in order to promote their growth and healthy development. This, so far, is good advice provided it be carried out on rational principles. The woodman should always try as much as possible to avoid the sudden exposure of his trees in the course of thinning.

With regard to covering the surface, I have never seen young plantations do so well as when the surface of the ground was occasionally broken with the hoe and rake to kill weeds and to

subdue undergrowth. Many of the fine old Scotch Firs in the Mar forests of Aberdeenshire were standing at irregular distances apart, and exposed to the full sweep of the blast from all quarters. The elevation there is upwards of 2000 feet above sea level, yet many of the trees contained about 200 cubic feet of timber. Some of these trees presented a grand appearance, the stems being straight and free of branches or twigs for a distance of from 50 feet to 60 feet from the ground, and surmounted by a canopy of deep green branches. The stems of these trees had no shelter nor shading of any kind whatever further than their own bark, which was strong, corky, and furrowed, and of a dark brown colour on the lower part of the stem, while further up towards the top it assumed a reddish-brick colour, and in place of corky bark, the covering here consisted of a series of flat scales or flakes, a wonderful provision of Nature as a protection against the extremes of heat and cold. If ground game are kept within reasonable bounds, the seeds of old trees left in this way germinate and gradually stock the ground with fine young plants.

In cases where the ground around the stems of trees is covered with Heath, Cranberry, Ferns, and other surface herbage, these cannot be removed suddenly without exposing the surface-roots of the trees and retarding their growth, but when the trees subdue and gradually kill the surface herbage themselves no evil results follow.

J. B. WEBSTER.

Destroying stumps of copse wood.—I am cutting down some quantity of copse wood where I should willingly leave the stumps on which Ferns and Mosses might grow, if only I could prevent their starting again. To stub them all would be a considerable expense, especially as some of them are Oak growing over almost bare rock. Is there any way of treating them so as to kill them without poisoning the ground for what may come after them?—S. A. M., *Ambleside*.

Wood of the Hornbeam.—On account of its great toughness the wood of the Hornbeam is employed in engineering work for cogs in machinery. When subjected to vertical pressure it cannot be completely destroyed; its fibres, instead of breaking off short, double up like threads, a conclusive proof of its flexibility and fitness for service in machinery. According to Laslett, the vertical or crushing strain on cubes of 2 inches averages 14,844 tons, whilst that on cubes of 1 inch is 3,711 tons. A few years ago an English firm required a large quantity of Hornbeam wood for the manufacture of lasts, but failed to procure it in England. They succeeded, however, in obtaining a supply from France, where large quantities of this timber are used for that purpose. It may be interesting to state that in England at any rate lasts are no longer made to any extent by hand, but are rapidly turned in enormous numbers by machinery. In France sabots are also made of Hornbeam wood, but the difficulty in working it and its weight render it less valuable for sabotage than Beech. For turnery generally, cabinet-making, and also for agricultural implements, &c., this wood is highly valued; in some of the French wine-growing districts, viz., Côte d'Or and Yonne, hoops for the wine barrels are largely made from this tree. It makes the best fuel and is preferred to every other for apartments, as it lights easily, makes a bright flame, which burns equally, continues a long time, and gives out abundance of heat.

Ornamental Willows.—Independent of the very considerable profit attending the growth of Tree Willows, some of them are of great beauty. The White Willow (*Salix alba*), when not mutilated by pollarding, has both a beautiful and cheerful appearance in a landscape. The Golden Willow (*S. aurea*) is also very handsome, and worthy of more notice than it has yet received, both as an

ornamental and a timber tree. The Carter or Red-twigged Mountain Willow (*S. Carteriana*), with its dark red branches and spiry head, is also eminently calculated to add beauty to our woodlands. The Royal Willow (*S. regalis*), although not attaining to the size of some of the other Tree Willows, is one of the most silvery trees that we have, and although it was introduced in the last century, it is hardly yet known to cultivators. *S. Basfordiana* and *S. sanguinea*, two comparatively lately introduced varieties, are amongst the most beautiful deciduous trees we now possess. Their manner of growth is similar to that of the well-known Bedford Willow (*S. Russelliana*). The branches of *S. Basfordiana* are of a brilliant orange colour, tipped with red, and the branches of *S. sanguinea* are of a clear vermilion colour, and in winter, when divested of foliage, with the sun shining upon them, are as bright as if varnished. They are both vigorous growers, and attain a large size, *S. Basfordiana* being the more vigorous grower of the two. They are perfectly hardy and will thrive in very exposed situations. It is also worthy of remark that the dense smoke of a town does not materially interfere with the healthy growth of Willows. To grow Willows in perfection they must be planted closely, say 3 feet apart each way, or 4840 to the acre would not be too close for the first eight or nine years, when they might be thinned out to half that number. The thinnings would find a ready sale for general purposes.—W. S.

FORESTERS IN INDIA.

WHEN I was a younger man I with many others had a desire to get into the Forest Department in India, but now, after a long residence in that country, I have come to the conclusion that there are only about three or four berths worth having in that department. I was never so much astonished as when I read the following extract, taken from *The Englishman*, July 20, 1889 (Calcutta):—

"The Forest Department has been singularly unfortunate. Since 1870 it has lost no less than thirty-five officers by death alone, besides a number who have been invalidated. The serious illness of Col. Fred Bailey, who was appointed to succeed Mr. Ribbentrop as officiating inspector-general, has been announced, and Col. Doveton, of the Central Provinces, has been obliged to take leave home on medical certificate. Sir Dietrich Brandis is the only officer who has up to the present retired on a full pension. Judging from the very high death-rate for such a small department, it would seem that a forest officer's life is not altogether one to be envied."

The life of a forest officer in India is generally a very unhealthy one and often very lonely. I think one suffers from loneliness as much as anything in this country. I knew several young gardeners who have failed simply because they had no proper society to move in. Another reason why young gardeners should not come to this country is, the depreciated rupee is not worth the risk (unless you get a lot of them). The pay that a young man generally comes out on is 150 rupees a month—£10 now-a-days only. If he comes out to a Tea plantation, the chances are that he will be posted in some outlandish jungle place where he will only see a European about once a month, besides having constant doses of fever and the more terrible complaint of loneliness. The Forest Department is worse than Tea planting. Some places are good for Tea planters, such as Darjeeling and Kurseong—lots of company and a perfect climate. These few, however, are generally reserved for some friend of a director or agent of the company. Still the gardener has found his way up; there are several holding head positions now, but these are the remnants of former days. One does not often hear of gardeners reaching such positions now-a-days; they have to remain as assistants only. The time is fast approaching when a man will be the best off who has his own piece of land to cultivate, and I would advise young gardeners to turn their eyes westward, or Australia rather than India. Once here, one longs to get away and generally cannot.

C. M.

No. 940. SATURDAY, Nov. 23, 1889. Vol. XXXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

CHRYSANTHEMUMS.

SPOILING THE CHRYSANTHEMUM.

THE florists and gardeners are at their old tricks again, and all the beauty and grace of the Chrysanthemum are being destroyed. In their place we have objects as artistic and delightful as the Cauliflower, that pride of horticulture, or as charming to view as that handsome object, the cricket ball. The average gardener considers a good incurved Chrysanthemum as the perfection of beauty and art. To any lover of flowers, to say nothing of any person with any artistic sense, the incurved section are simply hideous monstrosities. Then to hear of their being curled, and frilled, and set with other petals and gum is as disgusting as to see people frizzed, or dyed, or made beautiful for ever by Mme. Rachel. Surely such vulgarities should be eschewed in the garden of all places.

People were formerly in the hands of the gardeners and florists in such matters. They laid down that a Carnation must be an exact circle, that a Pansy should be something else, and that an Auricula should assume such and such a form, and the public accepted their decision blindly. A better era has now dawned, and employers can indulge their sense of artistic propriety without being considered to be heathens. Surely the Chrysanthemum can be saved from the doom of the double Dahlia which has gone to a limbo where it can rest with cut Turnip flowers and the ghosts of ribbon borders. What was it that pleased

The gentleman of Japan
On many a vase and fan?

Was it not the beautiful irregularity, the disorder in order of his native Chrysanthemum? Are the tasteless people who squeeze out the flowers flat on a card, and curl their petals with ivory tongs, and snip them with special tweezers, and insert foreign petals with some other tool, to deprive us of all this grace and beauty? Are the lovely Japanese petals to be thickened and fattened till they look like the petals of Globe Artichokes? Are the flowers to lose all their graceful outline, and to be reduced to the beautiful round contour of the incurved section? Truly, I hope not. Let all who care for gardening discard not only incurved Chrysanthemums, but all the recent mongrel Japanese that ape them. Let them seek beauty of petal and form and colour, and see that the schedules of shows are no longer drawn up by ignorant and tasteless persons, such as those who too often prepare them. For instance, few local shows offer any prizes for the beautiful single Chrysanthemums.

There is another point in connection with Chrysanthemums. Why should we be driven to have plants like broomsticks with a flower

or two at the top? Is that the sort of plant that you see on the vases, the fans, or the screens of Japan? Is size or is beauty the object we should aim at in floriculture? Would a 6-feet high plant with one flower at the end as big as a Cabbage give us as much pleasure as a short plant covered, as it naturally would be, with full-blown and partially expanded flowers, buds, and foliage? These questions answer themselves.

Again, what has become of the race of outdoor Chrysanthemums that used to make London gardens gay in October and early November thirty years ago? Doubtless the pompons and reflexed of those days did not come up to the florists' exhibition standard of 1889, but I venture to say that in all attributes of taste and proper gardening, those now despised and obsolete flowers would whip all the incurved section of the Aquarium. I know there are early and semi-early varieties to be had, but they approximate more or less to the florists' standard, and have not the hardiness, the vigour, and the freedom of the flowers of our youth. It is possible that the glory of the long ago may gild my recollections a little, but it seems to me that there is nothing like the open-air Chrysanthemum display there used to be when the Temple show was mainly an outdoor one. It is not everyone that has glass, but everyone could once have plenty of the flowers in the open.—J. I. R.

—Mr. Molyneux exhibited at Kingston last week three of the largest blooms of Etoile de Lyon without doubt ever seen. The blooms were of that beautiful shade of rosy-peach which when caught is one of the loveliest amongst Chrysanthemums. The blooms measured from tip to tip of outer petals 12 inches—large enough indeed, but as only an advance form of what Japanese Chrysanthemums may grow into. This is enough to appal the hearts of the stoutest growers of Chrysanthemums, as the prospect is that presently one bloom will need the room of three in the stands. Of course Mr. Molyneux won a well-deserved certificate of merit for these fine samples of a huge-flowered variety. It would be interesting to learn from Mr. Molyneux as to his method of culture in this instance, also his real opinion as to the desirability or otherwise of such big flowers. We shall get away from the wondrous beauty and refinement now found in scores of our best Japanese forms if we encourage these monster blooms, and great will be the loss to floriculture. So far the biggest blooms are by no means the best.—A. D.

* * We really cannot understand why Chrysanthemum growers will persist in producing such monstrosities as that referred to above. It would be interesting to know how much each bloom cost, including the labour from the time the cuttings were struck until the flowers were put on the exhibition board. The flower of Etoile de Lyon is coarse and ungainly in size and conveys no idea of what a Chrysanthemum bloom should be. Who would care to use such a huge flower in an epergne? Certainly no one of taste.—ED.

—I quite enjoyed reading the introductory remarks on the National Chrysanthemum Society's show in your issue of Saturday last (p. 467), all of which I quite agree with. It is generally understood that the aim of horticultural shows is to promote the better cultivation, not mutilation, of the various subjects included in their respective schedules, and to create a love for the beautiful and natural, and therefore, one would imagine, to discourage abnormal and unnatural productions. But as this apparently does not seem to be the object of Chrysanthemum societies throughout the

country, we naturally wonder where any benefit to horticulture can be derived from their exhibitions, seeing that the exhibits at their best reach only the acme of clumsy magnificence. This wasting of time and talent in endeavouring to concentrate the vital force of a plant in three blooms instead of 300 (which I have seen) may please the eye of the curious, and be marked with wonder by the less enlightened onlookers, but fails entirely to impart a true idea of a graceful, well-bloomed, naturally-grown plant. And, moreover, except solely for exhibition purposes, of what use are they? They cannot be used with pleasing effect for either conservatory or drawing-room decoration, as their long, bare, unsightly stems render them in every way anything but objects of admiration. And, with regard to cut bloom, what lady of fine taste would prefer these cumbersome monstrosities to graceful sprays obtained from plants which have been allowed to develop all their lateral growths? By this it will be seen that Chrysanthemum societies have been fostering false ideas by spending large sums of money annually by way of encouraging the production of "dressed" abnormal flowers, and entirely ignoring the cultivation of plants possessing all their natural grace and beauty in form and flower, and which are the most useful in every respect for decoration, and are obtained with least labour. Is it not therefore desirable that societies should offer a few prizes for plants and flowering stems naturally grown, in order that the public may have the benefit of comparison?—J. RIDDELL, *Castle Howard.*

Chrysanthemum Peter the Great.—This is one of the most beautiful of yellow Chrysanthemums, and one of the best for the natural system of culture. Of about a hundred and fifty varieties I have grown this year this one has retained its leaves better than any; up to the present, in fact, it has lost practically none, and as the structure in which the plants are housed is lofty, rather dark, and not so dry as could be wished for Chrysanthemums at this season, this says a good deal for its constitution. I consider the beautiful lemon-yellow flowers the most charming of all Chrysanthemums of that colour. For ordinary greenhouse use the young plants should be stopped until nine or ten shoots are obtained, and at the autumn break three shoots may be left on each of these. To secure fine flowers the terminal flower buds only should be allowed to develop. This variety attains a height of about 4 feet when grown on this system.—B.

Chrysanthemum Countess of Lytton.—This is a sport from the Japanese Meg Merrilies, and a fine bloom of it was shown recently at Hitchin by Mr. J. Kipling, gardener to the Earl of Lytton, Knebworth, Herts. It originated with Mr. Kipling about the same time, or a little previous to the appearance of Ralph Brocklebank, the yellow sport from Meg Merrilies, which has been so finely shown this season. Countess of Lytton is of a soft creamy sulphur hue. It is paler in colour than Ralph Brocklebank, and it is said to come a little fuller. This and Ralph Brocklebank were shown in a stand of thirty-six varieties at Hitchin. It is as risky to show both in a stand of distinct varieties as it is to show Emily Dale and Golden Queen of England in a stand of incurved varieties, as was lately done at the South-end Chrysanthemum Society's show.—R. D.

Outdoor Chrysanthemums.—I have read with interest "C. L.'s" note on the above, and as we have tried a few plants on a similar plan this season and it has proved a success, both from a cultivator's point of view and also financially, I think it may perhaps prove of interest to those of your readers who have not tried it. In May last, having some spare plants after potting up our stock, we planted two beds each 14 feet by 4 feet, with a path between. The plants were put out 1 foot apart each way and allowed perfect freedom of growth, so that each plant has from 5 to 8 stems. Early in October they were protected by fixing up a pole as for a tent and covered with canvas and lights, or anything available, just to keep off heavy rains. From these plants we have cut over forty

dozen good blooms and there is quite double that number still on the plants; they are of better quality and have more substance than blooms cut from plants struck at the same time and grown on in pots. I think you will agree that these are quite double the trouble to produce. I hardly need add that the beds require fairly liberal treatment as regards manure, and after they are covered, a soaking of liquid manure once a week; the best I have used for the purpose is made from soot and horse droppings. The varieties we have tried are Elaine, M. Lacroix, Lady Selborne, Sœur Melanie, and Mrs. G. Rundle.—H. R.

LATE CHRYSANTHEMUMS.

WHEN the plan of growing Chrysanthemums to their natural height, the branches resulting from the first break being reduced to three or four in number, each of these in their turn only being allowed to perfect one large bloom was in vogue, a frequent argument against the system was the apparently small returns, albeit the flowers were extra fine, for so much trouble expended in their production. Being a great admirer of perfectly developed Chrysanthemum blooms, I was never at a loss for a reply to any detractive remarks passed upon exhibition blooms, one of the most convincing points in favour of the practice being the fact that not only could we cut if need be grand blooms for either exhibition purposes or for house and dinner-table decoration, but we also had a good supply of serviceable late flowers from many of the same plants. The anxious exhibitor, however, is much disposed to carry out his disbudding practices to a greater extent than there is any real necessity for—at any rate, such is my belief. In order to obtain the finest blooms the cultivator must strive to grow his plants strongly without, however, engendering a gross soft growth; stout, firm, or well-ripened branches have a tendency to push out lateral shoots throughout their entire length, each of which if reserved would give a fairly good flower. Until the primary blooms are well advanced or, say, showing colour, it may be advisable to pinch out the most prominent side-shoots, but there is no reason, in most cases, why those formed lower down should not be preserved. We have ceased to persevere with late disbudding for the past four years, and each season we have had a capital lot of successional blooms, many of the latest of these being cut near the end of February, though Belle Paule lasts very much longer. As far as my experience goes this late crop of flowers can be had without detriment to the specimen blooms.

The greater part of the plants grown to produce large blooms in various districts are at the present time located in vineries, Peach houses, and light, airy greenhouses. Fire heat is of necessity freely used at times, either to forward some of the varieties, or else to prevent damping of the blooms, plenty of room and light being given the plants. These also favour the production of late blooms, and the vigorous, well-fed plants being by no means exhausted, these lateral flowers are not unfrequently grown to a presentable size, or far surpassing the ordinary run of those grown on non-disbudded plants. Instead, therefore, of cutting down or throwing away a considerable number of the tall Chrysanthemums now furnished with grand blooms, a good proportion of them ought in many cases to be kept for the purpose of producing late flowers. As a rule, the Japanese section lends itself most readily to this method of treatment, the Chinese or incurved and reflexed varieties seldom producing late lateral flowers of any value. Nor are all the Japanese worth retaining, among those which give but few side flowers being Boule d'Or, Baronne de Prailly, E. Molyneux, Avalanche, Comte de Germigny, and, in fact, any other rather strong growers, or which are of somewhat soft growth. The tall-growing Mme. C. Audiguier produces abundance of side flowers, and so also do Belle Paule, Fair Maid of Guernsey, Mrs. J. Wright (the late flowers on this variety are very pretty), Thunberg, Duchess of Albany, Elaine, James Salter, Lady Selborne, Val d'Andorre, Peter the Great, Fanny Bouchardet, Triomphe de Châlets, Meg Merrilies, Ralph

Brocklebank, Sunflower, Hiver Fleuri, Ethel, Yellow Ethel, and Bertie Rendatler. With us La Triomphante was this season quite as early as Avalanche, and in common with the last-named grand variety retains its freshness remarkably well, so much so, in fact, that the reserved lower side shoots were in full flower before the primary blooms faded and add not a little to the attractiveness of the plant. We disbud Lady Selborne in order to have perfect blooms of this early and most beautiful variety, and the side flowers on these again were open before the principal blooms were past their best, all being out at much the same time.

In many gardens the long retention of the tall-grown Chrysanthemums would greatly interfere with other arrangements, especially when they are in fruit houses; but I have found them do well and be fairly ornamental in a conservatory, and that is where most of ours are kept. It is quite useless to place them in damp or cold houses, a moderate amount of fire-heat being indispensable to their welfare. In some instances the side flower-bearing shoots were somewhat weak and not capable of bearing up when cut; but it is a simple matter to wire them, and not unfrequently they prove exceptionally serviceable, few other flowers produced during the dull winter months being more effective or durable in either vases, bouquets, or wreaths. Market growers would find the late-flowering Ethel and the beautiful yellow sport from it very profitable if grown in much the same manner as the plants to produce exhibition blooms; and the same remark applies to Meg Merrilies and Ralph Brocklebank. The specimen blooms would fetch a good price, and abundance of side flowers might also be obtained from the same plants. W. I. M.

SHORT NOTES.—CHRYSANTHEMUMS.

Chrysanthemum D. B. Chapman.—Messrs. John Laing and Sons, Forest Hill, write: "We noticed a paragraph in THE GARDEN (p. 448) where you state that Chrysanthemum D. B. Chapman was raised by Mr. Sullivan. It was raised from seed by us in 1885, and named in compliment to Mr. Chapman."

A sport from Mrs. Forsyth.—We have received flowers from Miss Franer, Frogial, Hampstead, of a pink sport from the reflexed variety Mrs. Forsyth. The flowers are the exact counterpart of those of the parent, except in colour, which is of a rich shade of pink. It is certainly worth keeping. Grow it on another year, and then exhibit it at one of the committee meetings of the National Chrysanthemum Society.

Striking Chrysanthemum cuttings.—In reply to "Bramcote" (GARDEN, Nov. 16, p. 448), I know a gardener in East Derbyshire who commences taking cuttings about the middle of October, and does so every year if he can get them. The plants are grown for large blooms. He was a prize-winner in a previous situation, but does not exhibit now. He has had plants in bloom for over six weeks and many coming into flower. The flowers of some plants that he struck last December are not colouring yet. The cuttings were struck in cold frames.—W. H. H.

Chrysanthemum Edwin Molyneux.—Last year when first I saw this variety exhibited at the Aquarium I was very much struck with it, and at once added it to my collection. I have grown this year some 500 or 600 plants of different sorts, and all have flowered well, but the above variety has never given me a bloom, and is not likely to. On looking over some large collections I find that in nearly every case the flowers are single and of no value for exhibition. It would prove very interesting to one who admires the variety for its shade of colour how the blooms staged at the Aquarium last season were grown. I forthwith mean to discard it entirely unless someone who has succeeded with it can tell me how to obtain full-centred flowers. Has the dressing anything to do with the blooms seen in the prize-winning stands this year?—Z.

Origin of Chrysanthemum.—A communication was read at the scientific committee the other day from Mr. Hemsley, in which he recorded the fact that the earliest specific name given to the Chrysanthemum was not *sinense*, but *morifolium*, by Ramatuelle, *C. indicum* being supposed to be a distinct species. Mr. Burbidge, however, observed that of seedlings from any Chrysanthemum, forms

apparently identical with *C. indicum*, which is a native of China, always arise, leading to the supposition that this latter species is the real origin of both kinds in cultivation. All wild specimens are yellow and single, the other colours having arisen by cultivation.

WHITE CHRYSANTHEMUMS.

"C. L." (p. 448) invites remarks on, and additions to, his list of white-flowered Chrysanthemums. All those he mentions are excellent, and I would draw especial attention to the value of the following: Avalanche, undoubtedly the most popular white of the year. Elaine, still one of the purest and freest we have, and scarcely equalled for cutting; its only fault is that when grown naturally—*i.e.*, neither thinned nor fed much—nearly all the flowers have yellow centres when fully expanded. Lady Selborne, the best white succession to Mme. Desgrange, and, like its normal form, Jas. Salter, one of the easiest Chrysanthemums to grow, as well as the freest. Boule de Neige, a splendid late reflexed hybrid pompon, but possessing the same fault as Elaine. Fair Maid of Guernsey, of which I used to grow plants 5 feet and 6 feet through, and have cut a guinea's worth of bloom off a single plant at one time early in December. Fleur de Marie, the finest of all the large Anemones; White Christine, White Cedo Nulli, and Mlle. Marthe.

But there are several other varieties that "C. L." has omitted to mention fully deserving of equal attention with those he names. Let me briefly enumerate some of these, commencing with the earlier-flowering kinds and finishing with the late ones. Mrs. J. R. Pitcher opens of a delicate blush colour, but passes to white as the flowers expand more fully, and if placed under glass it comes quite pure. Mrs. Cullingford is a very pretty flower and comes in early, but grows rather too tall for small pots. Nanum (the Sistou of the French) is an old favourite of mine, very early, dwarf, bushy and free, and of a peculiar silvery-creamy-blush hue, but nearly pure under glass. Why does "C. L." omit all mention of that finest of all the early-flowering group, Mme. C. Desgrange? Perhaps because it is now so generally grown that he deems any reference unnecessary. But we have not seen any too much of this lovely flower.

A fine old variety that I am sorry has nearly gone out of cultivation is Illustration. Though not really white, it is very nearly so if placed under glass to open, and so early and free as to be worth a place in any garden. Vierge Japonaise and Blanc Précoce are two good useful white, or nearly white, October-flowering kinds, but my favourite in this section is La Vierge, a remarkably dwarf growing variety with large reflexed flowers of a beautiful silvery white, and one of the best, if not for cutting, for small pots, window boxes, &c. Then comes Sœur Melanie, a very pure, free, and pretty reflexed pompon, but whose flowers possess the fault of hanging their heads when fully expanded, and so lose much of their effectiveness. The next is Mlle. Lacroix, a semi-early Japanese, following Lady Selborne; it is of the purest white with narrow twisted petals, and a really beautiful and useful flower as well as a good grower. Now we come to the large flowering kinds. Among these, Eynsford White (Cannell) is quite a new Japanese, larger than Avalanche, with broader petals and as pure in colour as Elaine. M. Astorg is a magnificent flower when in perfection. Another fine white is Blanche Neige, but it is rather miffy, and one never sees it now. Other good newer ones are Florence Percy, very fine and pure; Agnes Flight, with long twisted petals; Louise Leroy, blush; Alba fimbriata, with very fine petals; Duke of Berwick, a large flower, slightly tinted with rose; and Maiden's Blush. Of the very late kinds, Princess Teck is one of the best, and Miss Maréchaux, very good. Ethel I do not care for, but Mrs. C. Carey and Ceres are both extremely useful and good. One more I have omitted, but must add. I saw a fine plant of the old La Neige (pompon), not Boule de Neige, the other day, and it was the freest and prettiest thing of its class in the place. B. C. R.

CANONS ASHBY, NORTHAMPTON.

CANONS ASHBY HOUSE is the seat of Sir Henry Leigh Dryden, a descendant of the great poet. The mansion is a fine quadrangular structure, enclosing a spacious courtyard, and was built about the year 1551. The hall contains a remarkable collection of armour and other antiquities, and in the library are many rare and valuable works. There are two main entrances to the house, one on the west, the other on the south side. The former is approached through what is called the Green Court Garden, which contains many quaint specimens of clipped Yew trees, these having been planted 180 years ago. The flower garden and lawns are on the

each side of the central walk. The back part of these borders is planted with standard Roses, perennial Phloxes, Sunflowers, Hollyhocks, single Dahlias, &c., while the front of each border is ribboned with Pelargoniums of various colours, Calceolarias, and Lobelias. There are several fine specimens of Lebanon Cedars standing on the lawn. The park contains some very fine specimen trees of Elm and Oak, and is also well stocked with deer.

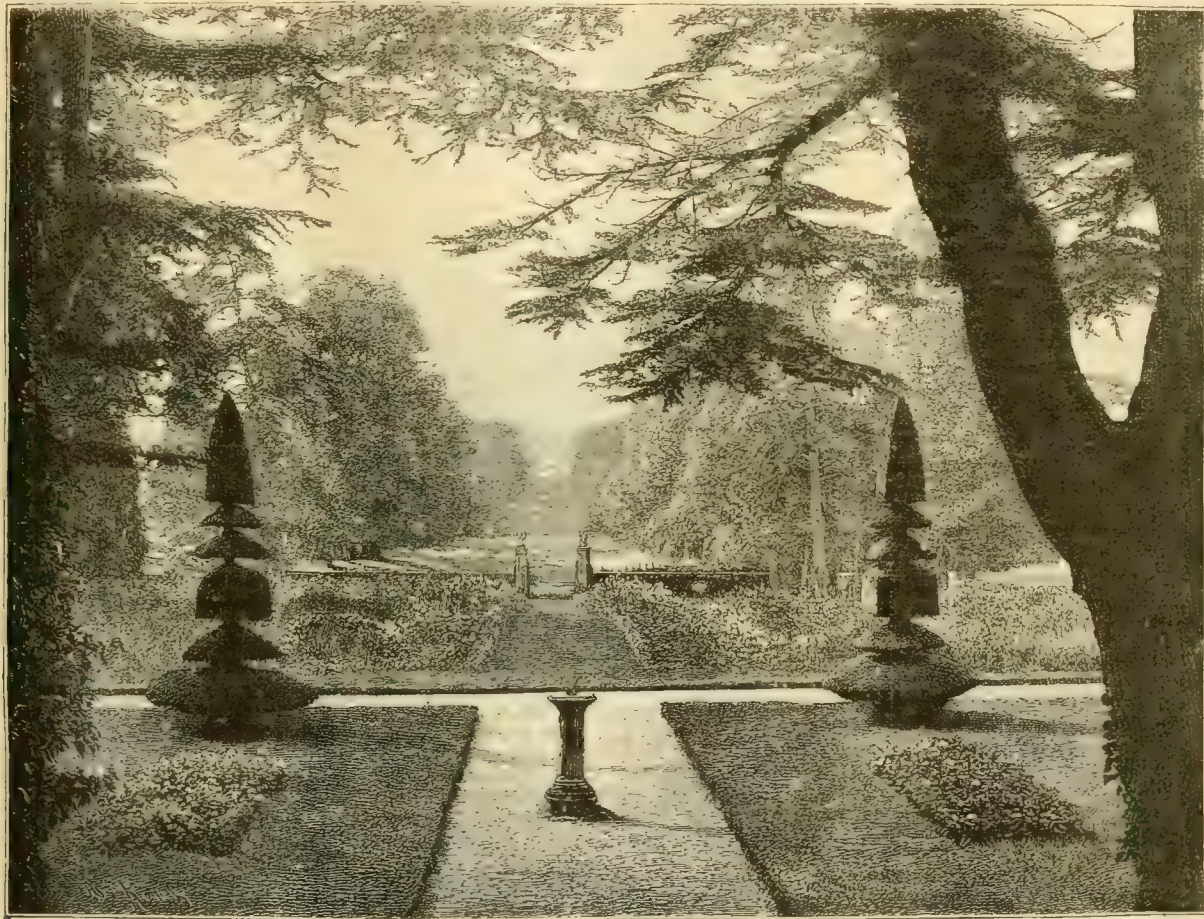
The church, which is only about 100 yards from the mansion on the south-east side, is a great attraction to visitors, as it is very old, the original structure having been built in the year 1154. Part of this was destroyed in

ing any necessary light from the rooms, where creepers trail pleasantly, and a few sub-tropical plants hold their own through the winter, and where the comfort and convenience of a semi-open-air resort are easily obtained. Some of your readers, I daresay, will kindly help with their advice.—V.

FERNs.

ADIANTUMS.

THE Maiden-hair Fern is undoubtedly the most popular of all Ferns, and although many other species are now grown extensively for decoration, none find such general favour as *Adiantum cuneatum*. There are, however, several other species which are more effective for some pur-



View in the garden at Canons Ashby, Byfield. Engraved for THE GARDEN from a photograph sent by Miss Dryden.

south side of the house, and from whence a pretty view of the surrounding country is obtained. Away in the distance the crest of Edgehill is seen, a place memorable for the great battle which was fought there on Oct. 23, 1642. The flower garden consists of a series of terraces terminating at the gate shown in the accompanying illustration. On the uppermost terrace, or the one nearest to the mansion, are blocks of flower beds, which are tastefully planted in summer with Begonias, &c., and in winter with bulbs and other spring flowering plants. The same remarks also apply to the second terrace, while the lower one has a very wide ribbon border on

the time of the civil wars. Canons Ashby is named after the monastic order of St. Augustine, otherwise Black Canons. Adjoining the churchyard is the vineyard, where the monks are supposed to have worked; this now forms the kitchen garden, in which are the fruit houses, &c.

J. H.

Verandahs.—Although primarily an architectural feature, the verandah can be made such a pleasant adjunct to a garden that it surely might be useful to some of your readers if guidance as to their form, material, and treatment could be afforded by those who have worked out the problem either for themselves or others. One certainly sees a diversity of operation in this direction, but when success is achieved, few objects are more effective than one well designed, and not obstruct-

poses, and no other family of Ferns is so rich in beautiful and distinct kinds. We have also many garden varieties added to this genus which are valuable acquisitions. It is, perhaps, owing to the old favourite having to be grown under different conditions to produce that beautiful pale shade of green that has brought about a different system of culture. This has led to other species being treated in a similar manner, and thereby rendering them serviceable, where under the old system they were useless. The old system of growing Ferns in a close moist atmosphere under heavy shading, and potting the plants almost exclusively in sandy peat, is now so thoroughly exploded, that I need not dwell on that matter. Yet even now the necessity of giving Ferns plenty of

light and a little fresh air is not fully recognised, except where the plants are grown for market.

Most of the *Adiantums* succeed best when potted in a compost consisting of at least one half loam. A little well-rotted manure is also beneficial, and leaf mould is valuable. Peat may be used only moderately, and if the loam is good and contains plenty of fibre, it is not necessary. To grow young plants on successfully they must be potted before they get pot-bound or at all stunted. In potting, the crowns of the plants should be kept well down on the surface of the soil, but not buried too deeply. Of course the different species require different temperatures, but almost all the *Adiantums* will thrive better if grown in a light open position with only a slight shading in bright sunny weather. Plants which have been grown under heavy shading will soon shrivel up if exposed, but start the plants and grow them on throughout, and it is surprising how much sun they will stand without suffering. Many of the *Adiantums* are remarkable for the bright tints in the young fronds, and it is only by exposure to the sunlight that this bright colouring is fully developed. It is necessary to attend carefully to watering, as the plants will suffer considerably if allowed to get too dry. On the other hand, they should not be kept too moist. The *Adiantums* may all be increased by division; seedlings make the best plants, however, and this is the most desirable method of increasing the stock of all those from which spores can be obtained.

ADIANTUM FARLEYENSE.—This beautiful Fern is now so well known, that it needs no description or recommendation. It is not always to be met with in really good condition, and yet under favourable conditions it grows freely enough. I find that it succeeds best when potted in good fibrous loam, some leaf-mould, and a little well sweetened stable manure, with plenty of sharp sand added. Plenty of drainage should be used, and the plants potted moderately firm. Although this beautiful Fern should be grown in the stove, it does not require a very high temperature, and should not be grown under thick shading. When grown in a light open position the young fronds assume that beautiful rosy pink tint which adds so much to the beauty of many of the *Adiantums*. Unfortunately, this variety can only be propagated by division. Small plants divided before they have become pot-bound will start away freely, but older plants when broken up are much longer in getting established.

A. FERGUSONI is a very distinct species, of tall growth, the long narrow fronds standing erect. The pinnules are broad and irregular in shape, and of a deep glossy green. It is a most valuable Fern for decoration, and may be easily obtained from spores, which are produced in great abundance.

A. WEIGANDI is somewhat similar in habit, but much smaller in all its parts, growing only about 6 inches or 8 inches high, and forming a compact and pretty plant.

A. TENERUM.—There are several distinct varieties of this desirable species. *A. scutum* is one of the most popular, and is grown extensively for market; it has broad, spreading fronds, and makes a beautiful plant for table decoration; it also stands exposure better than many of the *Adiantums*, and when grown in an exposed position the young fronds have a bronzy brown tint. There is also a variety which has a distinct rosy red tint in the young fronds.

A. LATHOMI is a beautiful variety, with broad drooping fronds of a pale shade of green.

A. VICTORIAE is a dense growing form, with broad pinnules, but rather small fronds.

A. REGINÆ is an improved variety of *A. Victoriae*, having larger and more spreading fronds, which are of a bright fresh green.

A. RHODOPHYLLUM is another desirable variety,

similar in habit to *A. Victoriae*, but with a bright rosy red tint in the young fronds, which changes to a deep green.

A. COLLINSI may also be included in this group. It has tall spreading fronds, the pinnules being rather smaller than in the case of most of the above.

A. ELEGANS.—This is a useful variety, and is now extensively grown by some of those who supply the markets with cut Fern fronds. The latter are larger than those of *A. cuneatum* and stand up more. When well matured they are of a soft pale green. This is also a desirable variety for pot work, especially where larger plants are required.

A. WILLIAMSII.—It is only recently that this beautiful species has come into favour with market growers. When grown in a cool house it is found very valuable for cutting, the fronds being light and elegant, and lasting well after they are cut, but they must not be too old or the pinnules drop off. I believe this beautiful Maiden-hair is often spoiled through being grown in too much heat.

A. FRAGRANTISSIMUM is another very elegant variety with rather large spreading fronds. The pinnules are irregular in shape and deeply cut. In a young state this is rather straggling in habit, but older plants form beautiful specimens. *A. Waltoni diffusum* is nearly allied to the last-mentioned; the fronds are rather more branching and the pinnules smaller.

A. PACOTTI.—Of the compact growing varieties, this is one of the prettiest, forming a dense and compact plant. The small triangular fronds are slightly recurved, and the rich deep green pinnules overlap each other, on account of which it is sometimes called the double Maiden-hair. During the winter this variety is liable to damping if the fronds are wetted.

A. MUNDULUM is sometimes confused with the above, but it is quite distinct. The fronds are about the same size, but are more erect, the pinnules being much smaller and more distant. This variety is grown to some extent for cutting, the fronds being of a nice size for button-hole bouquets.

A. LEGRANDI is another very pretty compact growing variety. It is probably a variety of *gracillimum*, the fronds having the small pinnules, but are short and dense.

A. CUNEATUM GRANDICEPS.—This has rather long fronds which terminate in a tasselled tuft of multifid growths, which bear the fronds down. It is a very elegant variety. The plants should either be suspended from the roof of the house or stood upon inverted pots.

A. MACROPHYLLUM.—Of those with tinted fronds this is one of the most beautiful. When confined to small pots and grown near the glass the young fronds are remarkably bright. *A. macrophyllum bipinnatum* is a pretty variety, the young fronds having a more bronzy tint.

A. VEITCHI is another variety in which the young fronds are very highly coloured. I have never been able to obtain this variety from spores, although I have frequently sown what appeared to be good spores.

A. RUBELLUM.—A small growing variety with erect fronds. The young fronds have a bright crimson tint.

A. DOLABRIFORME.—A remarkably pretty little Fern which should be grown in suspended pots or baskets. The long slender fronds droop over and form young plants at the extremities. This is considered by some to be the same as *A. lunulatum*, but it is quite distinct, *A. dolabriforme* being evergreen, while *A. lunulatum* loses its fronds in winter, the pinnæ in the latter being also larger.

A. CILIATUM (*A. Edgworthi* of some) is another very pretty basket Fern which forms a good companion to the above. *A. caudatum* is somewhat similar, but more erect in growth, and does not form young plants at the extremities of the fronds so freely.

F. H.

Hymenophyllum pectinatum (*Mrs. Abby*).—This is the name of this beautiful comb-like Fern,

and it comes from the southern parts of Chili and from the Isle of Chiloe. The credit of its introduction in a living state belongs to the Messrs. Backhouse, of York. As may be imagined from the country it comes from, it thrives in a low temperature, but should not be subjected to a lower one than 40° to 45°. I have native specimens nearly 9 inches in length, upwards of half of this being leafy; the pinnæ are short and comb-like in appearance from their being divided only on the upper side.—W. H. G.

FLOWER GARDEN.

PINKS.

It is rumoured that the pretty garden Pink, one of the sweetest, yet humblest of our hardy flowers, will shortly find a helping hand to wider culture in the establishment of a society devoted to its interests. If the establishment of special societies for the greater popularisation of particular flowers proves helpful to that end, then the Pink society is to be welcomed indeed. But it is to be feared that the resources of the new body will chiefly be applied in the encouragement of the laced or show Pink, a pretty section, but, all the same, rather a monotonous one. A few of the laced forms of Pinks may be pleasing enough, but dozens will, somewhat like Picotees, very much reproduce each other. There may be distinctions of breadth of lacing or depth of colour, but still the lacing, be it broad or narrow, gives to all the varieties an element of sameness. To my mind, the forms of the garden Pink which most need encouraging are the bunching section, of which we have such a capital example in the old double fringed white and also in its pale pink compeer. These are very hardy, extremely free blooming, and may be increased rapidly by cuttings or division of plants in the autumn, the pieces rooting as readily as *Watercress*, and produce such vast quantities of flowers as to be furnished in tens of thousands of bunches annually. It is the rose, red, purple, crimson, and other rich coloured varieties of these common garden Pinks that we chiefly need. To cater for the fancies of our hundreds of florists may be meritorious, but greater still will it be if the Pink Society can produce numbers of plants of new and useful free-blooming varieties. Have any readers of *THE GARDEN* any stock of the old Paddington Pink, a rosy red form something after *Anna Bullen*, but more free? That once popular variety seems to have been lost to our market florists. Even if the proposed Pink Society did nothing but resuscitate old varieties it would render good service. There are those beautiful, but none too hardy varieties, *Lord Lyon* and *Derby Day*. There is the beautiful *Anna Bullen*. There are many others about the country, doubtless, all of which merit the widest cultivation. We want a race of new Pinks which have the thorough hardness of constitution found in the old *D. plumarius*, and not the delicate habit of the florists' forms. Some of the single Pinks which can be raised freely from seeds give deep red hues, and these if perhaps utilised as pollen parents with some of the red-flowered doubles would give variety of colour, robust habit, and free-blooming qualities in the seedlings. I got a nice lot of seed from *Anna Bullen* two years since, and shall bloom many robust seedlings from the product next year. From a packet of Continental seed have also come some varied, robust, and exceedingly pretty doubles. I have also had some of a curious hybrid character from the mule Pink, *Rose Celeste*, and the single forms. Next year I shall have a very interesting trial of these many seedlings. Some of the richest coloured flowers came during the past summer on long stems, not a desirable feature, but a further trial will perhaps give truer form. I hope if any Pinks are sent to the Chiswick Gardens this winter for the trial of those flowers, *Carnations*, &c., next year that the border forms will be found in addition to the laced varieties. Should the Pink Society come into existence and hold an exhibition, a class for six varieties of cut flowers in bunches to show excellence

for ordinary bunching purposes would prove generally acceptable. A. D.

Preserving home-grown Pampas Grass.

—In reply to "Winton" (p. 421), supposing the flower-spikes to be well grown, they should be cut soon after the top portion begins to show out of the sheaths. The sheaths should then be cut upwards with a sharp-pointed knife, and after a few hours, if the stems are stood in water and in a good light, the plumes will expand and fall out of the sheaths, or they may be shaken out. The advantages of this plan are that you get the plume in its pure and silky state; it does not fall to pieces as when cut in a further developed state, and the panicles have the more erect form. I have tried washing and bleaching further developed spikes, but though I managed the colour pretty well, the seedy effect remained, and from brittleness, after a little time they began to fall to pieces. This does not occur with the earlier cut and opened spikes, and bleaching is not necessary.—J. WOOD, Woodville, Kirkstall.

Annual Dianthus.—"S. D." (p. 408) seems not to have fully understood my meaning in terming Heddegi Pinks as annual Dianthus. I purposed to convey the well-known fact that they are invariably treated as annuals, and that because so readily raised from seed are not worth the trouble involved in keeping the old plants over the winter. That they are half-hardy there can be no doubt, and if our winter frosts did not prove severer than some 7° or 8°, no doubt the old plants would live outdoors very well. But even then they would have a bad time of it in wet weather, and especially when snow thaws took place. If lifted into pots the old plants suffer very much from damping and from lankiness of growth in the shoots, so that it is difficult to keep them stout and bunched, and if neither, then the plants are worthless. As to their being useful winter bloomers in pots under glass, I doubt that assertion very much. I have always found them, when I have lifted and potted a few plants blooming late and free, to be more susceptible to damp than any other flowers. Dianthus delight in plenty of sunshine, and if the soil is fairly holding they will bloom superbly in hot weather, but so long as there is plenty of light they are good rainy weather plants also. With such a wealth of tender plants which bloom so profusely in greenhouses during the winter, it is hardly worth while troubling about potting Dianthus, a few plants of which to keep decently in flower will give more trouble than scores of Chinese Primroses, Cyclamens, Carnations, or Cinerarias. By sowing a pinch of seed in a shallow box in March, getting it up and pricking out the seedlings in a frame at the end of April, and transplanting with good roots to the open ground in May, a brilliant bloom all the summer is assured.—A. D.

Late autumn flowers at Haarlem.—One great point in favour of the cultivation of bulbous plants undoubtedly is that at any season of the year flowering specimens of some species, be it old or new, are to be met with in a general collection of these plants. A corner of one of my houses is now very gay with a group of flowering plants of *Amaryllis robusta* (Tethani). It is strange that so very little is heard of this *Amaryllis*, though its requirements are small and the return great by the splendid crop of blooms to be easily had at this very dull part of the year. *Lilium nepalense* charmed me for several weeks with its powerfully fragrant, long, trumpet-shaped flowers of a yellowish white. I find a little artificial warmth applied to it in the autumn to be very beneficial. The flowering season of the old *Vallota purpurea* may be prolonged till now by putting a part of the plants outside during the summer. The brightly tinted flowers are very acceptable, as at this season they last nearly twice as long as they do in the summer. It is unquestionably one of the grandest of Cape bulbs. *Cyrtanthus McKeni* is just coming into bloom, the flowers yellowish white and very sweet. This is a very easily managed Cape bulb, only requiring a sunny spot outside in summer and a frame where frost can be excluded during winter.

It enjoys copious waterings when in active growth. Each full-sized bulb will now be found pushing up a spike. The sunny, clear weather we are now having proves to be very beneficial for late autumn-flowering bulbs. To-day the lovely *Romulea Macowani* opened its bright yellow and brown blossoms. What a pity this charming bulb still remains so extremely rare. It produces very few offsets, and unless the weather at its flowering time is very clear and sunny, seeds are also but very sparingly produced. *Iris stylosa alba* opened its first blossoms about three weeks ago, and promises to continue flowering throughout the winter. The pure white flowers are extremely chaste, and, lasting many days in perfection, will be found very acceptable for cutting. Though the plant will stand an average winter, the safest plan, to have the flowers uninjured, is to grow it in a cool unheated frame. On the 12th inst., the first of that charming section of *Iris* belonging to the *I. reticulata* group commenced to bloom in the open air. This was *Iris Vartani*, a native of sunny Palestine, and though neither so large nor so good as its near ally, *I. Histrio*, is still worth recommending, on account of its very early-flowering qualities. The illustration in the *Botanical Magazine*, where it is figured from specimens sent by the Rev. H. Ewbank, does but poor justice to the very delicate pale blue colouring; it is besides very sweetly scented.—C. G. VAN TUBERGEN, JUN.

NOTES ON HARDY PLANTS.

Aster ericoides.—Well may many hardy flower lovers have admired this quaint and pretty Michaelmas Daisy this autumn. The summer-like weather of the early part of the season, the later rains, or something seem to have exactly suited it, and as (not like many of the larger and earlier Michaelmas Daisies) the heads keep on expanding after there have been a few frosty nights the plant is of great value. How very beautiful the profusely-flowered stems are when cut! The one drawback of this plant is its height, but it should be grown for cutting.

Trillium grandiflorum.—The pretty and faithful picture of this charming flower given in THE GARDEN, Oct. 26, has, to my personal knowledge, proved highly interesting to many readers, and the plant is coming more and more to the front, so much so, that it is now no uncommon thing to meet with it in gardens in all parts of the country, for, unlike the choicer Primroses, it can be made to thrive almost anywhere, even in the south. I fear, however, that the very special conditions and mode of propagation, described at p. 408, may not tend to the extended use of the Wood Lilies. What is meant by "cutting through the crown" I do not know, but I am sure no cutting whatever is needful, either of any portion of the plant or at any stage of its growth. I should no more think of cutting the roots—knobs or tubers—of any of the Trilliums than of cutting through a crown or clump of rare Daffodil bulbs. The white Wood Lily increases fast where it is thoroughly happy, but the offset tubers always detach themselves when comparatively young, just as Snowdrops do, so there can be no need for any cutting. In a garden in Scotland, where this kind grows to an enormous size as an ordinary border plant, and where it has existed since the present proprietor of the estates was a boy, we have an instance of both its hardy character and indifference to conditions. With me it thrives all over my somewhat dry garden, sloping due south, but I always think it does better if protected from mid-day sunshine, as behind a low shrub, but that is all I do for it. I have *T. grandiflorum* thriving in sandy soil with plenty of fine charcoal mixed, which makes it drier still, and besides, the bed is raised quite a foot above the ordinary level, and here this plant has grown and flowered well for years. Two facts I ought in fairness to name: the bed is in a corner which affords a south-east exposure, and a little Holly bush screens the Lily from the mid-day sunshine. Again, why should these early flowering tubers be left untransplanted till spring? for I take

that to be the meaning of "when growth is commencing." A study of the growth of this plant will show that very shortly after the growth appears at the surface, the flowers will develop; the one flower-bud may be easily felt in the foliar folds when the growth is but an inch high. On that score, then, it would not seem to be the most proper thing to do to disturb the plant so late. And further, as with Daffodils, there is a period when the old roots die and new ones begin to issue; this happens to be about August, and before that the leaves have died down, as a matter of course. What I wish to submit is that about that time is the most proper season to transplant. If you cannot conveniently have ready the new quarters then, put a few knobs into pots of turfy loam and leaf-mould, and by, say November, the time to which many people will persist in putting off planting hardy plants, you will be delighted to see the quantity of silvery roots near the pot sides. It is then only needful to turn out the balls carefully into their intended positions. It would be simply impossible to deal with roots otherwise after November without serious injury. Those who have to buy plants should either secure them in August or September, or have them supplied in pots. According to my experience, these plants suffer more from ground pests, which attack their nutty roots, than from slight variations of soil or situation; still, the species does well in flat and moist quarters, and in mainly vegetable soil, and in such conditions I would certainly, by preference, place them.

Senecio pulcher.—We have this now finely in flower. What a dazzling head of bloom for this dull month! and what a pity we do not generally so manage this plant as to secure its splendidly coloured flowers in quantity earlier. It is to be done, but, not that I am aware of, otherwise than by the help of pot culture, so as to bring on the young plants so that they can be put out in May.

Woodville, Kirkstall.

J. WOOD.

Maize.—An East Kent clergyman during a journey from London to Leeds gave me a wrinkle about Maize plants grown for garden decoration, and especially as cut material for the decoration of churches at the harvest thanksgiving services. These, he said, when growing 8 feet or more in height gave an imposing effect and rivalled the best of the Bamboos. He laid stress on the variety which he grew, and it was that which he got from the common large almost square seed of a reddish colour, and not the smaller, rounder, and amber-coloured sort. He sowed it in shallow boxes in early spring, and got his plants well forward for planting out, just as we do Dahlias and the large annual Sunflower. He cut stems 9 feet long with fruit and they were at once suitable and attractive for church decoration. I can well believe that a plant so striking and full of character is worth some care to grow it well, and I thought also that it deserved a note.—J. WOOD.

Lilium Wallichianum superbum.—"D. D." (THE GARDEN, Nov. 2, p. 404) would appear to have confounded this Lily with *L. nepalense*, as in his concluding remarks he says, "The plant flowered at Low's nursery and figured for the THE GARDEN differs from the drawings called ochroleucum only in having a paler coloured throat, and as it must be distinguished from the already known and perfectly distinct *L. nepalense*, the easiest way of solving the difficulty will be to call it *L. nepalense* var. *ochroleucum*, and which will at the same time be appropriate and descriptive." In spite of "D. D.'s" knowledge of these plants, I beg to differ entirely from him in this respect, for the Lily known as *L. Wallichianum superbum* certainly bears a far greater resemblance to Wallich's Lily than it does to *L. nepalense*, though in my opinion it is sufficiently distinct from either to be entitled to specific rank. Between *L. Wallichianum superbum* and *L. nepalense* there are no points in common, except that they come from the same region; therefore to regard one a variety of the other is about as easy to understand as it would be to class all the Japanese Lilies—*L. auratum*, *speciosum*,

tigrinum, Thunbergianum, and others—as varieties of one species. I have not had the advantage of seeing the drawings at Kew, but Wallich's name of *L. ochroleucum* seemed so appropriate for the so-called *L. Wallichianum superbum*, as to lead me to suggest that it might be the species on which Wallich had bestowed the name of *ochroleucum*, for it is difficult to imagine that a botanist of his experience would suggest such an inappropriate name for the typical *L. nepalense*. As the case now stands, the Lily known as *L. Wallichianum superbum* may be a variety of Wallich's Lily (which is doubtful), but a variety of *L. nepalense* it certainly is not.—P.

AUTUMN CROCUSES.

I GREATLY admire the autumn-flowering Crocuses, and was pleased to read the notes by the Rev. C. Wolley Dod. We have all the varieties named by him in our garden here. We grow some of each in pots, and they are of spotless purity in frames or pits. Some species, such as *C. zonatus*, increase at a very rapid rate, while others increase slowly. The other day I looked over the large collection of Messrs. Barr and Son in their new nurseries at Earlsfield and Surbiton, where some are grown in pits or frames, others, and the large proportion of them, in the open ground, not in isolated clumps, but in some cases a whole bed of one species. Messrs. Barr are giving great attention to the culture of these beautiful garden plants, and take great pains to have them true to name.

C. ASTURICUS is grown here as a species, and varies considerably in colour from rich purple to pale lilac. The flowers are large and very effective; there is also a white form, but it was not in flower. Mr. Maw, in his monograph of the genus, says it is near *C. nudiflorus*, but distinct from it. *C. Clusi* was also in flower, and differs but little from *C. asturicus*; the colour is rose-lilac, shading to pale lilac. It is found in Portugal, and is merely a geographical form. It seems a pity to multiply species when the difference may be caused merely by climatal influences.

C. BORYI, with its beautiful milk-white flowers with yellow base and branched orange stigma with white anthers, is very striking. The variety *marathonisensis* is distinct in the very narrow segments, lavender-blue with paler coloured base. This is not a vigorous species, but it flowers in the open, though in cold districts it would require a bell-glass.

C. CANCELLATUS is a lovely white species which grows freely with us, as it does with Mr. Barr.

C. CANCELLATUS CILICICUS differs from the type in being of a pretty pale lavender. Mr. Maw says this varies in its colouring, and he found it easy of cultivation and of robust habit.

C. HADRIATICUS is also very handsome, the flowers snow-white. The variety *chrysobelonius* differs from the type in the base of the segments being purple.

C. IRIDIFLORUS, also in flower, is certainly a distinct species, and interesting too, because it was known and described by Parkinson as *C. byzantinus argenteus*. It is the only Crocus with a purple stigma; the outer petals are of a fine rich purple, the inner (half the size) of a delicate lilac-purple feathered; the anthers are primrose coloured. There is a white form, but it is not in cultivation in England.

C. LÆVIGATUS, collected by Mr. Maw, has white flowers with pale orange base, the outside of outer segments feathered purple; stigma, primrose; anthers, white.

C. LONGIFLORUS is in masses of its beautiful rose-lilac flowers, the stigma scarlet with yellow anthers. The variety *miltenisensis* differs from the type in having paler flowers, smaller in size, and the base of the outer segments of a chocolate colour.

C. NUDIFLORUS is also very desirable, its purple-violet flowers being very showy. Messrs. Barr have also the beautiful white form. There is also a striped form. Another robust garden plant is *C. medius*, with bright lilac-purple flowers. There is a variety pallidus with paler coloured flowers.

C. OCHROLEUCUS, with milk-white flowers, primrose stigma, and white anthers, is distinct and beautiful.

C. PULCHELLUS, with pale lavender-blue flowers with yellow base, is very beautiful. The white form albus I think the most beautiful of all the white autumn-flowering Crocuses. There are three forms of *C. sativus* in flower besides the type. *C. sativus* does very well in the open garden here, but it is certainly

rather fastidious, as I tried to establish it on a Grass bank facing south, but the bulbs have all died out. Some forms of *C. Salzmanni* had large blue-purple flowers; others had them soft rose-lilac. *C. Tourneforti* has rose-lilac flowers.

C. SEROTINUS also produces fine bold flowers of a rosy-lilac colour, the anthers being yellow.

C. ZONATUS is one of the freest flowering of all the garden Crocuses, but it had almost passed out of bloom in Messrs. Barr's nursery on Oct. 15. Six bulbs that I planted of it a few years ago have grown into a dense crowded mass. Mr. Dod says the colour is pale lilac, but there is also a flush of rose, and the rich yellow throat renders the flowers very beautiful.

The midwinter species cannot be depended upon to flower in quite the open garden. They must in some way be protected by glass, and under the glass screen they do not suffer from frosts nor wet. The partly developed flowers may be quite frozen, but when thawed by a blink or two of sunshine, it is interesting to see how rapidly the blooms expand. Harassed by alternate frosts and wet out in the open the buds perish. As seen in formal rows and beds, these evanescent, but lovely flowers are not very striking, especially those of them that have no foliage with the flowers; but in carefully selected positions, and where the leaves can develop well, so that the bulbs can ripen perfectly, they are most interesting all through the late autumn months. Crocuses require a sunny position and rather light sandy soil. J. DOUGLAS.

WATER AS A CULTURAL FORCE IN FRANCE.

IN France overhead sprinkling seems an incessant operation, and this is mostly done with rosed watering-pots, rather than the syringe or garden engine; the latter are also used, though much more sparingly. But the showers from water-pots seem to be in daily, almost hourly operation. This constant overhead watering is generally attributed to the dryness of the climate and the deficiency of rainfall, though neither of these are so different from our own, as is mostly assumed. The air, on the whole, and especially throughout the summer months, is assuredly very much drier in Paris than in London. But the rainfall in England hardly exceeds that of France by more than 2 inches; hence we must turn to other explanations for the greater devotion to what may in a special sense be called water culture in France than at home. I think these may be found in the greater tendency across the channel to race most crops against time. Neither cold nor drought is permitted to arrest their growth or make them stand still; hence the wonderful patience in covering and perseverance in watering. Cloches, those simple contrivances to catch sunbeams and force them into crisp sweet salads, are examples in point. Straw mats of many sorts, and other contrivances in the form of overlapping coping, &c., are others. Natural heat and shelter are more utilised in processes of production in France than in England.

It is just the same with water. No labour is considered too great to obtain and sustain a constant supply in almost every garden, and to bring it into direct contact with the growing crops and other plants. Arrestment of growth through drought is a loss of time and capital, rent and labour, quality and quantity of produce. It is no uncommon thing to see another crop run into money in Paris during the interregnums of growth through drought, all too common in England. The indefatigable use of the hose and the watering-pot, mostly the latter, makes all the difference.

The effects of the extra supply of water are equally marked in the verdure of the Grass, the luxuriant growth, and longer lasting of the flowers. Few will affirm that French lawns are equal to English. They mostly lack the velvety character and sheen that impart an inimitable finish to the well-kept lawns in our own climate. But the French lawns are greener on the average, as every visitor may see for himself, alike in the French picture galleries and in the parks and gardens. So striking is the difference, that good British artists have often objected to the excessive greenness of

the Grass in the landscapes in the Salon or the Louvre. This verdure of the Grass in France is largely sustained through the constant watering of the turf. Nurtured and fed daily through overhead waterings, assisted occasionally by slight dressings of stable peat, the Grass of Paris maintains its special verdure and freshness. The copious use of water also greatly assists French horticulturists and landscape gardeners in the prosecution of the work of the removal of large trees and shrubs at almost any season of the year. One of the most remarkable sights of Paris this year is the marvellous health of the enormous masses of plants, shrubs, and even trees of all sorts so recently transplanted in connection with the great Exhibition. With hardly any exception among so many thousands, the whole are as fresh and green as if they had occupied their present sites for years.

D. T. F.

STOVE AND GREENHOUSE.

HOFFMANNIAS.

IN my younger days these plants were known by the name of *Campylobotrys*, and for a long time we had but one species, *C. discolor*; after some years we were told that the name of this genus was incorrect, and *Higginsia* was the name we were instructed to know this plant by, and after that came the name that we now know it under. Whilst finding fault with the continual changes of names, I do not find fault with the plants, for they are beautiful and deserve more attention from both gardeners and amateurs than they get at the present time. It was through M. Linden, of Brussels, if I mistake not, that we were first led to know most of the kinds of this Cinchonaceous Order, and we have much to thank him for, and I wish again he would try and find for us some more kinds, for it is possible that more exist. These plants came in with *Marantas*, and both appear to have lost the charm they once had for plant growers. Like the *Marantas*, *Hoffmannias* are dependent upon the beauty of their leaves for their decorative properties, their flowers being small and inconspicuous. The plants, for the most part dwarf in growth, require stove heat, and they like shade during the summer season. They also enjoy a thoroughly moist atmosphere and a liberal share of moisture to their roots; therefore the drainage must be always open and free. The soil for growing them in should consist of about equal parts of light turfy loam, fibrous peat, and good leaf-mould, the whole to be made fairly sandy. Nearly all the *Hoffmannias* make admirable objects for the front row plants in the stove; they may also be used to clothe the ground on large pots, which are too frequently left with all their bare and naked hideousness. *Hoffmannias* are also admirably adapted for rockwork in a stove fernery. The plants belonging to this family are natives of South America, New Grenada, some species coming from Brazil, and I think also some are natives of the West Indies. The following species are very handsome, and used to be found plentifully in our gardens:—

H. DISCOLOR, the oldest kind known to me, is a very hardy dwarf plant, and perhaps less conspicuous for its beauty than any of the kinds of later introduction. The leaves are about a span long, somewhat obovate, strongly veined, deep green above and red beneath.

H. ARGYRONEURA is a plant slightly stronger than the last named. The leaves are of a peculiar dark, blackish green hue, strongly plaited, and of a purplish red beneath.

H. GHIESBREGHTII.—It is a remarkable fact that nearly all the plants which I have noted bearing

this name are very strong growing, and this one is no exception to the rule. It is said to attain a height of from 3 feet to 4 feet. It is also curious in having a square stem, which is deeply winged at the angles. It bears opposite leaves of a broadly oblong shape, tapering to the base, rich deep green, with a velvety appearance on the upper side and of a reddish purple beneath.

H. GHIESBREGHTI VARIEGATA.—This also bears out my former statement as to vigorous growth, for a plant which I noted in the Palm house at Kew was a marvellous example. When I last saw this specimen it was some 5 feet high and as much through (the figures, however, are only from memory). The leaves when young are beautifully mottled with red, pink, and deep velvety green. This, however, with age passes away, leaving the deep green mottled with grey, the under side being deep reddish purple. It is a handsome, but rather a coarse plant.

H. PYROPHYLLA is a dwarf plant, with leaves somewhat spatulate in shape, some 6 inches or more in

4 inches high from bottom of pot, and has three flowers. The first bud opened on Oct. 10. The plant has been brought into the house several days to be painted, but, notwithstanding this, the flowers are still (November 12) in beauty. I doubt this Lily or *L. Wallichianum* ever being satisfactory as out-of-door Lilies in this country, as they bloom so late that buds are usually spoilt by frost. I think that we must be content with *L. polyphyllum* and *L. giganteum* out of the Indian Lilies for this purpose.—**GEORGE F. WILSON, Heatherbank, Weybridge Heath.**

COCHLIOSTEMA JACOBIANUM.

This is a grand plant, of which I have received a leaf and inquiries respecting its flowers, &c., from "S. W. S." The plant was introduced from Ecuador, upwards of twenty years ago, by M. Linden, of Brussels. I had a good deal to do with it upon its first introduction, and was quite enraptured with it; but I must say it



Cochliostema Jacobianum.

length, deep green, the whole surface covered with short fiery-red hairs.

H. REFULGENS.—This is a more robust-growing plant than the last named, whilst its flowers are more showy than those of most of the kinds. Leaves about 6 inches long, obovate, tapering suddenly to the base, deep green, tinged with red and having a satiny lustre, the under side reddish. The flowers stand well up above the leaves on long, deep red, hairy peduncles, the flowers themselves also being deep red.

H. REGALIS is a very different plant to the last species, and one that is entirely dependent upon the beauty of its leaves for its display, as the small flowers are borne in clusters upon the old stem below the leaves. The leaves are strongly ribbed or plaited, deep olive-green with a satiny lustre, and deep red beneath.

H. SMARAGDINA.—This plant lacks the beauty of the last-named kind, but it forms an admirable contrast to the other sorts. It is dwarf, the leaves, each of which is some 6 inches long, being plaited and pale green in colour. **W. H. G.**

Lilium neilgherrense.—I can recommend *Lilium neilgherrense* as a conservatory plant, having observed one here for about a month. It is in a pot near a door that is usually open, is 5 feet

was only a few that I could persuade to have the same opinion of it as I have always had. Strange to say, one seldom sees it in collections now-a-days, and I am very glad to hear of it doing so well at Brighton. It belongs to the Natural Order Commelyneae, the order which includes the time-honoured name of Tradescant, who was gardener to Charles I., and who had the first museum ever established in this country. In the genus Tradescantia, which is popularly known as Spider-wort (through the juice of *T. virginica* being used in the cure of venomous spiders' bites), we have numerous beautiful hardy plants, which are far too much neglected even in these days, especially by those who have woodlands and copses which they desire to keep in a gay condition, and *T. virginica*, with its numerous colour-varieties, is one of the best, the natural colour being rich violet-blue. The plant now under consideration, *Cochliostema Jacobianum*, is a robust grower, bearing leaves of a rich deep green, with a narrow marginal border of purple. The leaves are 3 feet or more in length and from 3 inches to 6 inches in breadth, although in a few cases I have seen them broader. The flowers are numerous and produced in large branching panicles. At the base of each whorl of flowers are four large mauve-

coloured bracts. The flowers, borne in short deflexed cymes, each measure upwards of 2 inches across, the three outer segments being purplish pink in colour, the inner three much larger, beautiful violet-blue, the margins bordered with long purple hairs, whilst at the base of the flower in the centre are two tufts of purple hairs and one of yellow. It is one of the most remarkable as well as the most beautiful plants ever introduced, the delicacy of the tints of its flowers being charming in the extreme. The flowers are also very fragrant. It is easily grown. I have always succeeded admirably with it in an ordinary stove, but I do not like to give it a lower temperature than is suitable for Crotons for fear of its leaves becoming discoloured, which, if I mistake not, is somewhat the case with the leaf enclosed by "S. W. S." The plant requires plenty of water, but at the same time the drainage must be in thorough order to prevent the soil becoming sour or stagnant, as this would cause the leaves to come deformed, and anything of this sort would interrupt the symmetry of the plant and spoil its beauty. The soil should be a mixture of light turfy loam, leaf-mould, and peat in about equal parts, and a little sharp sand to make the whole more porous. The plant will ripen seeds, and may be increased in this way. **W. H. G.**

Acacia platyptera.—Whether in or out of flower, this *Acacia* can be easily distinguished by the peculiarly winged stems. The blossoms are produced during the last two months of the year. The stems of this *Acacia* are sturdier and the branches fewer than in many of the kinds, while the little golden balls are borne for some distance along the shoots. Its cultural requirements are not great, but it is certainly far from an easy subject to propagate by cuttings, as may be readily understood, owing to the peculiar conformation of the shoots. The best cuttings are furnished by the smaller and weaker shoots, that should be covered with a bell-glass until rooted.—**H. P.**

Rudgea macrophylla ("H. T., Manchester").—From the above reader comes a very fine globose head of flowers for a name, and some hints as to cultivation. Some twenty years ago, when this *Rudgea* was new, I sent a number of plants of it into the neighbourhood of Manchester, but the majority of the purchasers did not appreciate it as I did and still do. It reaches several feet in height, and will bear cutting well, so that those who do not keep their specimens nicely furnished have only themselves to blame. It produces dense globose heads of bloom of a pure creamy white, as many as sixty flowers on one head, each bloom being considerably over an inch across; the flowers are thick in texture, tubular, before opening globose, but when open spreading into a fine-lobed limb, in the young state pure white, becoming somewhat creamy-white when expanded. The plant has large, broad, opposite leaves, which are each 18 inches or 2 feet long, leathery in texture, strongly ribbed, and deep green. The plant should be cut back after flowering and before it commences to grow again, and when starting it after cutting it down it should be shaken out and repotted. The most suitable soil for this plant is a mixture of peat and light loam made sandy, and during the summer it requires strong heat and moisture—indeed, at all seasons it must have a fair amount of heat. Your plant appears to flower somewhat early, as I have usually seen it blooming at the end, instead of the beginning of the winter. If, however, it will flower before Christmas it would be doubly valuable.—**W. H. G.**

Thysanacanthus rutilans.—This *Thysanacanthus* is usually seen as a tall upright-growing plant, and this habit of growth is well calculated to show off the long drooping panicles of bright red, tubular-shaped blossoms to great advantage. If the plant is 1 yard or more in height, the panicles of bloom droop sufficiently to touch the

pot. When the plants are dwarfer, some part of their beauty is lost, owing to this pendulous character, and I was much struck recently in one of the stoves at Kew to see comparatively dwarf plants suspended from the roof. In this way many of the racemes extended much below the bottom of the pot, and very beautiful objects they formed, so totally different from all their associates. The *Thysacanthus* in question is very useful where houses have to be kept gay at all seasons, for it flowers during the autumn and winter months, when its bright-coloured blossoms are so acceptable.—H. P.

Winter-flowering Flax (*Reinwardtia tetragyna*).—While the old *Reinwardtia*, or *Linum trigynum*, is met with in most gardens where there is a structure in which it can be successfully grown, the other species (*tetragyna*) still makes headway but slowly. Of this last a coloured plate was given in *THE GARDEN*, September 3, 1887, in which the difference between it and the better known species was well shown. The flowers of *R. tetragyna* are larger than those of *R. trigyna*, and their colour is a clear yellow instead of the orange hue of the older kind. Both of them are plants of easy culture and flower for a long time during the dull winter months. They must not be kept too hot in the summer, otherwise the foliage becomes thin and is liable to be attacked by red spider, which soon destroys the beauty of the plant. *R. tetragyna* is said to have been introduced long ago, but it is only within the last few years that Messrs. Veitch have put it into commerce.—H. P.

Grevilleas in flower.—First and foremost amongst the members of this Australian genus of shrubs now in flower must be placed *G. Preissi*, a free-growing species forming a much-branched bush, with long slender shoots somewhat sparsely furnished with prettily divided leaves, so that even when out of bloom the plant is very elegant. The flowers are borne in closely packed terminal clusters, are of the peculiar curved shape common to most members of the genus, the long protruding style being bright red. In a greenhouse where the atmosphere is not overcharged with moisture during the winter, this *Grevillea* will often flower from September to March, so that this circumstance in conjunction with the beauty of its blossoms renders it a very useful subject. This *Grevillea* is also known under the name of *G. Thelemanniana*. A different plant from this last is *G. ericifolia*, which forms a dense, much-branched little bush, thickly clothed with narrow needle-like leaves. This often flowers at different times of the year, and the blossoms, produced when the days are brighter, are more richly tinted than at the present time. Now the body of the flower is light pink with a reddish style. In wintering these *Grevilleas* damp must be especially guarded against, as mildew is liable to attack the foliage.—H. P.

Dahlias in pots.—In places where quantities of flowers are required all through the autumn nothing will be found more useful than Dahlias in pots, excepting, of course, the *Chrysanthemums*, which are the plants *par excellence* for this season; but, splendid as they are, and with all the rich colouring they afford, most people like variety, and this the Cactus and pompon Dahlias give. For table decoration the fine *Juarez* has no equal, as its blooms are just of that loose, easy, irregular form to be most pleasing, and the brilliant scarlet flowers are very striking when in glasses on the white cloth, where they would be quite perfect if they had not such a persistent way of facing to one side, instead of being more erect in their habit. As companion blooms, those of the white-flowered *Henry Patrick* are the best; but I find that the plants are not so free blooming as *Constance*, although the flowers are superior and quite white from the first. Among the pompons, for church decoration and for cutting to furnish vases in rooms there is none equal to *Guiding Star*, which is very free blooming; the flowers are beautifully formed and fringed, and borne on stout stalks that support them without any drooping. To have these and other Dahlias in at this time of year, the way to manage them is to start the old roots in spring and

strike cuttings, which should be potted on or shifted into 10-inch or 12-inch pots at once, according to the strength of the sorts, giving rich soil. When the potting is complete the plants should be plunged out in the open. During summer it is necessary to water once or twice a week, or more frequently if the weather be hot and dry, and when the buds show they should be picked off up till the middle of September, and at the end of that month the plants may be housed. This should be done where they can have a warm temperature and plenty of air, and, to aid the flowers in opening, liberal supplies of liquid manure will be of much use, as Dahlias are gross feeders, and cannot well be overdone with stimulants unless given unusually strong.—S. D., in *Field*.

CAMELLIA CULTURE FOR PROFIT.

THE culture of Camellias for cut bloom cannot be considered so profitable as it was a few years ago. Various causes have operated prejudicially on the value of Camellia blooms, amongst which the large importations of cut blooms of various kinds from abroad at an early period of the year, and the serious competition of the Channel Island growers are the principal. Some fifteen years ago the white Camellia was in the height of its popularity as a market flower. If a collection of plants was sold, it was curious to see how the interest of buyers was concentrated on a large plant or two of the old *alba plena*, if such were included in the sale. I have known plants not more than 4 feet high, and not remarkably vigorous, realise from ten to fifteen guineas. The first blow to the great popularity of the Camellia was, I think, given by *Maréchal Niel* Rose, which for a few seasons reigned supreme as a button-hole flower. This was followed by the advent of large quantities of *Niphetos* and other Tea Roses. The Camellia is no longer the necessity in early spring that it was, and Camellia growers must now rely on the winter months for securing a paying price for their blooms. That period of the year between the end of the *Chrysanthemum* season and the arrival of imported Roses is the one that must be taken advantage of by Camellia growers. At that time Camellias of all kinds make good prices, but white blooms, of course, are most valuable. The difficulty is to get the plant to bloom freely, for the Camellia is not like the *Azalea* and many flowering plants, as it will not bear the amount of artificial warmth that must be employed to push them into flower. It is very dangerous to place them in a temperature of more than from 50° to 55° during the winter months. Even in keeping out frost care must be taken that the house does not get overheated, for a too high temperature for a few hours only will cause much bud-dropping later on. Much of the bud-casting that causes so many disappointments in Camellia culture is, I am convinced, brought about by "firing up" early in the night, so that there may be no danger of frost getting in towards morning. Under a proper system of culture it is, however, certain that the blooming season of a Camellia may be much modified. Plants that are allowed to bloom in the ordinary manner and that are full of buds will not go out of flower before April. They then have to make their growth for another season, and it stands to reason that the later the young growths push the later will be bud-formation. Those who grow *Azaleas* for early forcing push their plants along early in the season, so as to get the buds well plumped up in August. The same must be done with Camellias if a good harvest of bloom is to be taken from them at a time when the prices are good. Once this precocious flowering disposition can be promoted, it is an easy enough matter to retain it, for, like Vines that are forced, Camellias will show a tendency to start at a much earlier period than is the case in the ordinary way of growing them. One of the great drawbacks to embarking in Camellia culture is the time that must elapse before young plants can come to the size that enables them to yield much bloom, and it is hardly necessary to say that the purchase of old specimens involves an outlay that

many cannot or may be unwilling to incur. It is, however, as practicable to apply rapid culture to Camellias as it is to many other plants grown for profit. There must indeed be a certain loss incurred for a year or two, but this is amply repaid not only in the plants blooming when they are most wanted, but in the number of flowers produced. The sacrifice consists in the picking off the buds for a time, thus relieving the plants of a load and inducing them naturally to start into growth much earlier. The strength required to expand the buds is put into wood-formation, just as a fruit tree that has no fruit on it will make extra strong growths. If two sets of plants are grown on, one allowed to bloom and the other treated as above indicated, the difference in their dimensions at the end of two or three seasons will prove how much is gained in the long run.

With a good growing temperature early in the spring and the concentration of energy on wood-formation, a difference of a month may be made in the flowering period, and once this change of habit is effected there is no difficulty in retaining it. Plants that are treated in the usual way and give but a spare supply of blooms in the dead of winter may thus be made to yield a fine crop. This is worth trying for. There is a vast difference between getting 5s. per doz. and 2s. 6d. per doz. when the blooms are marketed. There is no doubt that the most profitable results are to be obtained from plants that are planted out in a good border. However well pot plants are attended to they will never equal such as have a larger root-run. At the same time pot or tub culture offers facilities for turning to good account space that might not otherwise be utilised. Camellias not requiring so much light as flowering plants generally, may be grown in the shade of other things. They will do very well under Vines, and by having them so that they can be moved at will, it is possible to give them a few weeks' full light and exposure when the buds are set. In this way they can be maintained in the most robust health, and a few plants only in good condition will help to pay the coal bill for the Vines. In more than one London market garden they are allowed to remain the year through in the house under Vines. In one instance at least they are planted out on the back wall, the Vines having their roots outside. They do remarkably well, producing thousands of good blooms annually. Several market growers have them under Roses, and this may be regarded as a happy combination, as the temperatures and general treatment through the year that Tea Roses require will do very well indeed for Camellias. In one place the natural soil being very heavy, holes were dug out according to the size of the plants, some drainage put in and filled up with good compost. These plants did very well, and as they get larger it is easy to add fresh compost by taking away more of the natural soil. The most profitable kind is still the old double white. It is almost the only one that will be grown for the London markets, though *Lady Hume's Blush* is very early. J. C. B.

Vriesia Mariæ.—It is difficult to understand why Bromeliaceous plants are so neglected in this country, as many of them are most beautiful, and great favourites with our neighbours across the channel. One of the prettiest and most interesting plants shown at Chiswick during the recent *Chrysanthemum* conference was a hybrid *Vriesia*, exhibited by M. Truffaut, of Versailles, by whom it was raised. This hybrid, to which was given the name of *Vriesia Mariæ*, resulted from intercrossing *V. Barilletii* and *V. brachystachys*. The last mentioned is a low-growing species with a flower-scape less than a foot high, on the upper part of which is produced the bright scarlet and yellow inflorescence, arranged in two opposite rows. A great merit possessed by this species is that it will commence to flower about the beginning of the winter, and retain its freshness for at least three months. The new hybrid would appear to possess the same character, as the plants shown were just expanding their earliest blossoms. *V. Mariæ* is altogether a larger growing plant than *V. brachystachys*, while the leaves bear a certain resemblance to those of its other parent. The flower-

scape is sturdy, while the bracts are bright crimson at the base, and the remainder rich green, shot with gold and thickly spotted with brownish crimson.—H. P.

WORK IN PLANT HOUSES.

LUCULIA GRATISSIMA.—No garden, where a position in a suitable house can be found for planting out this fine autumn bloomer, should be without it. The agreeable fragrance of the flowers, combined with their delicate pinky white tint and distinct appearance, render the plant one of the most useful amongst the things that bloom in the autumn. It is a somewhat slow grower in the early stages, unless it is pushed on for about two years continuously both summer and winter in a moderate temperature. This applies both to plants that are raised from cuttings and to those that are grown from seed. If young examples that were struck during the past spring, or raised from seed sown then, are let to remain in a cool greenhouse through the winter, they will not only have made little progress when the spring comes round, but they will also be slow in starting into growth. They will bear a temperature of 50° in the night with a proportionate rise in the daytime. This will keep the tops gently moving, and, what is of more importance, will cause a marked increase in the vigour of the roots. It is a mistake to turn the plants out in beds or borders whilst they are small, as is sometimes done, for two reasons, first, they have not enough roots to enable them to take hold of the soil at once in the way that is desirable, and in the second place, when planted before some size has been attained, they are generally too far from the glass to admit of enough light reaching them. In the case of established plants that have reached a size that enables them to flower well, the time of blooming varies considerably in accordance with the more or less warmth they are subjected to. Immediately the flowering is over, whatever cutting in is required should be done then.

LILIES.—Plants of the different kinds of Lily that have flowered during the autumn should at once be repotted. It is necessary in all cases to repot before root action begins. Inattention to this has been the cause of more failures with established bulbs than all other kinds of bad treatment put together. Moderately light turfy loam, with about a fifth part of well rotted leaf mould or an equal proportion of peat, some finely sifted rotten manure and sand, form a compost in which most Lilies will grow well. It is a great mistake to allow Lilies, even of the kinds that are the easiest to grow, to remain year after year in the same pots, with only a renewal of the tops of the balls. This, no doubt, assists the following season's growth to some extent, but to a much less degree than all new soil. So long as there are not more bulbs than the soil can support it is not well to separate them, nor to remove quite the whole of the soil that adheres to them, but when the masses of bulbs get too large they should be divided in half or wholly separated. Shallow potting, that is, keeping the bulbs too near the surface of the ball, should be avoided, especially in the case of the kinds that are most inclined to produce roots on the young stems just above the bulbs. After potting care must be taken that the pots are stood where the soil will not get too much water. Until the time arrives when the tops appear above the surface, the soil should be kept in a fairly moist state. If the material ever gets wet or at all soddened, the chances are that the roots perish more or less. Any loss in this way cannot be made good by Lilies and other bulbs in the manner that occurs with some plants. If the pots can be stood on a slightly moist bottom, such as the border of a Peach house, or viney, or the earthen floor of a cold pit, where enough fire heat or sufficient covering can be used to keep out frost, it will not be necessary to water often during the winter.

LILIES—NEWLY-IMPORTED BULBS.—The great increase in the quantities of Lilies that are imported each succeeding year is sufficient evidence of their increasing popularity. If for no other reason than

the chance of getting some of the splendid forms of *L. auratum* and *L. speciosum rubrum* that now and then make their appearance, it is no wonder that those who have the requisite skill to grow them satisfactorily keep on adding to their stock. Unfortunately, the bulbs of *L. auratum* do not come to hand now in a state such as the first importations were in. The earlier in the autumn the bulbs are obtained and potted the better chance they have of doing well, that is, supposing the early autumn importations have been allowed to remain long enough in the ground to fully mature their growth. In potting imported Lilies the soil should be used in a somewhat drier state than is required for established bulbs, as in their more or less over-dry condition they are likely to suffer if brought in contact with material that contains too much moisture. Over-potting should be studiously avoided. Mistakes in this direction have caused the loss of quantities of this Lily.

LILIES FOR FORCING.—Bulbs of *L. Harrisii* and *L. eximium* intended to come in in succession towards spring after the earlier potted roots have done flowering should now be put in. So accommodating are the different forms of *L. longiflorum*, of which the two named are the best, that with a sufficient number an unbroken succession of flowers might be kept up for nearly the whole year if such was desirable, which is questionable. A change in matters of this kind, as in other things, is the best course to strive at. In the case of these Lilies it is also better not to use pots larger than is necessary; 7-inch or 8-inch pots are big enough for three bulbs. By growing them in this way they occupy less room than if put singly in smaller pots, and less time is occupied in watering. Keep them anywhere under glass where they will be quite cool and out of the reach of frost. As soon as the tops are seen above the soil the plants must be stood where they will be exposed to the full light. Bulbs of *L. Harrisii* that were potted early enough to have made considerable top growth may have a little heat so as to help them on gradually, but they must not be subjected to much warmth until the flowers are seen. Strong bulbs that were forced last winter, and after flowering were carefully attended to, will now have made another growth, and if not already in bloom may shortly be expected to flower. Nothing more than a moderately warm greenhouse temperature is required to induce the plants to open their flowers.

LILIUM CANDIDUM.—Where this fine old-fashioned Lily was potted as soon as the stems had died down it will have made its leaves at the ordinary time, and the flower-stems will shortly begin to move. The plants must be kept quite cool through the early part of the winter, and until the flowers are perceptible within the leaves at the extremities of the stems. Until they have reached this stage it is not safe to subject them to heat. On this account this Lily is not adapted for forcing, though it is sometimes so treated with more or less success, but as often as otherwise forcing ends in failure.

STOVE—BOUVARDIAS.—Even where sufficient stock of these ever-blooming subjects already exists, it is well to each year propagate some young ones to take the place of any that get old, or that get too large for the available space. Cuttings produced in the ordinary way by plants that have been growing for any length of time do not root satisfactorily, on which account root-cuttings were for a long time mostly used. But a better, because more expeditious, plan is now followed. A plant of each variety that is to be increased should now be dried off completely, withholding water so as to cause the leaves to shrivel and fall off. After this, all the soft, immature points of the shoots should be cut away; then soak the roots thoroughly and put the plants in a brisk growing temperature. This will cause most of the eyes to break. In a few weeks afterwards the young shoots will be an inch or two long, when, if taken off and treated in the usual way, they will strike as readily as *Fuchsias*. By commencing in the way described and at once, and following up the course specified, the cuttings will be struck by the beginning of February. This gives the plants a chance of attaining sufficient size before autumn to enable them to yield double

the quantity of flowers that spring-struck stock is capable of.

BOUVARDIAS—FLOWERING STOCK.—The plants that are now blooming should have a sufficiently warm temperature to keep the advancing flowers moving freely. Where they are in pots and the soil is full of roots, assistance in the shape of manure water or surface dressings of some concentrated stimulant should be given regularly.

BOUVARDIAS FOR SUCCESSIONAL BLOOMING.—Plants that are wanted to give a supply of flowers in the spring after those that are brought on in winter become more or less exhausted are often, in the endeavour to keep them from blooming before they are required, kept cooler than is good for them, so that when the time comes that they are wanted to bloom the flowers come weak and poor; whereas, if they get a temperature of 50°, they will move slowly, and be in a condition to bloom well when more heat is given them. See that all the stock is kept free from insects, especially mealy bug, which soon increases. T. B.

BOOKS.

HANDBOOK OF THE BROMELIACEÆ.*

MR. BAKER, of Kew, is distinguished among botanists by his great knowledge of cultivated garden plants and the sympathy he has always shown with horticulture. His publications, which are very numerous, are mostly of considerable value horticulturally, and should be in every good garden library. Amongst his most recent books we may note the following:—

In 1887 he gave us a handbook of Fern allies, which is a sequel to the standard work on the great Fern order by Sir W. Hooker and himself. In 1888 he published his handbook of the *Amarylloideæ*, the outcome of twenty-three years' notes and observations among the plants belonging to this great order. Since Herbert's book on *Amarylloids* we have had no work which will compare with this handbook by Mr. Baker. It contains descriptions of every known species of the various genera from *Narcissus* to *Agave* and *Fourcroya*, and includes *Hippeastrum*, *Hæmanthus*, *Crinum*, *Amaryllois*, *Nerine*, *Pancratium*, *Eucharis*, *Alstroemeria*, *Bomarea*, &c. The descriptions are in English, and not so crowded with abstruse technicalities as most botanical writings are. The "Handbook of Bromeliaceæ" just published is uniform with those on Fern allies and *Amarylloids*; and Mr. Baker promises in the preface a similar handbook of *Iridææ*. The other allied order *Liliaceæ* has been exhaustively dealt with by the same author in the *Journal of the Linnean Society*.

The late Professor E. Morren, of Liege, was considered the first authority on Bromeliads, but he died in 1885, and the bulk of his living collection of plants with his drawings and notes was soon afterwards acquired for Kew. That some key to a knowledge of the Bromeliads was needed was evident to anyone who had to do with the plants. In gardens they go by all sorts of erratic names. Mr. Baker's book will clear away all confusion of this kind. May we also hope that it will lead to the popularity of these plants in England? It is difficult to understand how such plants as many of the *Tillandsias*, *Billbergias*, *Echmeas*, and *Pitcairneas* should be almost totally unrecognised in English gardens. The plants are as beautiful in form and colour as they are singular, and they are, as a rule, amongst the easiest of plants to manage. They grow freely, flower profusely, and multiply rapidly. Although they are not in fashion in England, in Belgium, France, Germany and Italy it is otherwise, for there the Bromeliads occupy almost as prominent a position as Orchids do here.

Mr. Baker's handbook contains descriptions of above 800 species, and this number, great as it appears, is no doubt far short of what will ultimately

* "Handbook of the Bromeliaceæ." By J. G. Baker, F.R.S., F.L.S. Published by G. Bell and Sons, York Street, Covent Garden.

be found. Mons. Edouard André has only lately added sixty new species from his own gatherings in New Grenada and Ecuador.

In the classification of the genera Mr. Baker divides them into three tribes, and these include 31 genera. Many of these are not, of course, of any horticultural interest. Taking those, however, which are more or less represented in gardens, we find 128 species of *Echmea*, 36 species of *Billbergia*, 130 species of *Pitcairnia*, 34 species of *Dyckia*, 39 species of *Caraguata*, and 323 species of *Tillandsia* described. The only garden where an idea can be got of the character and beauty of the plants themselves is at Kew, where there is a rich collection of species, numbering altogether about 220.

Some of these are in flower at all times of the year. If some wealthy amateur could be induced to devote himself to Bromeliads, as many have done to Orchids, or as the late Mr. Peacock did to succulent plants, the popularity of the order would probably be assured. People do not know these plants. Fashion rules in horticulture as in all other matters where fashion has any influence at all.

W.

ROSE GARDEN.

PLANTING AND ARRANGING ROSES.

ORDER early and plant early is the best advice that can be given to those who intend planting Roses during the coming season. Roses may be successfully planted at any time from November to May; but of all months I prefer November. By giving orders early the best plants may always be had; and for this reason alone, if the site for the Roses is not ready, it is well to order early and obtain good plants, for they can be carefully laid in until the spot where they are to go is ready to receive them. Give preference to plants upon the Brier stock, for although there are some Hybrid Perpetual Roses which thrive upon the Manetti, it is always a doubtful stock. For my part I always avoid it, and plant only dwarf Roses worked upon the Brier, which, without a doubt, is the best of all stocks, and, as regards the Teas, the only one upon which they will really do satisfactorily. Probably in the near future we shall hear still less of the stock question, for own-root Roses are no longer a dream. It has been found that many kinds succeed perfectly upon their own roots, and as the demand for them is increasing, nurserymen are now making it their business to supply them. It takes longer to obtain a saleable stock of own-root Roses, but in the end they are the most reliable, because, if an exceptionally severe winter should kill all that is above ground, they would shoot up from below like an herbaceous plant. Budding is a more expeditious process, and serves the nurseryman's purpose best in enabling him to work up stock of kinds rapidly—a very desirable thing in the case of new kinds, which otherwise would long remain rare if propagated by slower methods. But, now, with many of the best kinds of Roses, budding should only be a means to an end; for, if we buy a budded plant, when planting it a little notch may be cut at the junction of Rose and stock, and if the point of union between the two is buried 2 inches in the soil, roots will in all probability be emitted. I know that many I have treated in this way have now a considerable own-root capacity. Some that I had occasion to lift had in one season rooted so freely that I cut the entire stock away, and divided each bush into three pieces, each piece having some good fibrous roots attached. Moreover, we have now learned the best time and way of striking Roses, so that anyone who possesses good kinds should be able to work up a stock of own-root plants for himself.

By choosing every favourable opportunity, planting may be got through early, and the great advantage arising from this is that, even in the dead of winter, the newly-planted Rose is putting forth little white roots, and by the time atmospheric warmth excites the buds into action the roots at once respond, and a free, healthy growth com-

mences, continues, and soon results in a crop of fine flowers.

Simultaneously with planting, the best mode of arranging the Roses must be considered. Assuming, of course, that there are several plants of a kind, the best plan always is to group or mass them in some bold, but informal way. With large beds of a simple form it is possible to group Roses in a very artistic way, and they never look better than when so arranged; for it is obvious that twelve plants of some good Rose, boldly grouped, will be much more effective than would the same number of plants indiscriminately mixed with a lot of other kinds. Moreover, having made a good group we can stop and make another in some other part of the bed; and thus between the groups of Roses we obtain little spots where we can place Pansies, Carnations, or choice hardy plants that are good in foliage as well as flower, and last the whole season through. There are many hardy plants equal to this. The Rose is rightly called the queen of flowers, and it should play the most important part in our flower garden arrangements, for so great is the variety scattered through many sections that kinds may be had for every use that could possibly be required of them. We should not look for designs, but a garden of fine flowers where Roses abound from early June till late October. Probably all dwarf Roses are amenable to a bold system of arrangement by grouping, but it might guide intending planters to give a selection. First I will take the Teas, as these in open sunny beds are the sweetest, best and most perpetual flowering Roses, they always look fresh and beautiful. Twelve good kinds would include Marie Van Houtte, Anna Ollivier, Souvenir d'un Ami, Souvenir d'Elise Vardon, Perle des Jardins, Jean Pernet, Mme. Lambard, Jules Finger, Francisca Kruger, Catherine Mermet, Edith Gifford, and Mme. de Watteville. Grace Darling and Viscountess Folkestone are not true Teas, but both are good garden Roses, free-flowering, and very effective in groups. Among Hybrid Perpetuals such kinds as Duke of Edinburgh, Merveille de Lyon, Ulrich Brunner, Violette Bouyer, Dupuy Jamain, Pride of Waltham, Star of Waltham, Alfred Colomb, Anna de Diesbach, General Jacqueminot, and, in fact, all the best may be grouped, whilst La France, Souvenir de la Malmaison, and many of the finer monthlies have a beauty which can only be fully realised by seeing these kinds in bold, telling masses.—A. Z., in *Field*.

Rosa rugosa under trees.—I bought a number of plants of the above when it was recommended as a plant that would grow everywhere and furnish an abundance of hips as pheasant food in the autumn. The bulk of them were planted under Beech trees, and as indicating how very unsuitable this Rose is for this position, I may say that the plants have existed, but hardly grown at all for two years, while the fruit they have produced is not worth speaking of.—J. MUIR.

Maréchal Niel Rose.—When at a garden the other day where pot Roses are largely grown, I noticed some plants of Maréchal Niel in large pots tacked up to a wall ready to house when the proper time arrived. These were to be trained up to the roof in due course. But there was the fact so apparently common in relation to this fine climbing Rose, that the first main strong shoot having bloomed last spring had now become the main stem, supporting a number of thin pipy laterals, and I wondered how wood of that poor kind is to produce fine blooms. It is true that no other Rose, perhaps, does carry such very fine flowers relatively on small shoots as the Maréchal, but still such blooms must be small as compared with what stout young wood will produce. Had the gardener in this case but been courageous enough to have cut his plants hard back as soon as they had flowered last spring, fed them well with liquid manure, and given all needful encouragement, he might have been now favoured with rods 10 feet long and qualified to produce a grand lot of flowers next season. Maréchal Niel differs so much from many other Roses which do well in pots that it requires very hard pruning and good feeding. Unless the wood be stout and young, it is worth little. We want the plants pruned pretty

much on the old long-rod system, taking up new stout growths every year and cutting away the old rods as soon as they have done blooming. In a house Maréchal Niel is practically an evergreen; in fact, it seems never to cease growing. That habit wants encouraging because it enables shoots made late to develop growth for a long season, and wood which outdoors would be destroyed by frost remains robust and produces fine blooms at the proper season, even in a cool house. Worked on free-growing stocks and in strong well-fed soil, Maréchal Niel will produce wonderful shoots if kept hard pruned.—A. D.

Briers for budding.—It is generally acknowledged amongst practical rosarians that Briers planted after Christmas are not so satisfactory as those planted earlier. This being so, those who intend to plant Briers should do so as early as they can after the beginning of November. It is a mistake to suppose that Briers will make good growth in a poor soil. Those who wish for the best results are careful to dig the soil at least a spit deep, and to add manure in liberal quantities where it is required. In positions where the stocks are much exposed to rough wind, I like to place a mulch of long litter over the roots, this preventing both frost and water from settling about the stem. If it is not convenient to mulch the ground, the cultivator should be careful to fill in the holes caused by the wind rocking the stocks to and fro.—J. C. C.

GARDEN FLORA.

PLATE 728.

PERENNIAL ARCTOTISES.

(WITH A COLOURED PLATE OF *A. ACAULIS*.)

THE genus *Arctotis* belongs to a small group of Compositæ, chiefly natives of the Cape. Most of them are full of interest and all beautiful. Amongst these may be noted the *Venidium*, annual plants of great beauty, the most notable perhaps being the old and well-known *V. fugax* (*V. calendulaceum* of gardens). Nearly allied to the *Venidium* are the *Sphenogynes*, *Gazania*, *Haplocarphas*, of which the best known is *H. Leichtlini*, the old garden name of which is *Gorteria acaulis*, and many others not so well known, but none the less beautiful. The *Arctotises*, like many more handsome Cape genera, seem to be little known in gardens, and out of something like thirty distinct kinds we have not more than half a dozen at present in cultivation. There seems to have been more species in cultivation during the last century, as the thirteen figured by Jacquin were presumably in cultivation in the Vienna Botanic Garden. Sixteen are described in the "*Hortus Kewensis*," 1813, as being in cultivation, but if so, no traces are left at the present time. At plate 6835 of the *Botanical Magazine* the following words appear: "It is very undesirable to multiply names, and all the more in this case (referring to *A. aureola*) because the genus is not, and never will be an established one in the gardens of this country, the plants not being long-lived, and requiring exceptional conditions for their full development out of doors." If many of the thirty species described are of a shrubby character like *A. aspera*, *aureola*, and others, there is no reason whatever why they should not become established in our gardens and be grown on from year to year in the same way as we manage our bedding *Geraniums*. As bed or border subjects some of the species are certainly as beautiful as the *Geranium*, and infinitely more interesting, and the ease with which they may be managed together with their handsome flowers should make them general favourites.

* Drawn for THE GARDEN by H. G. Moon in the Royal Gardens, Kew, July 19, 1889. Lithographed and printed by Guillaume Severeys.



Their being natives of the Cape deters many who appreciate plants like the *Arctotis* from trying them. They can be wintered with half the trouble given to *Geraniums*, strike from cuttings quite as readily, and do not require to be deluged with water if we happen to have an exceptionally dry summer. Although *Arctotises* will do fairly well in any position, one with full exposure to the sun should be chosen; the drier it is the better the plants will bloom and the dwarfer they will grow. Those probably in cultivation and not noted below are *A. reptans*, *A. argentea*, and *A. rosea*.

A. ACAULIS, as may be seen by the accompanying coloured illustration, is an exceedingly pretty little species from the Cape of Good Hope, and is of a dwarf, free-flowering habit. *A. acaulis* seems to be a variable species, as no less three figures in Jacquin's "*Hortus Schoenbrunnensis*," t. 159, 160, 161, are referred to this species, and our present form does not quite agree with any of the figures we have yet seen. It is said to have been introduced about 1759, but was lost to cultivation until re-introduced through the Royal Gardens, Kew, a few years ago under the above name, and distributed, we believe, as *A. undulata* of Jacq., l.c., tab. 160. Of the few at present in cultivation this, in our opinion, is by far the best for rockeries at any rate, its dwarf habit and profusion of bright orange-coloured flowers making a very attractive group. Although not hardy it stands a considerable amount of cold, and may be safely wintered in a dry, cold frame, watering it sparingly, if at all, until it begins to grow again in spring. As its name implies, it is stemless; the leaves, produced from a thick root-stock, are variable in shape, but usually with long stalks, oblong in shape, bright green, hairy above and woolly underneath. The plant begins to bloom early in April, and keeps on flowering until autumn. It does not ripen seeds very freely, but the side growths, if taken off carefully with a heel, may be struck readily under a bell-glass. To get perfect blooms the plants should be grown in a dry sunny spot on the rockery. The old specimens, if lifted before the frost comes, will continue blooming in a warm greenhouse. The drawing in the *Botanical Magazine*, t. 2182, was made from a plant flowered by Mr. Jenkins, New Road. It is also figured as *A. scapigera* in *Botanical Register*, t. 122, and in Jacquin's, l.c., as *A. tricolor*, with white and orange rays. *A. undulata* and *A. speciosa* are synonyms.

A. AUREOLA, a coloured plate of which appeared in THE GARDEN, October, 14, 1882, is a very handsome shrubby species, now referred to *A. grandiflora*. At present there are two distinct kinds in cultivation, *A. aureola* and *A. speciosa*. In the former the flowers are deep rich orange, and in the latter yellow. This species seems to be in a state of utter confusion. *A. aureola* seems to have been described by Gaertn as *A. undulata*, while De Candolle makes it a distinct variety of *aspera* under the name *A. aspera* var. *aureola*. In this view he is followed by Harvey in the "*Cape Flora*," who, however, takes *undulata* as the varietal name, and puts *A. cuprea* as a synonym. It usually grows from 1 foot to 2 feet in height, shrubby, and somewhat straggling in habit, and produces its large, orange flowers towards the points of the branches. In beds or mixed borders where it can get plenty of space this species makes a very handsome group during the summer. The warmest and sunniest spots should be chosen, and if dry so much the better. It will continue flowering all through the summer and autumn. It is not hardy, but cuttings are so readily rooted that there need be no fear of keeping up the stock. The cuttings should be taken off about the end of August, when they will root freely if placed in a cold frame. *A. speciosa* requires much the same treatment, but it is not such an ornamental plant as *A. aureola*. For corridors and conservatories they make charming pot plants, flowering quite late in autumn. Both are natives of the Cape.

A. ASPERA VAR. *ARBORESCENS*.—This species (here illustrated) is apparently very variable, and

made to include a great many forms, the above variety being the only one known to us in cultivation. It is said to have been in English gardens previous to 1710, but appears to have been known in Holland much earlier. It is described in Comely's "*Hortus Medicus Amstelodamensis*," published in 1697, and is one of five varieties of *A. aspera* described or enumerated by De Candolle. The variety *arborescens* is distinguished by the under surface of the leaves being white, and the flowers white on the inner surface, with a yellow band at the base, and pink or brownish on the outer side. It has a more straggling habit than either *A. aureola* or *A. speciosa*, and may be used for the same purpose out of doors during summer. This variety is, perhaps, most useful as a greenhouse subject, producing its flowers in abundance throughout late winter and spring, and if properly managed it would not be difficult to have blooms all the year round. As a pot plant, it would be



Arctotis aspera arborescens.

difficult to manage in a confined space. It may, however, be cut back or trained a little. Native of the Cape. D. K.

FRUIT GARDEN.

SELECTION AND ARRANGEMENT OF WALL FRUIT TREES.

I SHALL be glad of some advice through the pages of THE GARDEN as to the arrangement of fruit trees on walls. The garden, very much exposed to the wind, and 900 feet above sea level, is rectangular and entirely surrounded by walls. Two of the walls are each 300 feet long, the other two 450 feet long each. The soil is sandy loam, about 18 inches deep, the sub-soil of a sticky nature and very stony. It has been trenched to a depth of 18 inches and plenty of decayed turves mixed with it. I want to grow Peaches, Nectarines, Apricots, Cherries, Plums, Pears, Currants, and Gooseberries. As we have projecting piers on the walls, and which I wish to make somewhat ornamental, I should be glad to know what would be the most suitable flowering climbers on the different aspects. Kindly give a list of the best sorts of each, and what are the best stocks for the Apples and Pears?—X. Y. Z.

It is by no means difficult to make a selection of the best varieties of the different fruits for a garden of three to four acres, but when it is borne in mind that the garden in question is 900 feet above sea level and much exposed to wind, their arrangement to a certain extent must involve a leap in the dark by the adviser, who is a perfect stranger to the locality. The garden, a rectangle, 300 feet

by 450 feet, presents two walls facing each of the four aspects, but whether the longest lines face north and south, and the shortest east and west, the supplementary information now before me does not reveal; consequently, I will take it for granted that the ground has been judiciously laid out, and the greatest length is from east to west, the width from north to south. Shelter from north and east, again, a most important point, I will assume, has been provided not only by a good fence enclosing what is termed a slip, but also by a plantation of fast-growing Conifers and evergreen trees just far enough away to preclude the possibility of shade from the tops or filching by the roots. These conditions secured, the climate being fairly good and the preparation of the borders satisfactory, any of the leading choice varieties should succeed, as the garden must stand well above the line of fog and frost. As nothing is said about glass structures, which in gardens of these pretensions generally lean against one of the best walls, whilst the opposite aspect is occupied by sheds, fruit rooms, and other necessary buildings, I must assume that the whole of the 1500 feet of wall is to be planted with fruit trees. This being so, taking the inside south wall first and commencing in the north-east corner, I would start with three Fig trees, viz., Brown Turkey, Negro Largo, and Brunswick; then follow on with dwarf trained Peach trees selected from the following: A Bec, Alexander, Alexandra Noblesse, Barrington, Bellegarde, Crimson Galande, Dymond, Early Grosse Mignonne, Old Grosse Mignonne, Hale's Early, Old Noblesse, Prince of Wales, Raymackers, Royal George, Sea Eagle, Stirling Castle, Violette Hative, Walburton Late Admirable. If the walls are sufficiently lofty, give preference to trees on stems 2 feet in height, as they are hardier than dwarfs and less subject to gumming. If the whole of this wall is too extensive for Peaches, finish out with Nectarines, including Lord Napier, Advance, Elruge, Humboldt, Pitmaston Orange, Rivers' Early Orange, Stanwick Elruge, Violette Hative, Hardwicke Seedling, Pine-apple, and if the situation is extra good, add one tree each of Prince of Wales and Victoria.

THE WEST INSIDE WALL, shaded from early morning sun, offers a favourable site for dessert Cherries and late Apricots. Of the first plant a selection from the following: Belle d'Orleans, Bigarreau Napoleon, Black Eagle, Black Tartarian, Early Red Bigarreau, Elton, Frogmore Bigarreau, Governor Wood, May Duke, Reine Hortense. Moorpark and Powell's Late Apricots for succeeding those to be recommended for a south aspect.

THE EAST INSIDE WALL may be planted entirely with Plums, including Coe's Golden Drop, Denniston's Superb, Green Gage, McLaughlin's Green Gage, July Green Gage, Jefferson, Kirke's, Transparent Gage, Reine Claude de Bavay, Late Rivers', The Czar, The Sultan, De Montford, Angelina Burdett. These, of course, will be supplemented by pyramids and bushes, which may include any of the following, as well as some of the hardiest of those already mentioned, and bearing in mind that dessert sorts are the best for culinary purposes, inferior varieties should be excluded: Belgian Purple, Diamond, Rivers' Early Favourite, Rivers' Early Prolific, Golden Esperen, Grand Duke, Huling's Superb, Prince Englebert, Victoria, Washington, Pond's Seedling, White Magnum Bonum.

THE NORTH INSIDE WALLS.—One half of this at least may be furnished with Morello Cherries, the remainder with hardy dessert Pears, including Williams' Bon Chrétien, Louise Bonne of Jersey, Thompson's, Seckel, and other varieties which do well as standards in the locality.

THE NORTH OUTSIDE WALL should be devoted to hardy Plums, including Victoria, Prince of Wales, Prince Englebert, Belgian Purple, and, the locality being good, a tree or two of Golden Drop for a late succession. The hardy Pears, too, may be repeated, also the Elton, May Duke, and Bigarreau Napoleon Cherries, and certainly a good breadth should be given to the finest large late Red and White Currants, and possibly a few of the latest Gooseberries, including the Warrington. Raby Castle is one of the best Red Currants for

walls; Warner's Grape, Mammoth, and Knight's Large Red, too, are good. Of white varieties the Dutch is the sweetest, the cut-leaved Dutch the largest.

THE EAST OUTSIDE WALL is well suited for choice cordon Apples, of which lists have been given over and over again in the pages of THE GARDEN; therefore, this paper being already too long, although quite willing, I must refrain from repeating. Turning the corner, we come in front of the

SOUTH OUTSIDE WALL, equally adapted to Apricots, Peaches, and Nectarines, and the very best Pears. The first I am reserving for the west aspect, the second have been disposed of on the internal south wall, so this must be given to the choice autumn and winter Pears. The selection made by the editor of THE GARDEN includes Beurré Superfin, Marie Louise, Doyenné du Comice, Winter Nelis, Josephine de Malines, Emile d'Heyst, Thompson's, Glou Morceau, Bergamote d'Esperen, Alexandre Lambre, Nouvelle Fulvie, Olivier de Serres, and Comte de Lamy for walls; but as these barely exhaust the cream, I may venture to give a supplementary list of another dozen of buttery varieties. These are Beurré d'Amanlis, B. d'Anjou, B. d'Aremberg, B. de l'Assomption, B. de Jonghe, Easter Beurré, Hacon's Incomparable, Jargonelle, Louise Bonne of Jersey, Marie Benoist, Knight's Monarch, Pitmaston Duchess. As the most of these do well on the Quince stock they may be grown as cordons, a popular mode by which walls are quickly covered with the finest of fruit, or, the wall being supported by pillars or buttresses, trees of the leading kinds on the free stock may be planted in the openings, and cordons may be used as supernumeraries. Trees on the free stock should be fan or horizontal trained; cordons on the Quince can be moved in safety at any age as space is required. Of early Pears such sorts as Citron des Carmes, Beurré Giffard, Seckel, Fertility, and Clapp's Favourite, of course, will be grown for giving a few dishes in August and September. The best stewing Pears are Catillac and Bellissime d'Hiver, whilst many of the finest varieties which do not always melt like choice dessert Apples are very useful for cooking.

THE OUTSIDE WEST WALL may be planted with Moorpark, Peach, Large Early, and Hemskirk Apricots, Green Gages of sorts and Jargonelle Pears. Of Gooseberries the names are legion; consequently one-tenth of the varieties will be found ample for any garden. The following may be equalled, but they cannot be beaten. *Red*—Clayton, Crown Bob, Dan's Mistake, London, Speedwell, Talfourd, Rifleman, Overall, Rough Red, Roaring Lion, Slaughterman. *Yellow*—California, Catherina, Leveiler, Mount Pleasant, Trumpeter, Broom Girl, Conquering Hero, Golden Champagne, Early Sulphur. *Green*—General, Lofty, Matchless, Thumper, Green London, Surprise, Telegraph, Glenton Green. *White*—Antagonist, Bright Venus, Careless, Freedom, King of Trumps, Lady Leicester, Monster, Snowdrop, Whitesmith, White Champagne, Snowball. *Very choice dessert*—Ironmonger, Keen's Seedling, Pitmaston Green Gage, Red Champagne, Red Warrington.

STOCKS—With the exception of Pears and dessert Cherries, the planter will do well to leave the matter entirely in the hands of the nurseryman, who knows best what to use for the different varieties herein mentioned. The garden in question seems well adapted for Pears on the Quince or free stock, provided the trees on the latter are lifted once or twice when they are young. Dessert Cherries come quickest into bearing and often defy disease, especially gumming, when worked on the Mahaleb.

CLIMBERS FOR THE PIERS.—A great number of climbers are well adapted for this purpose; but all is not gold that glitters, as many of them are subject to green fly and red spider, two undesirable occupants of fruit walls. The roots, again, of some are gross feeders, and soon become silent and unseen robbers, carrying off the food and moisture which should go to the nutriment of the fruit trees. This, of course, can be prevented by constant vigilance, or by forming square brick pits at the base of each of the piers. The hardest of the climbing Tea

and Noisette Roses are useful and ornamental, provided they can be kept free from green fly. The best of the Clematises are beautiful in summer, but bare of foliage in winter. The common white Jessamine, Passiflora cærulea and P. Constance Elliott, Lonicera flexuosa, Bignonia grandiflora, and Wistaria sinensis are free growers. The Ceanothuses do well on south and west aspects. Cratægus Pyracantha and Pyrus japonica on north and east, also Cotoneaster microphylla. Vines, again, either the Grape-bearing or the ornamental-leaved, are most graceful in summer, and so are the forms of Ampelopsis, especially A. Veitchi, A. japonica, or Rhus Toxicodendron, and a host of other things, but I do not approve of this mode of mixing fruits and flowers when choice cordons look equally well and are more profitable.—W. C.

DEEP TRENCHING FOR FRUIT TREES.

AT p. 388 "D. T. F." calls attention to the question of deep trenching for fruit trees, and doubts whether it is absolutely necessary to have soil several feet deep to ensure the growth of trees to fair proportions, and asks why, if forest trees of various kinds are planted on soils that are too shallow even for Corn or pasture and yet attain goodly proportions, we should not grow fruit trees of various kinds without the costly work of trenching. Without giving an opinion as to the advisability of planting on very shallow soils, I am quite satisfied that a good deal of the fuss and expense in preparing sites for orchards is quite unnecessary, and in many cases does more harm than good. There is no lack of really good soil in the country that is paying but very little to the owners for agricultural purposes and that would be suitable for planting fruit trees by merely digging out good sized holes and loosening the subsoil well where the tree is to be planted. Many would do this who are now deterred by the notion that such a large sum is needed to trench the land all over before planting can be done. Trenching or pulverising land that is already too light for fruit trees can of itself do little good, and manure when it is necessary is decidedly far best applied on the surface or only lightly forked in, and for orchards planted at wide intervals there can be little doubt but that before the roots occupy one half of it the soil has got down just as firm as ever, and all the trenching that can be done will not make soil, and especially subsoil that is unsuitable, grow good healthy fruit trees. If this trenching was necessary one would expect to find it in the stiff deep soils of Kent, but there many of the best plantations I know have been planted without any trenching, merely taking out good-sized holes between the rows of Hops, where from frequent trampling the land had become so hard that it was difficult to get fork or spade into it, yet the trees grew away very strongly and bore very freely. Now that dwarf trees are getting more in favour there is no reason why shallower soils should not be utilised, as these little trees may be grown most successfully by the aid of mulchings and top-dressing. It is after the trees are ten years old and upwards that manurial dressings are so much needed, as the soil in the immediate vicinity of the tree has by that time become exhausted, and the tree really needs feeding to keep the fruit up to the highest excellence. I feel sure that if some of the superabundant labour and manure that are employed at planting time were reserved for a few years and applied to the trees when they begin to feel the strain of heavy crops far better results would follow, and, above all, one can by that time take note of which trees need stimulants and which need checking to ensure fertility, for although all may be planted and treated alike they will not all grow with equal vigour. There are many things that check the revival of fruit culture over which we at present can have no control, and the sooner all who are interested in the question make it clear that such excessive outlay is not needed the better for all concerned. I am well aware of the good old maxim, "That what is worth doing at all is worth doing well," but in this case it is impossible to put

into the soil a store of food to last the trees for a generation, for it can be done far better in after years when the trees really require it.

Gosport.

JAMES GROOM.

PEARS.

ALTHOUGH the admirable paper read by Mr. Wildsmith on Pears at the Drill Hall on the 22nd ult. was practically confiscated by the Royal Horticultural Society for the benefit of its journal, yet there is nothing whatever existing to prevent the gist of the paper being given to the public through THE GARDEN, and doubtless a *résumé* would be more useful than the paper in full. No one will be more ready than Mr. Wildsmith to admit that it is very hard to say anything fresh about Pears, and in the paper referred to no attempt was made to introduce novel matter. Generally, it was an outline of the course of culture so successfully pursued at Heckfield in relation to Pears, whilst it specially showed how it was possible to overcome by cultivation the difficulties which a very light, loose soil presents. That we know now all that cultivators can tell us of the most successful methods of culture, the best sorts for all forms of cultivation, and the best stocks as well as styles of training is certain. We have an exceptionally varied and abundant list of Pears, many kinds of such superb quality that we can hardly hope to find them excelled, and they cover the season fully from early August to Christmas. The weak point in our Pear knowledge is how to preserve our best sorts through the winter, so as to have as good fruits in February and March as we have in October and November. Probably far more Pears are spoiled by becoming unduly mellow, or, in other words, sleepy, than are eaten. Every grower who endeavours to keep his fruits for a considerable period finds that many of the best fruits have to be thrown away because found to be rotten at the core, whilst externally they looked sound. That will not happen with Apples, but it marks Pears more than any other fruits, hence the difficulty, first, in detecting what is sound, and secondly in preserving sound what is found to be good. If we could discover any method by which Pears could be preserved, say, for two months longer than they now can be, a wonderful gain would result. Not only would moderate crops be more fully utilised and made to render more complete service, but the market value of good Pears would also be largely increased. At present, because of the liability of Pears to decay at the core, they present a very unsafe investment. Find some method by which uncertainty as to life in Pears can be made into certainty of considerable duration and the fruits are doubled in value at once. The common rule of preservation is to house Pears on shelves of open lattice work in ordinary fruit rooms. There, so far, they keep fresh, but life is of short duration. Clean straw proves to be a very nice bed for the fruits, whilst a coarse form of the now popular wood wool is better still. But there remains the initial difficulty as to materially increased life. It has been said that Pears and Apples, too, can be kept fresh and sweet a long time if stored in wet Grass, but wet Grass soon heats or rots, or otherwise becomes offensive. It is doubtful whether clean half-dried leaves would not be better. A Pear buried in leaves out under the trees will be found fresh and good long after it has fallen there. A modification of the natural method seems to be the desideratum to aim at. A. D.

Showing orchard house-grown fruit.—I am glad to see that exception has been taken to this, as to show Apples and Pears so grown among others gathered from the open where all are supposed to be so cultivated is very misleading. It would be well, too, if the number of sorts were limited, as we have far too many, and unless something is done to cut them down by those having to do with getting up schedules, we shall never get rid of the bad ones. We have had Apple and Pear congresses, but they have not led to much in abridging the lists, and this is what we want, for numbers of kinds might be left out with

the greatest advantage to all concerned. It ought to be as advantageous to nurserymen to have fewer varieties that they know, or feel sure, will be as satisfactory to their customers as to themselves, and the sales would probably be greater. We have plenty of men sufficiently well versed in Apples and Pears, and for that matter all other fruit, to get up a standard list of sorts that should be grown, and if this is done it will soon be found not to be worth while to have others, and the trade will cease working and sending them out. Why it is that people should want many sorts of any kind of fruit, coming in at the same time and most of them inferior, to the one or two is a mystery; but in fact they do not want them, and most persons who have them would only be too glad if they could change tree for tree, but as they possess them, the trees, in most cases, have to remain. Some regraft, but then think of the loss of time, and it often happens that when they are re-worked, double grafting has not suited the Apple or Pear put on, and again disappointment comes in.—S. D.

PEACH TREES ON WALLS.

USUALLY we defer the detachment of our Peach trees until after Christmas, but slight root-pruning and the thoroughly good season combined having so completely ripened the strongest shoots, I see no reason why all trees in similar condition should not be unnailed, finally pruned and washed before bitter weather comes to paralyse the men's fingers. The work must be done and done well, and the sun having lost its ripening power, the next step is retarding the swelling of the flower-buds. Having so often described my mode of procedure, my remarks will be very brief, but autumn and winter management being so important, I must say a few words to those who are not so successful as they could wish to be. Root-pruning or root-lifting, I may say, completes the Peach year. The next step is the first of a series which must be taken at the right time throughout the coming season. My trees, I may repeat, are pruned immediately after the fruit is gathered, but being full of leaf there is no attempt at perfect dressing; this therefore, as soon as all the shreds and nails are removed, consists in neat paring of rough cuts, the removal of faulty shoots which have been missed, and a general trimming. Light straight rods are then forced into the border a foot from the wall, and made secure beneath the coping. All the old branches are well scrubbed with strong Gishurst, and the young shoots are very carefully washed with tepid soapy water, care being taken that the half-worn paint-brush is drawn from the base to the point as often as may be thought necessary. When the whole of the tree is washed the branches are tied to the rods, and in due course the small shoots are made secure, but not in bundles, as tying several together means shelter and early development of the flower-buds. In this position the trees remain throughout the winter, no matter how severe the weather. The walls meantime are treated to their usual coat of old brick-red wash formed of quicklime, sulphur, soot, and linseed oil or Russian fat, Venetian red being added to give the desired tint, and hot water to reduce to the proper consistence. The wall paths, 5 feet to 6 feet in width, are neatly covered with fresh horse litter, and the trees are left to take care of themselves until the blossom buds show colour, when training with new shreds and nails precedes protection with broad coping boards, and three thicknesses of ordinary fishing net. If insects of any kind, from red spider to the woodlouse, so troublesome when Peaches are ripening, have escaped the wash or the paint, they are too weak to make their presence felt when spring growths are pushing. An early advent in our case, however, never takes place, and it is to this freedom from insects when the trees are in flower and starting their wood buds that I attribute success in getting our earliest growths very forward and in due course properly ripened. Our walls being very old and parti-coloured, a warm pinkish wash improves their appearance, and plied annually fills up the nail holes much better than pointing. Really good walls to which owners may not wish to apply a colouring wash may be treated with very

strong soapsuds, which should be plied with a white-wash brush and thoroughly worked into all crevices and nail holes. Then one or twice through the winter, instead of allowing this cheap and yet valuable insecticide to be thrown away, it may be plied with great force through a syringe or garden engine.

W. C.

WORK IN FRUIT HOUSES.

FRUITING VINES IN POTS.

IF thoroughly ripe and in satisfactory condition, the earliest batch will now be swelling their buds, if not already breaking. If irregular, or the buds at the points are in advance of those near the base, they must be bent down over the fermenting material until the faulty part of each cane forms the highest point or section of an arch, when constant moistening will soon help them forward. When all the buds are thoroughly on the move tie them up to the wires, but defer the removal of superfluous shoots until those carrying the best shows are quite perceptible. Pinch at the first or second leaf beyond the bunch, tie out neatly, and if practised, discontinue direct syringing. Raise the temperature to 60° by night and 70° on fine days, and the better to ensure a circulation of fresh air, aid and soften the heat from the pipes by frequent renovation of the bed, also by night covering, a most important factor in early forcing. I stated at the outset that root-watering must receive the most careful attention, as many pot Vines are ruined by an excess of water before the buds are fully broken, but once these are on the move and young leaves begin to expand, the danger of rotting the roots will be considerably lessened. Damp the walls, floors, and surface of the bed two or three times in the course of the day, fix and keep full the evaporating pans, but defer the use of stimulants until the berries are set and swelling. If free varieties, like the Hamburg and Foster's Seedling, show duplicate clusters, remove the weakest, leaving one only on each shoot, and although they seldom fail, cross-fertilise when they are in flower. Madresfield Court Muscat, one of our best early pot Grapes, and Buckland Sweet-water do not set quite so freely, but if intermixed with the others and all are touched with the same brush, perfect fertilisation will be certain.

THE EARLY VINERY.

When the buds on the permanent Vines commence swelling, the inside borders may be the better for another watering. If young and strong, pure water only, at a temperature of 80° to 90°, may answer best, especially if the border was well top-dressed or mulched before the house was started. Old ones, on the other hand, which cannot easily be overfed will take good warm diluted liquid from the outset, and in the event of their having been overcropped, a thick mulch of short stable manure, whilst throwing off ammonia, will tell favourably on the size and vigour of the clusters. Fermenting material is indispensable, as it softens the atmosphere, economises fuel, and, equally important, puts an end to incessant syringing when days are dark, cold, and unfavourable. To make the best of this it should be turned over at short intervals, when frequent additions will be required to prevent the heat from declining much below 80°. The syringe, as a matter of course, must be used, but it will be applied to the old stems, especially near the pipes, to dry corners (the lurking home of red spider), to the walls, floors, and other surfaces. Here, as in the pot Vine house, young canes being forced for the first time must be kept bent down, with their points touching the border and the lower parts of the wood of the current year forming the crown of an arch; whilst old ones may be secured to the wires from the outset. When well started and all the buds are on the move, the young canes must be tied up to the wires without delay, otherwise the shoots will draw backwards to the light, when, independently of looking unsightly, they will give unnecessary trouble to the trainer. The temperature at this stage may range from 50° to 56° by night and from 60° to 65° through the day, running a few degrees higher under gleams of sunshine, but no advance must be

made by night for the present. Turning to the outside borders, hitherto well covered with dry Oak leaves, Fern, or long litter, the question arises, Will the Vines be benefited by the use of fermenting material? If so, now is the time to apply it. External warmth having been so much abused, many people now say their Vines do better without than with it, and this I can readily believe; but abuse is one thing, judicious use another. In my own management, I always apply rather dry fermenting Oak leaves to the outside borders, particularly to the front, avoiding the use of stable manure, which soon becomes too hot or too cold, sour, and injurious. This body of leaves stands at a temperature of 70° to 80° for some weeks, and, being covered with corrugated sheets, it cools gradually, when it forms a sweet, root-feeding mulch of the greatest value, not only when the Grapes are ripe, but throughout the swelling and colouring stages. When the Grapes are ripe and the sun gains power the sheets are removed, then by degrees a portion of the leaves is taken away, but a layer of 6 inches or more is left on the border until the wood is ripe and the roots are ready for the annual top-dressing.

MIDSEASON VINERIES

may now be pruned, cleansed, and put in thorough working order ready for the start, but they must be kept quite cool and airy to ensure a long and decided rest to the Vines. If plants must have a home in these houses they should be of the hardiest nature, otherwise constant shutting up at night and turning on a little fire-heat when danger is apprehended will have an enervating effect, which will be felt throughout the season. Very few private gardeners fully alive to this fact, I know, can keep their houses entirely idle, but they ease them to the fullest extent possible, certainly until after the turn of the year, when they are obliged to tack about in an opposite direction. When the Vines are pruned and washed they may be dressed with styptic, especially if the danger I have pointed out is anticipated, otherwise they may be tied horizontally along the wires as near as possible to the front ventilators. All root-work, as a matter of course, will have been finished, and the outside borders lightly covered with Fern leaves or litter to keep out frost; consequently the finishing operation will include the removal of inside mulching, pricking up the hard surface, and the application of a thin layer of fresh compost. The roots, as a matter of course, will be quite moist enough, but should autumn watering have been neglected, it will be well to allow them to remain on the dry side for some time after pruning.

LATE HOUSES

in which ripe Grapes are hanging cannot be kept too cool and airy in mild, dry weather. A temperature of 50° is a safe figure for black Grapes, and Muscats may run as high as 55°, the most gentle circulation being turned on when danger from frost or injury from a more subtle enemy, stagnant moisture, is apprehended. The fall of the leaf, of course, is the most trying time, especially in low houses in which the Grapes hang near the surface of the border, but damp in these cases may be counteracted by picking up the leaves each day, by covering the border with a layer of extra dry Fern, by warming the pipes and opening the ventilators on fine days, and keeping the house quite close when the external atmosphere is heavily charged with vapour. Damp, which fosters mould, is the greatest enemy, and this must be kept out at any cost, but the lighter the firing and the steadier the temperature the better will the Grapes retain their colour and fresh plump condition.

Houses in which only a few bunches of dead ripe Grapes are hanging may now be cleared with the greatest advantage, not only to the fruit, but also to the Vines and fuel store, a serious item where stoking is not properly managed. There prevails an opinion that Christmas is the time of times for cutting and bottling Grapes, but no particular date will ensure keeping unless they are ripe, and when ripe they may be cut and bottled at any time. When late Hamburgs were more extensively grown than they are now, we frequently cut the whole crop in

November, and they kept much better off than upon the Vines. The Grape room, of course, is the best place for bottled Grapes, but unless quite ready and satisfactory they will keep equally well in houses occupied by Gros Colman or Lady Downe's. When cutting Grapes before the leaves fall the latter should be left to ripen and drop, as every fresh cut in the removal of leaves or laterals forms an outlet to the sap, as may be proved by the rapid absorption of water from the bottles.

THE GRAPE ROOM.

When this useful structure is devoted to the storing and ripening of choice Pears, the gentle warmth so essential to flavour will fit it for the reception of the long keeping Grapes when the time arrives for cutting and bottling. The bottles meantime may be filled with soft water and placed in position, and beyond ventilation no further attention certainly for the next month will be needed. Store rooms, on the other hand, which are used for all sorts of purposes, should now be cleared, cleansed, and lime-washed, and if at all damp steadily fired until the walls have parted with all moisture. Artificial heat, of course, is most necessary at times, but its constant use is almost, if not quite, as prejudicial as an excess of moisture; hence the importance of getting the walls thoroughly dry, and, if possible, dispensing with it after bottling. A great number of the early and hurriedly provided Grape rooms are above the ground floor, but the most suitable store is that upon or below the ground line where winter frost and spring warmth never enter. In such a room, the walls being thick or hollow, the floor cool and dry, and ventilation perfect, the Grapes will keep fresh and plump five months after they are removed from the vineyard. W. C.

The Banana disease.—The *Colonies and India* states that a discovery has recently been made on a Fiji plantation, which will probably prove extremely valuable in all tropical countries where the cultivation of Bananas is regarded as a settled industry. The Banana disease had for some time been causing much havoc on a plantation on Vanua Levu, and it appears that the discovery of an antidote was due to an accidental occurrence. On a flat near the seashore there was a patch of Bananas much diseased, and some time ago the sea swept into it and remained on it for about an hour. All the plants were killed as far as the standing stems were concerned, but vigorous young shoots came up freely from the roots, and were not only quite free from disease, but soon began to bear much larger bunches of fruit than the parent plants ever did. Upon noting this effect the planters determined to try the experiment upon a number of badly diseased plants which the sea had not reached. They cut down the diseased plants, and, having stirred the ground about them, poured from one to four buckets of sea-water over each. The result was that, while the parent stems withered, vigorous young shoots came freely away without a sign of disease.

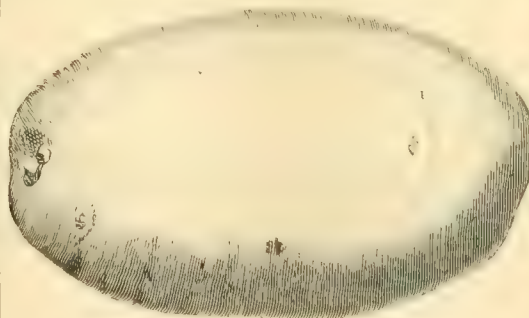
Phylloxera and tank borders.—A communication appeared in your issue of 17th Jan., 1885, under the above title in answer to a query by me as to the replanting of Vine houses which had been infested with Phylloxera. Acting on the advice given by the writer of this article ("W. C. T.") and other persons, I rendered the sides and bottoms of the borders watertight with cement, arranged outlets for drainage, and laid on the water. I then re-filled the borders with fresh earth and replanted them with Vines. I determined to flood regularly as advised, and thought that I might (in the words of "W. C. T.") "contemplate the future without doubt or fear of evil results." Since the replanting of the Vines the borders have been flooded every spring and autumn, not as "W. C. T." suggested for four, but for about fourteen days at each season. The water during these times has risen to the edge of the borders and drowned out all kinds of insects. I regret, however, to say that I have again discovered the roots of one of the Vines to be affected with Phylloxera. So far only one Vine has shown signs of disease, which proved on ex-

amination to be rampant. This Vine appeared weakly soon after being planted, while the other Vines, which have flourished, show no signs of failing at present, but I can hardly now believe that the submersion will prevent the spread of the insect (some of which must have remained in the ground when the infected Vine was recently removed) to the other Vines. My experience therefore shows the water cure to be a failure, and I am at a loss what steps to take, and I shall be grateful if any of your readers can help with advice as to how I can get rid of this scourge.—A. W. N.

KITCHEN GARDEN.

ASHLEAF POTATOES.

The market growers who largely plant one or more of the Ashleaf forms are to be principally found in Cornwall and the Channel Islands. From near where I am writing I can see during the early part of the Potato season several heavy train-loads of early Potatoes pass by daily, these having been landed at Weymouth and sent direct to London. Large quantities are also unloaded at Bristol and other important shipping centres, and afterwards distributed among inland towns generally. All of these early consignments do not belong to the Ashleaf section, but this largely predominates, and as a rule is the best in point of quality. It may be urged in extenuation of our remissness in com-



Potato Myatt's Ashleaf (natural size).

peting more vigorously with the Cornishmen and Channel Island growers that these have a decided advantage in point of locality, and this I to a certain extent will admit, but must refuse to attribute all their success to the matter of superior climate. Favoured positions along the south coast of England and the parts of Ireland which also derive a genial climate owing to their proximity to the coasts washed by the Gulf Stream are plentiful, and in all of these early Potatoes might be profitably grown. Even in more inland districts there are fields well adapted for the production of these quick-growing and most remunerative crops. Some parts of Ireland would appear to be especially well adapted for the cultivation of early vegetables generally, and Potatoes in particular, the most of which might be shipped to England or Scotland as cheaply as they could be sent from Cornwall. A gentleman occupying an important position at Queenstown informed me that last midwinter, when the country hereabouts was in a dreary state, the gardens in his neighbourhood were quite gay with Hydrangeas and other flowers, while the crops of vegetables (what few are properly cultivated) are singularly early in the spring. I asked the question, Why do they not grow Ashleaf Potatoes and other early crops extensively? and all his reply I can give without trenching upon dangerous ground is in the form of another query, Why, indeed?

If asked to state a reason why early Potatoes, particularly Ashleafs, are not generally grown in large quantities, I should unhesitatingly assert that it is largely due to the fact that they require rather more trouble expended over the proper storing of the planting tubers. They must not be allowed to sprout prematurely, the loss of the first strong shoot invariably resulting in a great decrease in the weight of the crop produced. The successful growers previously alluded to realise the importance of, and the great necessity for storing their sets in single layers and fairly light and cool positions, and would-be successful rivals must adopt similar practices. The construction of a few score, or even hundreds, of shallow boxes or trays suitable for storing planting sets in is not a very serious item in these days of steam labour and cheap wood, and such, taken proper care of, will last many years. They may be of any length and width, and need not have closely made bottoms, but should be not more than 3 inches in depth, and all ought to have fairly strong corner blocks, these standing 3 inches clear of the sides. A single layer of the selected sets ought to be closely placed in these, the sprouting end uppermost, and stored in a cool airy room or shed. Being provided with the corner blocks, the boxes may be arranged across the storing place in tiers of as many boxes as will stand firmly, and all the tubers will then get a fair share of light and air. In this manner sufficient Potatoes can be properly stored in a comparatively small space, and further protected if need be from severe frosts, to plant several acres of ground, and in any case, or whether few or many planting tubers are required, this simple plan of storing is far preferable to the haphazard methods too much in vogue. Not a few farmers and market growers either purchase the tubers of Potatoes for planting in the open market, or use the smallest of those that have been stored in clamps or heaps, and if they cannot be persuaded to store their own sets every autumn, they ought not to plant Ashleafs.

Private gardeners and experienced amateurs, as a rule, take good care of their Ashleaf Potatoes, but where they err is in saving too few of them. Instead of being content to save two or three pecks, or less, they ought to store as many, or several, bushels, and if they are obliged to purchase the greater portion, the autumn, or before the tubers have been spoilt by premature sprouting, is the time to procure them. Not only are the Ashleafs generally fit to use before they are fully grown, but the majority of them keep good long after they are lifted, or even in the open ground. We planted not less than eight bushels last season, and the produce is still being used in the dining-room on account of their very superior quality. Where double cropping is practised as closely as possible, Ashleaf Potatoes ought to figure conspicuously in the arrangements. They can be cleared off early and also planted extensively where it is proposed to put out Brussels Sprouts and other members of the Brassica tribe between the rows early in the summer. In some seasons they are liable to be badly affected by disease, but not unfrequently they mature before the disease is very prevalent, and this has been the case during the past three seasons.

Old writers mention the fact that varieties of Potatoes were numerous in their days, and were being constantly added to owing to the ease with which seedlings could be raised; but of all the sorts cultivated nearly a century ago only the Ashleaf would appear to have retained its

popularity to the present day. The true old Ashleaf was then considered one of the best for forcing and early borders, and so it still remains. In the open garden and fields it is not so profitable as the more heavy cropping Veitch's Improved Ashleaf and other forms much resembling it, and for weight of crop all are surpassed by the true Myatt's Ashleaf. The old Mona's Pride with us is also a light cropper, while other supposed improved forms of Ashleaf have gradually, and rightly, become merged into Veitch's Improved. We plant the latter and Myatt's most extensively, and these are the varieties I recommend for field culture. Late spring frosts are the greatest hindrances to early Potato culture. It is possible in most southern districts to lift large quantities of Potatoes when they are fetching eight shillings per bushel in the market, and if this does not pay well I do not know what crop will. It is quite a mistake to imagine Ashleaf Potatoes are only fit to be grown in a walled-in garden. They can be had nearly, or quite as early in the open under good cultivation, especially if the site chosen is well out of a valley or where spring frosts are most destructive, and if the ground slopes to the south and the soil is light, the subsoil being of a gravelly nature, so much the better. W. IGGULDEN.

KITCHEN GARDEN NOTES.

REMARKS ON TRENCHING GROUND.

THERE are few professional gardeners worthy of the name, who, if they have not taken an active share in this laborious work, have yet had good opportunities of marking well how it was done. Our amateur brethren are, as a rule, not experienced in the matter, and for their benefit what is so often advised by various authorities may well be more fully discussed than is usually considered necessary. At the outset it ought to be pointed out how easily the inexperienced may err in following too literally the instruction contained in the articles they read, as it is almost impossible to give advice that will meet every case. Some judgment must be exercised in every individual case, this being especially necessary in deciding whether the whole or portion of a garden shall be trenched or not. Particularly would I point out how very important it is that the two distinct methods of trenching be well understood before either is adopted. When trenching is advised, this is usually taken to mean breaking up the ground two good spits or more deep, the positions of each being completely reversed; whereas, when double digging or bastard trenching is recommended, this means digging two spits deep without, however, changing much the positions of the respective layers, only a very small portion of the sub-soil really reaching the surface. In only but few instances, this being where there is a depth of 2 feet or more of alluvial soil, is it safe to practise the ordinary trenching when a garden is first formed, nor indeed at any time later on without first improving the subsoil by bastard trenching. It is by no means an unfrequent occurrence to see a body of casual labourers set to work at trenching in a newly formed kitchen garden, and in very many cases good soil is buried and a quantity of wretched clayey stuff brought to the surface, and which takes many years to bring into a free-working condition. Better by far not trench at all than spoil a garden in this manner. I could also give instances where large quarters in comparatively old gardens have been rendered comparatively sterile and very difficult to cultivate by a reckless resort to trenching, nothing short of retrenching correcting this bad state of affairs. Newly formed gardens as well as any garden that has not previously been double-dug or well prepared ought not therefore, as a rule, to be trenched, but if the nature of the subsoil admits of its being done, will in most instances be greatly improved by double digging, a variety of substances being well mixed with the subsoil each time it is done. For the latter purpose lime rubbish, burnt earth or clay, ashes, partially de-

cayed leaves, garden rubbish generally, and strawy manure are all suitable, these effectually preventing the clayey particles from running together again, and eventually render it fit to bring in larger or smaller quantities to the surface. I am no advocate for burying a quantity of rich manure in the bottom spit for the purpose of enticing down the roots of vegetables generally, and could never see the advantage of trenching the ground more than two spits deep. As a rule it is better for most plants to be rooting nearer the surface or where they derive most warmth and form a greater abundance of fibres. If, when the roots strike downwards, they find congenial surroundings and a certain amount of food, the plants naturally thrive better in consequence, and it is very certain deeply cultivated ground is most retentive of moisture. Bastard trenching is also of good service in correcting undue richness of the surface, an excess of manure causing it to be unsuited for the profitable cultivation of vegetables generally. A portion of the second spit, or what is known as shovellings, well mixed with the over-rich surface-soil greatly improves its character, but only when very little clay abounds is it advisable to completely reverse the spits. Very few amateurs will feel disposed to do much of this kind of work, but, as before stated, they ought to know how it should be done, or otherwise they may be greatly deceived by those who undertake to do it at a fixed charge—"scamping" being too often resorted to by job hands. The rate of payment naturally varies in different localities, but the average price for trenching light soil two spits deep is 10d. per rod, an additional 2d. being given for heavy land. Bastard trenching can be done more expeditiously, and for this the payment is respectively 6d. and 8d. per rod. If there is much wheeling to be done extra payment ought to be given, and in any case it is unwise to be too hard on the men in the matter of payment, or the work may not be done properly, unless they are closely watched. The method of procedure is much as follows: Supposing a breadth of ground is to be trenched, the first proceeding should be to open a trench at one end two spits deep and about 20 inches wide, the whole of this being wheeled to the opposite end or wherever it is intended to finish. Another 20-inch width must next be marked out with the aid of two sticks of that length, a line and spade, the top spit of this being thrown into the trench in front of it, on this being roughly spread the soil brought up from the bottom of the second trench, and so on till the whole is done. In this manner a quantity of fresh soil is made to take the place of the old surface soil, and it may be to the great improvement of the crops grown on it. If any manure is applied during the process of trenching, it should be in moderate quantities only, and be disposed between the spits. In bastard trenching 30-inch widths ought to be marked out, but only the top spit should be wheeled to the opposite end of the quarter. This gives a clear course for dealing with the subsoil, which should be deeply broken up with a fork, the manure or other material added being well mixed with it. It is then ready for the reception of the top spit of the next width, but whether any manure ought to be mixed with the latter or the shovellings thrown out must depend upon circumstances. If the ground is comparatively poor and the subsoil was not previously disturbed or prepared for bringing to the surface, solid manure of some kind may well be added to the top spit, but not the shovellings. When trenching is done largely with a view to correct the surface soil, then the shovellings or loose portion left of the top spit should be shovelled out and mixed with the top soil. In ordinary spade digging, that portion the shovel brings to the surface is

rarely reached; consequently it partakes most of the character of the subsoil, being either beneficial or injurious accordingly. After a breadth of ground has been trenched in any way, time ought to be allowed for it to settle down considerably prior to cropping; hence the advisability of completing this work where possible during any dry period in the autumn and winter. I have found Potatoes succeed remarkably well on newly trenched ground, and these leave it in a firmer state and therefore much better condition for various other crops, a loose and deep root-run, as a rule, promoting the growth of too much haulm or foliage.

W. I.

TREES AND SHRUBS.

THE HARDY SMILAXES.

THIS highly interesting genus of Green Briers is computed to number something little short of 200 species, though probably not more than a fourth of these are in cultivation at the present time. Many of the tropical or sub-tropical and



A fruiting twig of *Smilax aspera*.

greenhouse species are very ornamental, and are found extremely useful for clothing pillars, rafters, &c., or even as pot plants for large conservatories trained to stakes or wires. The hardy species, however, are of unusual interest to us at the present time. They are chiefly natives of North America and Southern Europe, and with few exceptions are perfectly hardy even on cold sunless exposures. They have the great advantage of being evergreen, and certainly ought to be used more often in relieving the monotony of the Ivy and other common climbers. Walls and buildings of all kinds seem to best suit the Smilaxes; they may be grown in the open trained up poles or pillars, although in such positions we have never seen them so vigorous or happy as when sheltered by a wall. Smilaxes have also been tried as trailing rock plants with indifferent success, and in the case of *S. Walteri*, *aspera* and one or two more have completely failed. Economically,

the genus is of vast importance, the roots of many species constituting the sarsaparilla of commerce. The fleshy roots of *S. pseudo-China* are used in the manufacture of a species of beer in South Carolina, and in China those of *S. China* are eaten by the natives. As regards their flowers, the varieties of *Smilax* can boast of no particular beauty. In some cases, however, the bunches of berries, as shown in the cut, are highly ornamental and not without considerable interest. As regards soil, that of a light friable nature will be found most suitable, increase being readily accomplished by division of the roots. Amongst the most interesting of the hardy kinds are *S. aspera*, with green and white variegated hastate or deltoid leaves. *S. tamnoides*, also called *S. Bona-nox*, is a very interesting species, a native of North America and one of the hardiest; the leaves are roundly cordate, halbert shaped, and often three-lobed, shining green on both sides. *S. mauritanica*, with bronzy or mottled leaves, is perhaps only a variety of *S. aspera*. *S. pseudo-China* is a native of North America with large, oblong, dark green leaves. *Rotundifolia*, *glauca*, *lanceolata*, &c., are all interesting, and as foliage plants highly ornamental.—M.

—It is very rare to meet with any of the hardy forms of *Smilax* in gardens, but I recently saw some fine specimens upon the wall at Kew, and so beautiful were they, that I could not but think them worthy of more attention than they receive. They are of a shrubby nature, with long wiry stems; some are prickly and others quite smooth. The flowers of most kinds are inconspicuous, although some are sweetly scented, as in

S. ASPERA.—This kind is sometimes called the Prickly Ivy, and the leaves are somewhat heart-shaped, but vary much in form. It is a native of the south of Europe, and was introduced in 1648. A nice specimen of this upon a bank was one of the most interesting things I saw in a Kent garden last Christmas.

S. HERBACEA (Carrion Flower) is a hardy herbaceous kind introduced from North America in 1699. Its climbing stems are not prickly. The leaves are smooth and somewhat round.

S. TAMNOIDES is a fine hardy North American kind, with leaves of a shining green on both sides, and protected by sharp, rigid bristles.

S. ROTUNDIFOLIA, a native of North America, has rounder leaves than any of the other kinds, although the natural variability of leaf-form peculiar to many of them is not absent here. It is a good climber.

S. LAURIFOLIA, as its name implies, has Laurel-like leaves, whilst *S. canariensis* is handsome. Both of these kinds I saw at Kew upon the wall, which was about 12 feet high, and their allotted space was covered with rich green foliage. There are other kinds of less interest from an ornamental point of view, although of great medicinal value, but those enumerated might well receive more extended cultivation upon rockeries, low walls, banks, or sunny borders.—A. H.

Medlars.—Mr. Muir states (page 415) that Medlars have produced a very full crop this year, and adds that, as a rule, they fruit with more certainty than Apples or Pears. They may do so in some localities, though hardly in East Anglia. And as for this season, our crop may be counted by dozens instead of measured by bushels. I agree with Mr. Muir's views in reference to the ornamental character of the trees on lawns or in pleasure grounds; the trees are so ornamental in habit that they may be grown in the pleasure grounds. Still it remains true, that they are so little grown in such places that, when fine specimens are found in landscapes, not a few cultivators fail to recognise them. The Medlar is, however, a telling feature either by itself or in combination with other trees. Its habit, if left to itself, is totally different from that of all other trees. It may be added that it goes well

with the Quince, another ornamental and useful tree. Quinces have also failed to fruit this season.—D. T. F.

THE EVERGREEN OAK.

(*QUERCUS ILEX*.)

ONLY those who have had some experience of the Evergreen Oak for planting at high altitudes have any idea of how well suited the tree is for affording shelter on bare and wind-swept hill side farms, or for acting as a screen fence on exposed parts of the coast. For both these purposes it is peculiarly well suited, the hard, leathery leaves and compact outline of the tree seeming as if specially arranged for doing battle with hard-blowing and long-continued storms. Even where the hardy Holly and Highland Pine bend from the blast the Evergreen Oak stands uninjured. This was strikingly forced upon me not many weeks ago when visiting some places on an exposed part of the south coast of England. There the Evergreen Oak was highly valued by the owners of property along the coast, it and the Austrian Pine meeting one at every turn of the bays, and showing unmistakably, from their large size and bright, healthy foliage, that they were just the trees for such situations.

But the Evergreen Oak must not, as is too often the case, be considered as only suitable for the seaside, for it succeeds equally well far inland and at considerable altitudes. In many of the midland English counties grand old specimens may be pointed out; while in Wales, on the sides of the Snowdon Hills, are not a few fine thriving trees that are a boon to the occupiers of land in that wind-swept district. Near the Cedar grove at Holwood, and growing on almost pure chalk, or where only a few inches of loam overlie the escarpment, may be seen several giant specimens of the Evergreen Oak, which from their size and healthy foliage show that the soil suits them. Two of these, taken at random, are of the following dimensions: No. 1. Height 52 feet, with a stem girthing 11 feet 10 inches at 2 feet from the ground. After this it ramifies into eight large stems, which together form a symmetrical and well-rounded head of 50 feet in diameter. The other stands 49 feet in height, has a stem which girths 7 feet 10 inches and 7 feet 9 inches at 3 feet and 5 feet from the ground, and with a thick head of 48 feet in spread. This is a fine, symmetrical tree of unusually clean growth, the stem containing 69 feet of measurable wood, and being but slightly fluted or tapering throughout its entire length. Several others of almost equal dimensions with these might be mentioned, but sufficient have been given to show to what size the trees attain when growing under favourable conditions as to soil and situation.

Few trees vary more in general appearance, size, and shape of foliage, as well as outline, than do the Evergreen Oaks, for while some are of easy growth, others are very stiff and formal. The leaves, too, vary much in size, shape, and depth of colouring, some being of a light grey tint and distinctly serrated, while others are of a deep, almost yew-green and plain of outline. At Holwood the finest and most ornamental specimens of the Evergreen Oak are those somewhat after the style of the Sycamore, and with deep green, plentifully-produced leaves.

The Evergreen Oak is a tree that, when of several feet in height, is by no means easy to transplant, but this is a difficulty that may to a very great extent be obviated by careful attention to frequent removal whilst the plants are young.

A. D. WEBSTER.

American plants.—In a general way, all American plants may be said to delight in, and to require what is called peat soil; it was at one time believed that they would not thrive in any other. Experience, however, proves the contrary, and it is now found that *Rhododendrons*, the most important of them all, as well as any other of the more vigorous-habited plants, succeed in almost any soil that does not contain lime or chalk. In many sandy loams they grow with as much vigour and luxuri-

ance as they do in peat; in fact, almost any loamy soil, free from lime or chalk, may be rendered suitable for them by a liberal admixture of leaf-mould, or any fibrous material, such as the parings of pasture land. When the soil is poor, cow manure in a thoroughly decayed state forms one of the best manures for *Rhododendrons*. It is an important point in the successful cultivation of these plants, that the seed-pods should be removed immediately the flowers have fallen.—A. WATERER'S *Catalogue*.

THE SCARLET-BERRIED ELDER.

(*SAMBUCUS RACEMOSA*.)

AMONGST ornamental berry-bearing shrubs or small-growing trees there are few that do more to enliven the autumn landscape than several species of Elder, but particularly the one at present under notice. From our common Elder the scarlet-fruited kind differs mainly in having racemose flowers and scarlet berries, the leaflets, too, being usually narrower and the bark dark-coloured and smooth. Undoubtedly it is a shrub that merits attention. For planting on rocky eminences it is peculiarly well adapted, the stout roots being sent down into the crevices, and so not only anchoring it steadily in its place, but affording the dampness and nourishment that are necessary for its perfect development. Along the water margin, too, the scarlet-fruited Elder can well hold its own with the Willows and Birches, for when loaded with fruit the branches are forced into a pendulous or half weeping form caused by the weight of the Grape-like bunches of bright scarlet berries. Then is the time to see good specimens of this Elder, the bunches of fruit often measuring about 8 inches in length, and as they are usually very freely produced and being of so bright and conspicuous a hue, can hardly fail to attract attention, and produce an effect that is as pleasing as it is interesting and unusual in our autumn landscape. At the flowering period, too, the scarlet-fruited Elder is very ornamental, for the racemes of greenish-white flowers are by no means uninteresting or devoid of beauty.

A friend tells me that at great altitudes on the Bernese Alps, during the end of August and the beginning of September, the scarlet-fruited Elder is an object of the greatest beauty to the few visitors who care to ascend to the 4000 feet or 5000 feet at which it grows in greatest abundance and most luxuriantly. Some of the rocky slopes of the mountain passes are thickly covered with it, and when the berries have assumed their scarlet hue the effect produced is gorgeous in the extreme. There this Elder reaches to 12 feet in height and nearly as much in spread of branches, and reproduces itself by the hundred, young plants springing up freely wherever the conditions for their growth are at all favourable.

I am no lover of shrubs and trees that have by pinching and pruning been made to assume a shape the reverse of what Nature intended them, but my opinion on this head was somewhat challenged the other day on being shown a specimen of the scarlet-fruited Elder that had by careful manipulation been trained to a single stem. Certainly the arching head of twiggy branches and glorious wealth of scarlet fruit seemed to smooth over and hide for the time the unnatural appearance, and make one forget his dislike of contorted and too trim-looking specimens of trees and shrubs.

In this country the scarlet-berryed Elder grows quite as freely as does our native plant, but it does not appear to have the wonderful recuperative nature possessed by the latter, nor is it so well adapted for planting by the seaside. Taking everything into consideration, however, it is an undeniable fact that it is the most ornamental kind of Elder with which we have yet become acquainted in this country, and as its wants are few, there can be little doubt that when its valuable qualities become better known it will be more extensively planted than it is at present.

A fitting companion to the scarlet-fruited Elder is that with golden foliage (*S. nigra aurea*), which maintains, and in an undiminished state for the

whole season and under the hottest sun, its fine glowing tint of the richest yellow. This form needs no special care nor attention.

Another very handsome, but greatly neglected member of the family is the Canadian Elder (*S. canadensis*). As an autumn-flowering shrub this Elder is hard to beat, the large cymes of white and pink flowers being abundantly produced and very ornamental. It will grow anywhere, be the soil rich or poor, the situation shady or exposed.

Of our common Elder (*S. nigra*) there are not a few varieties in addition to the golden-leaved above mentioned, for we have several cut-leaved forms, and such, too, as differ markedly in their foliage colouring and habit of growth. They are all worthy of culture; indeed a set of forms of the Elder is not a little surprising to those who have passed by or previously almost ignored the race. For growing in the shade few shrubs can equal the various kinds of Elders, while as town and seaside subjects they are surpassed by few of such as have been found suitable for planting in such situations. Beneath the Scotch and Spruce Firs they grow with unwonted freedom, and few, indeed, are the plants or shrubs that can survive for even a shortened period amongst the decayed and decaying pins of the latter in particular.

A. D. WEBSTER.

Prunus Pissardi.—At least one person disagrees with "D. T. F." about this gloomy shrub. I had a number of these, but thought their effect so bad and wrong in every way that I cut them down in the middle of the summer. The place presented a prettier appearance immediately on their disappearance, greatly to my satisfaction.—S. X.

Berberis stenophylla.—In your issue of June 1st last I see an inquiry as to the origin of the above-named *Berberis*. Perhaps before this reaches you some one nearer home may have answered the question. As near as I can remember, it must have been about the year 1865, during my stay of over eighteen months in the nurseries of Messrs. Fisher & Holmes at Sheffield, that the above *Berberis* was raised. I cannot state positively whether its parents were *B. Darwini* and *B. dulcis*, or *B. Darwini* and *B. empetrifolia*, but it certainly partakes of, if it does not excel the latter in gracefulness. Many other gems were raised in those nurseries about that time, as *Ilex Fisheri*, *Taxus hibernica aurea*, the Golden Thyme, and many others I have forgotten.—T. SMITH, *Timaru, N.Z.*

Poison Sumach (*Rhus venenata*).—Most of the members of this genus are more or less poisonous, but this and the climbing *R. toxicodendron* (both North American species) are said to surpass all others in this respect. *R. venenata*, on account of its poisonous properties, rarely seen; indeed it is a less ornamental shrub than those commonly grown, except in the autumn when the leaves die off remarkably bright. Another effective species in autumn is the Japanese *R. succedanea*, a plant of a sparsely branching upright habit of growth, whose pinnate leaves invariably become tinged with bright scarlet-crimson, and under glass retain their beauty for a long time. In this stage they are very telling in a large conservatory or greenhouse, for the plant is not thoroughly hardy in this country. In conjunction with *R. vernicifera* it is employed by the Japanese in the manufacture of lac.—T.

Hypericum Moserianum.—Our hardy trees and shrubs with but few exceptions do not appear to have engaged the attention of the hybridist to anything like the same extent as many other classes of plants; therefore the announcement of a new hybrid *Hypericum* created a considerable amount of interest. The variety in question was raised by M. Moser, nurseryman, of Versailles, from the pretty Japanese *H. patulum*, fertilised by the pollen of the European Rose of Sharon (*H. calycinum*). In general appearance it is about midway between its parents, being taller than *H. patulum*, whose spreading habit is to a great extent retained. The flowers are, however, larger than those of the Japanese species, while when first expanded the anthers are bright red. This feature, very noticeable at first

and regarded by some of great importance, is really of little account, as they remain in this state such a short time. This new variety of *Hypericum* will flower throughout the latter part of the summer in common with many other members of the same genus.—T.

IMPORTANCE OF DRAINING.

I HAVE long held the opinion that diseases in Coniferae, like canker in the Apple trees, come through the roots, and it will generally be found that where the trees have good, deep, well drained soil to run into, disease is not often present. Treating of this subject under the head of "Diseases and Accidents," Messrs. Veitch, in their "Manual of Coniferae," say, "Disease also arises from the absorption by the roots of deleterious matters in the soil in which the plants are growing, from the stagnation of water at their roots." Other causes are given, but this is certainly a cause that can be prevented, and I would urge the importance of all intending planters making this the first consideration. Those who have charge of large gardens and pleasure grounds in the country are well aware of the importance of draining in improving the character and quality of the soil. The large country estates are not all we have to think about, as large and small villa residences are yearly becoming of more importance, and nearly every one of the owners of such gardens is alive to the value of a selection of the many beautiful trees now in cultivation. Some of the dwarf species and varieties are excellent subjects for the rock garden. We planted a dozen or more in our rock garden some five or six years ago, and they have an excellent effect in the winter. One of the prettiest little things is *Retinospora obtusa pygmaea*. It has grown about 8 inches high in five years. *R. ericoides* is a much taller plant, but it is also well adapted for the rock garden. We have also a golden form of *R. obtusa* which is of dwarf habit, not taller than a man when it is fully developed. There are two dwarf forms of the Scotch Fir type, viz., *P. Pumilio* and *P. pygmaea*, that have not yet grown more than a foot in height. Dwarf Junipers and dwarf forms of *Cryptomeria* also come in here. They are, of course, most effective on the higher grounds, and such positions are naturally drained. I had to plant a number of coniferous trees on our lawn here six years ago. At that time it contained a few deciduous trees, and also a few Spruce Firs, all of which were diseased. I found the water stood at a depth of 18 inches below the surface in winter, and before doing anything to the garden I had it drained 3 feet deep into a main drain 3 feet 6 inches deep, with a good outfall for the water. A rather curious circumstance occurred when forming the drains. I came upon old drains which must have long ceased to carry off any water, and that had been made with bullocks' horns. The point of most importance at present, however, is the fact that the few trees and bushes that were left have regained their vigour, and the coniferous trees that were planted have given every satisfaction. Even the Umbrella Pine of Japan (*Sciadopitys verticillata*), which should find a place in the smallest gardens, has grown quite vigorously. It seems as if it would do very well in the vicinity of large towns, as we are not out of the London smoke. *Abies concolor* and a variety of it named *violacea* have succeeded admirably; so also has *A. grandis*. All these are excellent for large lawns. They make growths 18 inches or more in a year, and soon shoot up into noble trees, with clean healthy boles. Two most distinct and beautiful trees are *Abies ajanensis* and *A. Parryana glauca*. The first named we received under the name of *Abies Alcoquiana*; the leaves are much more glaucous on the under sides than those of *A. Parryana glauca*. I believe the correct name of this is *A. Engelmanni glauca*. Its bluish foliage is quite distinct, and both trees are slow growing. The numerous varieties of *Cupressus Lawsoniana* are very beautiful. We grow something like a dozen varieties, and all of them succeed well with us except the golden form *lutea*, which has not that bright golden appearance that it has in the pure air of the country. We have a

great many more species and varieties of Coniferae, but the above do best with us, and where the Spruce Fir scarcely lived in the grounds all those referred to grow freely, now that the soil is deeply stirred and well drained.
J. DOUGLAS.

THE PLEASURE GROUND IN NOVEMBER.

THERE will not be much chance for any work in the pleasure ground for some time other than that caused by the fall of the leaf, but when an opportunity offers there is no better time than the present for preparing any bare spots of ground for future planting, for whether this ground be simply laid up to receive the autumn rains or is likely to require artificial watering, November, with its absence of sun and drying winds, is the best of all months for the work. I have succeeded in clothing some bare, ugly spots under Cedars and Evergreen Oaks, where hardly a drop of rain ever seemed to penetrate, by breaking up the ground roughly, giving it a soaking of water, and planting it thickly with *St. John's-wort*. As soon as it was planted I strewed the ground with the sweepings from the hayloft, with the result that by the end of another summer the once bare spots were fairly well clothed with green. Any bare places on hill-sides and slopes away from trees may be thickly planted in a similar manner; or if a high undergrowth is needed, the common *Rhododendron ponticum* may be used instead of the *Hypericum*. In this case it is advisable to throw around the newly-planted *Rhododendrons* as early in the season as possible, or at any rate before the sun gets much power, a good mulching of lawn Grass. Very steep slopes, which from their situation are hardly suitable for choicer subjects, can be satisfactorily clothed in this manner. But it must always be borne in mind that the preponderance of any one form of greenery, as the common *Rhododendron* or the different forms of Laurel, is decidedly objectionable, and should be both avoided in any new planting, or altered where it exists wherever practicable. It is, unfortunately, no light task to grapple with very old brakes of Laurel if labour is somewhat scarce, but small patches can be dealt with each season and replanted with other things, and thus by degrees the objectionable feature be removed. There are always in gardens of any size many subjects, as Conifers in variety, hardy Heaths, Veronicas, *Euonymuses*, *Rhamnus*, *Yuccas*, *Laurustinus*, and the like, that have become too large for various other purposes, and that can be utilised in this manner. I have this season some large plants of Lawson's Cypress, *Thuja gigantea*, and *Cryptomeria japonica*, taken from large flower-beds, and a nice batch of *Veronica Traversi*, struck in the autumn of 1888, that are to be planted here and there on an old Laurel slope, and I hope to follow this another season, if the ground can be cleared, with batches of double *Deutzia*, *Forsythia superba*, and *Laurustinus*. This last does very well with us, blooming every year in great profusion, although we cannot approach the extraordinary profusion of flower produced from a gravelly subsoil as in the neighbouring gardens of Hampton Court.

E. BURRELL.

Claremont.

Euonymus in fruit.—I was pleased to see this very pretty native plant so favourably spoken of in THE GARDEN, Nov. 2 (p. 410). In a cottager's garden not far from here is a fair-sized plant of it now loaded with bright scarlet berries, and some of them are showing the seeds, which are bright orange, forming a very pretty contrast. The branches of this tree are slender and the capsules moderately large, and being borne in great profusion cause the branches to droop, giving the tree a pleasing effect. I shall certainly plant a few this season, if possible the light variety *fructu-albo*, which is not nearly so showy as the above, although it is worth growing. *E. europaeus* grows on the margin of several of the woods and plantations on this estate, and when it happens to be near Maples (the leaves of which are just now of a rich golden colour) and Blackthorns the effect is charming. This fine berry-bearing shrub is not planted on the

margin of plantations half enough, and what is there so pleasing as a fine bush of it in the pleasure ground backed up with Evergreens of various shades of colour?—T. ARNOLD.

Field mice.—What is the best mode of getting rid of field mice, so that if poisoned they would not go far? What is the best poison to use? I am very much troubled with them. In a new plantation of some thousands of nice young stuff, the Hollies in particular are being completely peeled. It has been suggested to enclose about 20 feet square with wire-netting and put a deadly poison in the centre of the enclosure, but before acting I shall await your reply. I am most anxious not to poison other animals—dogs, foxes, &c. The stems and boughs have all been daubed with a kind of tar, but the mice are now eating the bark of the tiny twigs where the tar can hardly be used.—W. E.

ORCHIDS.

W. H. GOWER.

CATTLEYA MAXIMA.

A box of blooms of this species comes from a "Small Grower" to show how the flowers vary. I think the name must be an assumed one, for really a "Small Grower" could not have afforded to cut so many flowers. They are very beautiful, and evidently the two distinct types are amongst them. Why is this plant not more largely grown? Of course its name now means nothing, because we have in our houses many kinds with flowers better deserving the name of maxima than those of this plant. There are two distinct forms of this plant now in our gardens. The one with the shorter bulbs has, for the most part, the darker blooms, and is called *peruviana*, or Backhouse's variety, while the flowers are also much superior in form and colour to those of the other. They are those marked 3 in a "Small Grower's" group, the sepals and petals being rosy lilac; lip large and spreading, beautifully frilled round the edge, and rich magenta in two shades, and having the disc marked with yellow, which extends quite to the base of the tube. This plant, I fancy, has a much shorter growth than the other forms. The flowers numbered 2 I consider those of the variety *alba*. The sepals and petals are white, the lip being streaked and marked with pale purple, streaked with yellow on the disc, whilst 1 is a very poor form less beautiful than the ordinary variety of this species, but still valuable for this dull season. No. 4 is a good form in every respect, with flowers each nearly 5 inches across and rich in colour, this last one being, I think, a flower of the true maxima. I will not offer "Small Grower" any advice in growing this species, as he apparently does not require it, but for the benefit of beginners I may say that, although this species hails from Peru, where it appears to be widely distributed, I have found it to like a considerable amount of heat under cultivation. Whilst it enjoys a fair share of sunshine, its leaves must be preserved from the ill effects of the strongest sun, or they will become very pale in colour. This plant, which enjoys liberal supplies of water during the summer season, should be potted firmly in good peat fibre, and the drainage must of necessity be good. During the winter months water must be given carefully, yet the plants must not be allowed to suffer for want of it. The temperature in which it is grown must not at any time fall below 50° or 60°. I have so frequently seen this plant doing badly when loosely potted, that I have come to the conclusion that this is the cause why so many people fail to grow it.

Sophranitis grandiflora.—I have just received from Mr. Simpkins, who has charge of the Cambridge Lodge collection of Orchids, one of the

grandest flowers of this species that I have ever seen. In form it is wonderfully round and flat, thick and fleshy in texture, rich bright scarlet, and measuring upwards of 3½ inches across. Such varieties should be well taken care of by the lucky possessors, as size in this flower is an additional beauty.—W. H. G.

Cypripedium Spicerianum.—Quantities of this species are now flowering in the nurseries of Messrs. Williams & Son, of Upper Holloway, presenting quite a feature. It is remarkable that under cultivation this species has come to flower earlier than it did upon its first introduction, and several variations are recorded; indeed, one cannot look upon a quantity of flowers as are here noted without finding some excellent forms and colours, and differing considerably from those of the typical plant. It is a gem, and should be largely grown for winter flowering.—W. H. G.

Angraecum pertusum.—This pretty species is now in flower in the Kew collection, and it well deserves the attention of growers of these plants. In habit it much resembles an *Aerides*, being erect in growth with leaves 9 inches or 10 inches long, unequally bilobed at the ends, and very deep green in colour. The scape is longer than the leaves, and bears a many-flowered raceme of small paper-white flowers, spur short, yellowish. The flowers are arranged on the scape in a two-ranked fashion which renders them very peculiar. It comes from Sierra Leone.

A new Cattleya (C. Hardyana var. Amesiana). From Mr. Sander, St. Albans, comes the truss of a fine new *Cattleya* bearing four flowers. These flowers individually are 6 inches across and wonderfully rich in colour. The flowers appear to me to be either those of a *Dowiana* hybrid or a hybrid from the variety *aurea*, and it is very similar to the beautiful and rare form called *Maasiana*, but it differs from that plant in the deep reddish-lilac of its sepals and petals. The petals are broadly ovate, prettily frilled on the edges; lip large, rolled over the column, where the colour is bright magenta-purple, with quite a velvety appearance; middle lobe oblong, deeply lobed in front, beautifully undulated and frilled round the edge, the colour being deep velvety maroon. It has a pair of yellow eye-like spots, as in *C. gigas*, and the throat is rich yellow to the base. It is a lovely form, and is without doubt a natural hybrid.—W. H. G.

Cœlogyne Gardneriana.—In its style of inflorescence this species is very distinct from the other *Cœlogyne*s in cultivation. The raceme is long and pendent and bears numerous flowers, whose sepals and petals, only opening a little way, render them tubular in shape. With the exception of the lip, which is lemon coloured at the apex, the flowers are pure white. A greenish bract encloses the base, and the flowers each are 1½ inches long. The pseudo-bulbs are very handsome, being of a deep green, smooth and flask-shaped, bearing from the top two lance-shaped, bright green leaves. It should be potted in a compost of peat fibre and Sphagnum and grown in the intermediate house. A plant with several racemes may be seen in the collection at Kew.—B.

Cypripedium Schlimi.—This beautiful species is a native of the New World and belongs therefore to the *Selenipedium* group. It is a bright little gem, and having none of the greens and purplish browns so common throughout this genus, it may be said to occupy the same relation to the South American species as *C. niveum* and its allies do to those of the Old World. Unfortunately it is not so robust a grower as most of the *Lady's Slippers* are, and consequently is not common. Two items are essential to its successful treatment—a cool temperature and almost unlimited supplies of water. As regards the latter, I have been told by one who has collected it in a wild state that it grows with its roots always very near and frequently immersed in water. A compost of peat fibre and Sphagnum is most suitable; a proportion of loam is sometimes recommended, but I have found the former to be preferable. The flowers are from 1½

inches to 2 inches in diameter, the sepals and petals being of a rose-tinted white. The pouch of the lip is rounded, white, with a blotch of deep rose surrounding the small opening. A healthy plant is flowering in the Kew collection. *C. Schlimi* is one of the parents of the most useful group of hybrid *Cypripedium*s as yet obtained—*C. Sedeni*, *cardinale*, *porphyreum*, &c. It is a curious fact that the constitutional weakness of the parent is altogether absent in the progeny.—B.

Cypripedium Dauthieri marmoratum.—This is a beautiful variety; the breaks of colour which appear in the flowers would lead one to hope that quite a new departure is likely to come about in the numerous seedlings which are to be seen in various collections, the dorsal sepal and the petals being blotched and streaked with bright carmine-purple. I recently noted this variety flowering in Mr. Tautz's collection at Shepherd's Bush.—W. H. G.

Promonœa Rolliisoni.—This little gem is now flowering in various collections and it is well deserving attention, as it takes but small space, and yields an abundance of gay and cheerful flowers which last long in full beauty. The sepals and petals are waxy white with a slight tinge of yellow, lip yellow in front with darker markings at the base. It is a native of Brazil.

FLOWER SHOWS AT THE ROYAL AQUARIUM.

In addition to the three large exhibitions of flowers and other produce held at the Royal Aquarium, Westminster, by the National Chrysanthemum Society, six others are promised, and if we could divest that place of entertainment of its noise there would be little to find fault with the proposal, as flower shows cannot but help to foster a love for flowers, whilst they afford the public opportunities to see floral products of the most beautiful kind, from which they would otherwise be debarred. Therefore no exception can be taken to the holding of flower shows anywhere. But all the same the shows at the Aquarium are associated with elements happily absent almost everywhere else where such exhibitions are held. The Crystal Palace is a gigantic place of enjoyment, and millions of the masses visit it yearly, but all the same it presents admirable surroundings for flower shows which cannot be equalled in any place of amusement in the kingdom. It is perhaps fairly complained of flower shows generally that they are dull and monotonous. That is too true, but still it is possible for promoters of exhibitions to do much in the direction of rendering flower shows attractive and lively without introducing elements which are both noisy and obnoxious. In provincial districts the finest of music, if not thrust into the flower-show tents, is helpful and enjoyable. So also may be ordinary rustic or *al fresco* amusements if conducted apart from the flower tents, and a brilliant display of fireworks late in the evening proves valuable in attracting the crowds of visitors away from the tents.

None of these things interfere with the comfort or pleasure of the most refined flower lovers when properly conducted, whilst they very largely serve to render the local flower show what it really should be, the fête day for the district. But at the Royal Aquarium the noise made all day long is distressing. A village fair is hardly less irksome. Then there is the dense atmosphere of smoke which renders the atmosphere so obnoxious. The surroundings for flower shows are vile; glare, gas, dust, smoke, noise, shouting of the various showmen, bands of music, so distract and worry, that the flower lover is only too glad to escape from the pandemonium. A FLOWER LOVER.

Road scrapings.—I have seen several notes of late in THE GARDEN respecting the above material. I may say that it would be folly to use road scrapings from the roads in this neighbourhood for pot plants, as the stone from which the roads are made is a rather soft white limestone. After the scrapings have been in a heap for a couple of days it requires a pickaxe to get them apart, so it will be readily understood what this kind of

material would be like in pots. Very few plants would succeed in it, but when it is mixed with other materials, such as good loam, burnt refuse, &c., all kinds of stone fruit will succeed in it, but Apples do not like it at all. They canker badly, and the fruit is usually flabby and cracks all through. Pears will do better than Apples. Very little should, however, be used for them. The soil in this neighbourhood (Cotswold Hills) is overcharged with lime.—T. ARNOLD.

MODEL GARDEN EXHIBITS.

As you have given publicity to the very stupid attempt of a disappointed exhibitor at the summer show at Hounslow to make me responsible at the Brentford County Court for his want of success in securing a higher award for his exhibit, there can be no harm in inviting some discussion upon the merits of model gardens so called as seen at shows here and there, but, I hope, not widely so. Of all the subjects I have been called upon to judge at shows, these wretched contributions are the worst. In the majority of cases they are miserable travesties of gardens. They neither resemble actual gardens nor are they at all respectable models of what gardens should be. There is seldom any practical knowledge shown in the designs; paths running in all directions, to meet the designer's views of what is picturesque, often without beginning or end, and leading nowhere. Flower-beds are almost always of the crudest form and filled with the most outrageous of colours and the tawdriest of combinations. Almost always, too, the designs are devoted to blazing floral hues, whilst the more practical art in gardening is absolutely ignored. Why committees of societies should encourage such things passes my comprehension. If designs of real gardens were demanded, something useful might be got out of the exhibits, but even then we might as often see bad models followed as good ones. The class should be swept into oblivion, and the sooner compilers of schedules for competitive shows blot them out from their exhibits the better. But whilst so desirous of abolishing these garden abortions, I would not advise that efforts to promote some art work in the direction of securing designs or models should be entirely overlooked. A class for the best drawings or designs for gardens which are non-existent and a farther similar class for gardens existing would prove very useful, especially if young gardeners or art students of either sex could be induced to compete. The drawings or designs should be of some specified size, say not exceeding nor less than 24 inches square, and the plans or models so clearly defined as to be easily seen by the naked eye if these drawings be secured to the canvas walls of the tents. In this direction real talent might find room for development, and real art might be encouraged. It may be pleaded that model gardens so called present attractive objects to the million who visit flower shows. It were a pity that the million were not better educated in the gardening art that such abortions should meet with admiration, and yet even the most ignorant of spectators will be found admitting that not one of the models so-called resembles any garden ever seen. Better not attempt to teach the million at all than do so wrongly. It is all the more objectionable because when practical judges are compelled, in the discharge of the duties they are invited to perform, to make awards to these things, the public naturally assumes that having done so they secure the approbation of the judges; whereas they probably regard these constructions as abominations. If flower show committees cannot agree upon some desirable substitutes, let them have the courage to abolish the models. Far better, however, would be the designs on paper, as I have suggested.

A. D.

A remedy for Gooseberry caterpillars.—

For a year or two previous to 1885 we were troubled with the Gooseberry caterpillar. That season we placed a thick mulch of lawn Grass over the quarters as soon as mowing commenced, and we have continued to do so every season since. As during these seasons we

have not been troubled with the caterpillars, it has occurred to me that the grass mulch may have something to do with their non-appearance. Possibly it makes the ground unsuitable for breeding, or prevents the chrysalides from escaping.—E. BUTTS.

OBITUARY,

ROBERT MARNOCK.

WE have to announce with great regret the death of Mr. Robert Marnock, one of the best known English gardeners of the century, in London on last Friday, Nov. 15. The word "gardener" is used here because he was fond of using it himself, in preference to "horticulturist," or the even less lovely word "landscape-architect."

Mr. Marnock's landscape work began with the laying out of the Sheffield Botanical Gardens about the year 1837. His success there led to his being appointed by the Royal Botanic Society of London to form their new garden in the Regent's Park in 1839. Of the happy manner in which that work was done it is unnecessary now to speak. From that time Mr. Marnock formed the most graceful and picturesque gardens of his time. In his case the artist and gardener worked so well together, that in the gardens executed under his direction it would be difficult to find one in which a happy result was not attained. The same breadth of treatment, grace of outline, and natural gradations which mark the Regent's Park Gardens may be seen throughout most of his other work. Among a few of the many places either laid out or changed by him may be mentioned Warwick Castle; Hagley Hall, Staffordshire; Draycott Hall, Yorkshire; Rood Ashton, Wiltshire; Oak Lodge, Kensington; Hall Place, Tonbridge; Berry Hill and Park Place, Bucks; Greenlands, Henley-on-Thames; Wimbledon House, Surrey; Rousdon, Devon; Possingworth, Sussex; Eynsham Hall, Oxon; Wadhurst Park, Sussex; Brambletye, Sussex; Dunorlan, Kent; the park at Hastings, and many others. In 1853-54 he laid out the grounds of the Villa San Donato, near Florence, for Prince Demidoff. He was for several years horticultural editor of the *Gardeners' and Farmers' Journal*.

As curator of the gardens and manager of the exhibitions of the Royal Botanic Society his good taste and courtesy were invaluable in making the Regent's Park shows worthy of the great popularity they held for many years. Mr. Marnock was the first to arrange a flower show in a less "stagey" manner than is usual, and notwithstanding the many attempts in the same direction that have since been made, the arrangements for flower shows in the Regent's Park are still the best. On his retirement from the curatorship of the Royal Botanic Gardens, the exhibitors presented him with a handsome testimonial as an expression of their esteem for the way he had managed the exhibitions of the society. While Lindley at Chiswick was hated by the gardeners, Mr. Marnock, in the Regent's Park, had their good will, and at last won the leading place for the park shows.

A portrait, by Mr. Blake Wirgman, of Mr. Marnock was presented to him in 1879 with the following address, written by Dean Hole:—

We, the undersigned, are authorised to express, in presenting you with your portrait, our high appreciation of your talents as an artist, and of your amiable qualities as a friend. Believing you to be the most successful landscape gardener of your time, we congratulate you upon the great and beautiful work which you have done, and we trust the remembrance of the happiness which you have conferred on others will make you happier in your declining years. We pray that when these shall end in peace, the faithful likeness which we now offer with affectionate respect may be a solace to those who are near and dear to you, and we know that not only will your memory be fondly cherished by those who may survive you, but that for many a generation the name of Robert Marnock will be remembered in those pleasant homes where he developed all the grace which Nature suggested, and where "he made the desert smile."

As Mr. Marnock's works differ so much from what is often called "landscape architecture" in this and other countries, it may be as well to state the sources of its inspiration. It was the result of a keen love of Nature. To the last he never, even when travelling in a railway carriage or other conveyance, ceased to look keenly at earth and sky. If only a hedgerow, there was for him a lesson in it. One April day, in 1887, we went with him out of a London fog into a large Oak wood in Sussex, the first spring after the underwood was cut. The lichened stems rose out of many acres of Primrose and Ladies' Smock. He was happy as a child in it, and said, "What is all our gardening to this?"

Robert Marnock was born at Kintore on Donside, Aberdeenshire, on March 12, 1800. He was one of a group of remarkable young Scotchmen who soon took the foremost places in British gardens about half a century ago, among them being Moore, of Dublin; Fraser, landscape gardener, in Ireland; Mackay and Bain, of the College Botanic Gardens; Wilkie, of the Phoenix Park; and Niven, father of the late curator of the Botanic Gardens, Hull.

If there be anything worthy of honour in these fleeting scenes of light and shade we call the world, it is a long, well-spent life. Mr. Marnock lived to be nearly ninety, and only ceased work a few years ago; indeed, till lately he used to help old clients and friends. For some years past he spent the summers with his daughters at Crathie, in Aberdeenshire, rambling for many days over the high mountains to see the wild flowers. This, as he wrote me, was a good way for an old Scotchman to spend his last summers. In his early years it was more usual for young men to know something of our native plants, and this knowledge came in for his delight in these happy summers spent in the Highlands. He has often said that the past few years of his life were the happiest, and his creed was that of the simple, earnest Christian. As we are constituted, the end of such a life is a victory, not a sorrow. He was a fine type of the true gardener—not aiming to be more, and yet welcome as a gentleman anywhere. Such a life, too, helps to show that gardeners

if true to their work may help to give their art its just place, and save it from being, as it has often been in public places, put under the rule of men without either training or sympathy for it.

To one so thoughtful and who knew so well what goes on in our suburban graveyards, it is not surprising that in his last long illness his mind turned to the subject. While giving full consideration to any drawbacks the system may have had in its early years, and to being thought eccentric by some, he expressed a wish that his body might be reduced to its elements by cremation. This wish was faithfully carried out by his children, the body having been cremated at Woking on Tuesday last. On Wednesday his ashes were buried in his wife's grave at Kensal Green. That grave is only one step from the grave of another famous gardener, J. C. Loudon, and nearly opposite that of Tom Hood. W. R.

NOTES OF THE WEEK.

Flowers in Cornwall.—Mr. John Vivian, Meadowside, Hayle, writes: "Cyclamens, winter Gladiolus (*Schizostylis coccinea*), Tea, Hybrid Perpetual, Monthly, La France, and other Roses, Paper-white Narcissus, Christmas Rose (*Helleborus niger*), &c., are blooming merrily here."

Cratægus Oxyacantha præcox (the Glastonbury Thorn).—I enclose a spray of flowers of this, as I think it is flowering unusually early this year. There are several fine specimens of it here, all of which are, and have been for the last fortnight, in flower. As a rule it is in flower here about Christmas.—J. M., Royal Victoria Park, Bath.

Chrysanthemums from Norwich.—I have been intending to send you a few specimens of our Chrysanthemums, which have been very fine, but, unfortunately, have put it off till they have begun to go a little, but you will see they are good.—K. A. SPURRELL.

* * * Most noble flowers, and perfectly firm in texture.—Ed.

Salvia Grahamiana is still in full flower in the open border. This I never remembered to have seen before. It stands a considerable amount of frost, but long before now it has usually been severe enough to destroy the buds. It may be increased from cuttings, and the old plants lifted are very useful for greenhouse work in late autumn and early winter.—K.

***Saxifraga longifolia*.**—This Rockfoil is as pretty now as when out of bloom. Its leaves are encrusted with bright silvery scales, and arranged in a similar way to those of *Hechtia argentea*. These plants, though belonging to two widely removed genera, have much in common as regards appearance. The Rockfoil is like the *Hechtia* in miniature.

Shrubby Trefoil (*Ptelea trifoliata*).—There is an old, but vigorous specimen of this North American tree near what is called the rustic arch in the Royal Gardens, Kew. It is well worth a note for its striking aspect, as every branch is laden with bunches of the greenish white keys. We have seldom seen a specimen in finer condition than the one at Kew.

Strawberries in November.—An example of the extreme mildness of the season is the fact that I have to-day (Nov. 13) gathered a quantity of Black Prince Strawberry. The berries are fair-sized and perfectly formed, but, of course, will never ripen. Being close to the sea there has been no frost to speak of; such things as Dahlias, Carnations, Roses, Stocks, and many hardy annuals are flowering, while Primroses, Hepaticas, Polyanthus, and some Rhododendrons seem to be dangerously forward for their blooming season.—T. STRATTON, Aberdeen.

***Kniphofia Quartiniana* or *foliosa*.**—In my note on this interesting species in last week's GARDEN I stated that it was an acaulescent species. This I now find to be incorrect. At the time my notes were taken the plant, though in fine flower, was entirely stemless, and I then thought it to be acaulescent. Since last week, however, I have had an opportunity of seeing one of the original plants from Mr. Elwes,

and it certainly has a stem as fully developed as any I have yet seen on *K. caulescens*. There can be no doubt about its belonging to the caulescent section.—D. K.

Chrysanthemums in Finsbury Park.—This exhibition, which closes to-day (Saturday), has been one of the finest held in this London park. The late varieties were remarkably fine a short time since, such as the clear yellow-coloured Mr. H. Cannell and the new Etoile de Lyon, which was far less coarse and richer in colour than we have seen it elsewhere.

Nymphæa kewensis is a beautiful tropical Water Lily, and keeps on flowering as long as any of its class. It is a hybrid between *N. devoniensis* and *N. Lotus*. The flowers are of a brilliant cherry-rose colour, shading to white at the base of the shell-like petals. All who have a tropical Water Lily house or a tank for aquatics should make a note of this charming hybrid.

Nymphæa Lotus dentatus is quite different to *N. kewensis*. It is a noble variety, the flowers quite a foot across, and of the purest white. A plant of it at Kew has several of the glorious flowers expanded. The leaves are almost as striking as the flowers. They are peltate, sometimes as much as 2 feet across, and distinctly toothed or serrated at the margin. It is one of the finest of tropical Water Lilies.

The new Fern house at Kew is a distinct gain to the Royal Gardens. It is a well-built structure, with comparatively little wood used, and not, we need scarcely say, glazed with green glass. The fallacy as to the benefit of green glass on Ferns is exploded, and though the new house has been only recently finished, the Ferns already show a stronger and better growth under the natural light. The next step should be to reglaze the other houses.

The Cape Ivy is not an Ivy, but a *Senecio*. The English name is quite appropriate, as the leaves strongly resemble those of an Ivy, *Hedera sagittifolia* in particular. A plant is flowering still in the Cactus house at Kew. The flowers are like those of a yellow Marguerite, the colour pale yellow, and the ray florets eight to twelve in number. For entwining round a rafter there are few more distinct and handsome climbers than the South African *Senecio macroglossus*.

***Ficus elastica albo-variegata*.**—We send you by sample post a leaf of our variety of *Ficus elastica albo-variegata* taken from a plant 12 feet high, with over eighty of such leaves clothing it to a foot from the pot, every leaf as well and clearly variegated as that sent.—ROBT. P. KER AND SONS, Aigburth, Liverpool.

* * * The leaf sent was the handsomest we have ever seen of this plant.—Ed.

Orchids at Kew.—Several interesting Orchids are in flower at Kew, amongst the number *Catasetum macrocarpum* and *C. longifolium*. The first named has broad greenish yellow sepals and petals, spotted with a purplish colour; lip orange-yellow, lower portion suffused with green. It comes from Tropical America. *C. longifolium* might be passed by, as the flowers are of an unattractive brownish colour, the inside of the lip deep yellow. This is the second time it has bloomed at Kew this year. *Dendrobium superbiens* is also in bloom, and a beautiful thing it is.

The winter Gladiolus (*Schizostylis coccinea*) is flowering remarkably well at Kew, both on the rockery and on the narrow border that runs round the Orchid house. It is a sweet thing for the open air at this season, its flowers quite scarlet, and produced in the same way as those of a Gladiolus; hence its appropriate English name. It is more often seen in pots in the greenhouse, but such fine patches of it as may be seen in the open air at Kew should make it more popular for the outdoor garden.

Golden Sage (*Salvia aurea*).—Though a Cape species and an old inhabitant of gardens, having been cultivated by Miller in 1731, it is perhaps the hardiest of what may be termed summer bedding Sages. I have had it for several years against a sunny south wall, flowering all through the summer and in open weather until quite late autumn. The large flowers, which are produced freely, are not a clear (aurea) yellow, but of a rusty brown-yellow. The leaves are roundish, hoary or silvery, and have a pleasing appearance all through the year. It becomes quite a dwarf shrub, and may be readily increased from cuttings.—K.

Moth Orchids at Clapton.—The Phalænopsis will soon be a feature in the Upper Clapton nurseries of Messrs. H. Low and Co. Thousands of spikes are rising, but it depends solely on the weather as to their ultimate end. The flowers of

the Phalænopsis are the first to suffer from the influence of fog, the buds even being cut off. *P. amabilis*, *Schilleriana*, *Sanderiana*, and *leucorrhoda* were in bloom, also a very fine form of the last mentioned. The sepals and petals are richly suffused with rose, and the lip is wholly of a warm shade of the same colour; it is an exceedingly beautiful flower. In the Phalænopsis house 1000 spikes have been seen open at one time, and the beauty of such a sight can be better imagined than described. We should have just as fine a display this year if the air keeps free from fogs. Messrs. Low have a pure white form of *P. violacea*, whose flowering will be looked forward to with interest. The dried blooms show it to be a rare gem of great purity.

Fogs and Orchids.—There are few flowers fogs so quickly destroy as those of Orchids. This is possibly owing to their extreme delicacy, as in the Phalænopsis, as even the buds are touched. Occasionally we see a beautiful spike with the extreme end of every petal and sepal quite brown through injury by fog to the bud. This of course entirely destroys their beauty. The flowers of *Angræcum sesquipedale* are just as quickly affected; they are cut off wholesale in such a nursery as that of Messrs. H. Low and Co., where the numerous plants are now showing an abundant display of buds. Fogs have increased in density and hurtfulness to such an extent, that it is hopeless to expect flowers that are soon touched by them in London or its suburbs during the winter months. Nothing done so far to check this increase has proved effectual or even lessened the evil.

Notes from Almondsbury.—Two very sweet-scented plants now in bloom in the greenhouse are a little single *Camellia*, lately named by Mr. Baker as the wild variety of *Camellia sasanqua*. This kind has single pink blooms with very little scent; mine is pure white when fully expanded, a delicate rose-pink when in bud. These single *Camellias* are, I think, not often seen; mine came some years ago from the late Mr. Hovey. They bloom profusely. The other flowering plant is a white *Daphne* with variegated leaves, each leaf having a white edge; the scent is very delightful. The spring flowers here are very advanced; a large number of Daffodils have their leaves high out of the ground, and the number of autumn and summer flowers still in full beauty is very large.—C. O. MILES.

Chrysanthemums at Kew.—The finest collection of Chrysanthemums grown in as natural a way as possible, that is, with only two stoppings of the shoots when the plants are young, is in the temperate and greenhouses at Kew. The flowers are not perfection from the exhibitor's standpoint, but they are in good character, and cover the plants, so that comparatively few leaves are visible. Val d'Andorre is remarkably fine; the flowers are large and of the richest orange-chestnut colour. It is one of the most useful of all at this season. Mrs. Haliburton, the rich yellow Chevalier Damage, Elaine, Mr. Charles Pratt, an Anemone variety, white with a yellow disc, Cullingfordi, Jardin des Plantes, and Mr. W. H. Burbridge, a semi-double, but very beautiful variety, white with a yellow centre, were a mass of bloom. Very few decayed flowers could be picked out, but on exhibition specimens the bulky blooms soon rot from the long-continued damp and fog that have prevailed this season. In the narrow border running round the museum facing the pond in the same gardens is a beautiful show of outdoor Chrysanthemums, quite a delightful feature at this season. The varieties in the best condition are Janira, a very free-flowering variety of a rich deep rose colour; Bouquet Fait, and Mrs. Haliburton. Such a display should be seen in many gardens, and it may be had by planting good hardy kinds that will stand fog and damp.

***Helianthemum formosum*, or *Cistus formosus*,** as it is usually called, makes one of the most charming rock plants we know when properly placed. It seems to be one of those plants that require very little soil, and, indeed, we have found that the more we starve it the more freely it blooms, and

yet remains quite healthy. The flowers, which are produced all through the summer months, are large, of a bright soft golden-yellow, with a rich purple spot almost forming a ring near the base. Unlike *H. halimifolium*, it does not even require the shelter of a wall, and, indeed, the more it is exposed the better it seems to thrive. Our plant is on the top of a large border, with only a few inches of very poor stony soil, yet it appears in excellent health, and shows a vigour not surpassed by those growing in rich soil.

Saxifraga luteo-purpurea.—The first of the Saxifrages (excepting the *Fortunei* group) to bloom with us in the open air is this handsome hybrid. It may be found in many gardens under the name of *S. Frederici Augusti*, an erroneous Continental name, which has nothing whatever to do with our present plant. It seems to be a natural cross between *S. media* and *S. aretioides*, with the primrose-coloured flowers of the latter, only larger and more numerous. It is one of the best of the dwarf alpine section, growing as it does with such vigour and forming dense masses of closely packed, dark green, narrow-pointed leaves. It is, of course, as hardy as either of its parents, and is flowering now quite as profusely as we have ever seen it in spring. It is easily managed, requiring plenty of loose lime rubble and rather stiff loamy soil. It may be readily increased by division of the old clumps, and we have also managed it from cuttings.

Gum Cistus.—So far, our plants of *Cistus ladaniferus* have not been hurt, and the leaves are as green as they were in midsummer. It is a most charming kind, and it is very unfortunate that it gets so severely damaged in severe winters, being often killed outright, unless in the most favoured districts. Its near ally, *C. laurifolius*, and the variety *maculatus* are both perfectly hardy, at any rate they are so in the neighbourhood of London, where they have many difficulties to overcome in the way of climate. They both flower from early June to August, and in the case of the latter, it is not unusual to see huge bushes covered with their pure white and purple-blotched flowers. Gum Cistus should be planted in dry well-drained ground on banks or slopes, the latter being the most suitable, when *C. laurifolius* at least will soon recompense the grower for the trouble taken. They are both easily increased from cuttings, and the latter also from seed, which ripens freely in the neighbourhood of London.

Two Solanums of striking appearance at this season in the herbaceous ground at Kew are *S. guineense* and *S. laciniatum*, the last known as the Bird Solanum or Kangaroo Apple. They are both of very distinct aspect. *S. guineense* is now covered with a mass of black fruits about the size of those of a small Cherry, carried in clusters of about eight. This profusion of fruits hanging on the leafless stems makes an unusual feature in the garden. *S. laciniatum* is quite different. It is synonymous with *S. aviculare* and of noble appearance. The plant spreads out into a large bush, rising at Kew about 4 feet high, and is easily distinguished by the large much-divided leaves of the richest green colour. The fruits are the size of a small Plum and deep green. It is described as a greenhouse shrub, but it should be used in the flower garden and sub-tropical arrangements to make picturesque effects. Its native countries are Australia and New Zealand, from whence it was introduced as far back as 1772.

Presentation to Ernest Benary.—This well-known seed grower completed his seventieth year on the 10th inst., and the fiftieth year of his connection with the Erfurt business. The occasion was marked by a presentation from his two sons, and a congratulatory address signed by members of twenty-one English firms; this address is as follows: "Dear Sir,—We, whose names are appended, having enjoyed the pleasure of personal friendship and acquaintance with you, and had business transactions with your firm for many years past, desire to offer you our hearty congratulations on attaining your seventieth birthday. We desire to express on behalf of a numerous body of friends and corre-

spondents in the United Kingdom the great respect and esteem in which you are held, and our high sense of the honourable manner in which you have conducted the business commenced by you fifty years ago. Though you have reached the age which is regarded as the allotted span of human life, we trust you will be yet spared for years to come in health and strength to enjoy in honoured old age the continued friendship of—"

Lilium auratum.—Last week I cut my last blooms of *Lilium auratum* out of doors, and very fine ones they were. I planted 100 imported bulbs last February against a south wall and where very little sun reached them. They have done remarkably well, and, as recorded above, they are only just over. I shall leave the majority where they are, and shall be curious to see whether flowering so late they will ever mature their bulbs and do well next year.—LOXWOOD, *Sussex*.

Outdoor Carnations at Christmas.—With reference to the remarks of "W. P.," Oct. 16 (p. 467), as to the chances of getting outdoor blooms at Christmas, allow me to state that I cut a good handful of as good blooms as any we have had this year on Saturday last, the 16th inst., after reading his note. The scent was beautiful, and should the mild weather continue they will be even more plentiful in a month's time, and there is quite a good crop of buds in various stages of development. The plants that have the most bloom are seedlings that flowered the first time last summer, and the fringed White Clove that is seldom out of bloom. I quite agree with "W. P." that anyone wishing for an unfailing supply during winter must not rely on outdoor flowers, as only a short spell of sharp frost would destroy them; at the same time one likes to prolong the outdoor flower supply as late as possible, and seldom have I seen such a number of varieties in bloom after the middle of November.—J. G., *Hants*.

An old plant of Traveller's Joy (*Clematis Vitalba*).—At a recent meeting of the scientific committee of the Royal Horticultural Society Mr. Henslow exhibited a photograph of, and described a plant of the Traveller's Joy, or Old Man's Beard, which grows in his garden near Drayton Green, Ealing. It is evidently of great age, as the stem at the base is about 9 inches in circumference. From this proceed several thick branches; half of the plant then spreads over a thick Holly hedge about 5 feet to 8 feet in height. The *Clematis* extends to about 30 feet each way, completely covering it with foliage and dense masses of blossoms. One branch crosses an arched trellis and climbs to the roof of the house, whence, intermingling with Virginian Creeper, it hangs in long festoons to the ground. The superficial area covered by the part on the hedge alone is about 150 square yards. The remarkable feature in the case is the enormous and vigorous growth the *Clematis* has made, and yet it is in ground with only a foot or two of earth over fine red gravel, constituting the uppermost and most ancient of the gravel beds of the Thames, there being, as far as is known, not a trace of calcareous matter in the soil. Nevertheless, the plant is usually described as a chalk-loving species. At all events, it is found abundantly on the chalk of Kent, the oolitic limestones near Cheltenham, and the carboniferous limestone near Bristol, &c. Mr. Burbidge suggested that it was just possible, growing so close to the house, that there might have been buried there a quantity of old mortar, &c. The ground, however, was lately excavated for a drain within 4 feet and 10 feet, when nothing but red gravel was exposed.

Variegated Mallow (*Lavatera arborea variegata*).—This is a really beautiful plant when well grown. It is one of those plants which one does not care to be without. A row of it at the present time is a charming sight, though, unfortunately, it is not so hardy as the type; a very wet or severe winter spoils it or kills it outright. I usually select two or three of the finest marked specimens and place them in pots. If put under glass and kept watered and well attended to, even the largest

plants grow on as if nothing had happened. Although not a very abundant rooter, comparatively small pots satisfy them if they are moved with a ball of earth attached. For persons having large spaces to decorate or furnish, they would be found of great service thus treated. As it is rather short-lived, the best way is to sow seed every year. In deep rich soil, the plants reach 4 feet, with a stem 2 inches in diameter, at the end of the first season, at which time they are at their best.—J. M., *Charmouth, Dorset*.

Potato rates to England.—Ex-Bailie Whyte Forfar, has addressed the following circular to the directors of the various Scotch and English railway companies, in terms of a resolution passed at a meeting of Potato merchants, farmers, and others held in Perth on Friday in regard to the excessive rates said to be charged for the conveyance of Potatoes from Scotland to England:—

"At a meeting held in Perth last Friday representing about two-thirds of the Scotch Potato merchants and others, the following was the resolution agreed upon: That a committee be appointed and that a strong petition be at once got up and signed by authority, a copy of which to be despatched not later than Tuesday to all the chairmen of the Scotch and English railways, also to all the general managers and goods managers of those railways, and that a committee should appear before the first railway conference in support of the petition. We beg respectfully that you take into your serious consideration the urgency of an immediate and substantial reduction of Potato rates to all parts. From the splendid qualities and samples we have this season, if you assist us as asked we will be able to send large quantities south, which otherwise would be partly consumed by cattle and made into farina. We are now informed that your conference is to be held in London on the 13th of December next. We therefore ask you if you will be pleased to receive a deputation on the subject at the meeting on 13th December."

Hardy flowers at Broxbourne.—We have sent for your inspection to-day a small gathering of hardy plants which are now still beautiful with us here in our loamy soil at Broxbourne. The exceptionally mild weather, of course, allows *Aster grandiflorus* to flower well. This is one of the most distinct of all the family, bright and gay, always blooming simultaneously with *Helleborus niger maximus*, with which when cut it contrasts well. *Saxifraga luteo-purpurea* in the rock garden is also showing well for flowers, numerous clusters of the clear sulphur blossoms being already expanded. This is a very compact species in growth, forming dense cushions, thickly studded with flower-stems about 3 inches high, produced in long succession from now till April. *Senecio pulcher* has plenty of buds yet to open. This plant loves a rich loamy soil, and is without doubt one of the finest hardy plants that can be grown in a garden. *Geum miniatum*, a garden hybrid between *G. aureum* and *G. coccineum*, is also a very valuable plant, producing plenty of useful flowers of a bright orange through many months. *Tritoma Burchelli* we find one of the most useful, being only 4 feet high and very free. All our plants are now (Nov. 19) well in bloom. *Colchicum autumnale* fl.-pl. is the best for general use, the flowers lasting much longer than those of any of the other varieties. We shall be glad to know whether *Geum aureum* is a species or a hybrid.—PAUL AND SON.

BOOKS RECEIVED.

"*Ferrieres and Aquaria*," a complete Guide to their Formation and Management. By George Eggett, Sen. Dean and Son, 160A, Fleet Street, E.C.

"*Flower-Land*." Illustrated. An Introduction to Botany. By Robert Fisher, M.A. London: Bemrose & Sons, 23, Old Bailey, and Derby.

Names of plants.—*E. Walsh*.—1, *Lycopus europæus*; 5, *Pentstemon campanulatus*.—*Brown*.—*Nephrodium dilatatum*.—*Subscriber*.—*Benthamia fragilera*.—*G. A. Stone*.—We do not name florists' flowers.—*Donesfield*.—1, *Brassica* sp.; 2, *Maxillaria picta*.

WOODS & FORESTS.

FORESTRY.

ALL experienced foresters in this country are fully aware of the evil results to the growth and health of trees by too sudden exposure in the course of thinning plantations. In order to avoid this foresters usually prefer gradual thinning by removing small quantities at a time and repeating the operation. It would appear that the evil influences of sudden exposure are pretty well understood among foresters. On some parts of the Continent, as well as in this country, rings of bark are removed from the trees which it is intended ultimately to thin out, so that they may very gradually die off, and thus allow the neighbouring trees to close in upon each other. This plan may answer on the Continent, but it cannot be practised in Great Britain and Ireland with advantage, for the simple reason that the dead trees form regular breeding grounds for beetles and insect pests that are destructive to the healthy development of the trees left upon the ground for a crop. In place of killing trees and leaving them standing on the spot for a series of years to afford shade and shelter, I cut and remove all dead and dying trees at once, and in cases where such cannot be immediately taken off the ground the bark should be removed from the stem, as it is always between the bark and wood of the trunk that insects deposit their eggs. Enterprising foresters in this country do things much better and on more rational principles than by removing a ring of bark from the tree in order to kill it, and then allowing it to stand for a series of years as an eyesore, and as breeding quarters for insect pests. On exposed situations where it becomes necessary to thin with extreme caution, in place of cutting out at once the trees to be removed, they should be stem-pruned by cutting back the side branches and occasionally removing a few tiers of branches close to the stem. These trees are left as a shelter to the permanent ones until their final removal becomes necessary. By this mode of treatment there is no risk of increasing the numbers of insects, and when the trees are no longer wanted as nurses, they can be gradually cut out, and being fresh and sound can be turned to good account. This is far superior to the Continental system of ringing the trees to attain the same results, and I should strongly advise foresters and others to have nothing to do with such a system for the reasons already pointed out.

Young trees in this country are generally planted at a distance apart of from 3 feet to 4 feet, and in most cases such trees have closed in upon each other after a growth of some eight or ten years, and then require to be thinned out to afford space for the plants to furnish both root and branch and thus lay the foundation for a profitable timber tree. I have no hesitation in saying that many young plantations of great promise have been ruined for want of timely and judicious thinning after a growth of from ten to fifteen years. When trees are grown thickly in early life they are always deficient in root, stem, and branch, and wanting in that firm stamina which is so necessary for their future development. If we grow trees in dense masses they may acquire the size of useful drawn-up poles and spars, but they will never attain the size of trees of the first magnitude according to their species. The teaching of arboriculture should always be simple, never mixed up with doubtful theories that cannot be backed up by the experience of every-day life, and any departure from this

standard is sure to prove a miserable failure. I cannot agree with those who go in for foreign methods of tree culture, based upon the views of writers who evolve new novelties and theories unsuitable for the requirements of this country. At the same time I do not deny that improvements may not be effected in many things in connection with tree culture, but such must be properly defined before we put them into practice.

J. B. WEBSTER.

The Eastern Plane.—From the earliest times the Plane tree has been associated with Persia. The Persian gardens are ornamented with avenues, under which the owners sit and enjoy the balmy breeze. The Persian also performs his devotions under the shadow of the Plane, and hangs upon it the garments and other articles offered as a sacrifice to his deity. Many of these garments hang to the bark by rusty nails, until they drop to pieces of their own accord.

Contract work (Surrey).—The felling and clearing of timber may be let by contract or done by day labourers. In ornamental and park woods the latter is by far the preferable way, for it not unfrequently happens that when let by contract the work is performed without due regard to the remaining crop of trees, these being damaged in felling that portion that is to be removed. Where a whole plantation is to be cut outright, clearing by contract is to be recommended. The following prices are those generally paid, and will no doubt be found about what "Surrey" can get the work taken in hand for: Felling, 8d. to 10d. for 25 feet; faggotting, 4s. 6d. per hundred; barking, 40s. per ton.—A. D. W.

Hedges in damp situations.—I contemplate enclosing with young hedges two fields which I have recently reclaimed from unenclosed hill pasture, and am perplexed as to what sort of hedge plants will be most likely to succeed in the situation. Perhaps some of your readers would be kind enough to give me the benefit of their experience. The fields lie in a rather exposed situation, and they are thoroughly drained, but the soil is naturally of a damp description and with a depth of 10 inches or 12 inches of stiff clay underneath. A little general information about the different hedge plants, their management and the conditions requisite for their forming healthy and thriving hedges would be interesting and useful to many of your readers.—B.

Trenching new plantations.—Wherever tree planting is intended to be carried out, it is important, if a profitable result is desired, that the ground should have been previously well prepared. Whatever is worth doing at all is worth doing well; and although trenching, whether it be done with the spade or with the steam plough, involves a good deal of expense, still I am convinced such an operation will, in the long run, pay. The most thriving plantations with which I am acquainted were trenched 20 inches deep, and the bottom of the trenches well broken up with the pick, the subsoil (poor sand) was brought up to the top, and the top spit placed in the bottom. It should always be borne in mind that in a plantation of young trees there is very little chance of improving the lower stratum of soil after the trees have once been planted; but in the preparation of the ground, if the bottom spit be brought to the surface, the exposure to the air, together with the falling leaves and other decomposing vegetable matter, will materially improve it. The young trees may not start so rapidly during the first year or two, in consequence of the best soil being placed at the bottom of the trench, but as soon as the roots begin to strike downwards, the effect of the deepening of the soil will soon be apparent, and in ten years it will be still more remarkable. Of course it is only in new plantations where trenching can be properly carried out. In the south of England and other places, where the undergrowth stands until it gets large enough for Hop poles, there are always vacancies to be filled up after every cutting. Spanish Chestnut and Ash are generally used for this purpose, and by digging large holes the plants

in time become established and do pretty well; but if, instead of filling up a vacancy here and there, a large break had to be planted, the expense of digging wide holes and planting would be as much or more than trenching, and the result by no means so satisfactory. Trenching, in some instances, is, however, impracticable and undesirable. In one of the most thriving young plantations of Scotch Fir with which I am acquainted the young seedlings sprang up spontaneously, and all that was necessary was periodical thinning of the young trees.—E.

As a seaside tree the Austrian Pine is most valuable, as in exposed maritime situations it grows to a good size, where few other coniferous trees will succeed. I find it will grow in situations where other trees become stunted and one-sided by the prevailing winds. Under such circumstances, the side branches of this Pine grow out to windward, with a healthy and robust appearance. The greatest difficulty I experience with this Pine, when growing in extremely exposed situations, is to keep it in an upright position. Wherever it is planted along the margins of plantations it gives a bold and impressive appearance to their outlines, owing to the denseness and dark hue of its foliage and the spreading habit of its branches.—L.

Fine trees out of place.—How often in our rambles do we observe trees planted in situations in nearly every garden and pleasure ground that would almost cause one to imagine that little thought and consideration had been previously given as to the amount of space they would require for extending their growth, or the size to which they would ultimately attain. Everywhere do we find fine old Cedars, Larches, Cypressess, evergreen Oaks, and even Poplars, Yews, Horse Chestnuts, Elms, and other large and ornamental trees, planted close to old castles, mansions, halls, &c., and still such misplacement is continued. Often a pot plant of a newly-introduced tree is bought, and a conspicuous spot is chosen for the reception and future development of the little favourite, hence the reason why we find stately and handsome trees planted so near mansion houses. During their infancy, all goes on well; but as they grow older, they increase in stature, and, if not removed, they ultimately attain dimensions which render them quite unfit for the situations they occupy, in some cases darkening the house, and in others obstructing a free view of the distant landscape.—J.

Fir forests in Switzerland are very general, and a special interest and value belong to them from the position they occupy. They form a protective barrier that nothing can replace. The soil is clasped by roots. The whole surface below the trees is covered with Moss or Lichen, or the binding growth of shade-loving plants. Thus torrents may fall without displacing the earth; snow may accumulate, but, melting slowly, the water escapes imperceptibly. The importance of encouraging and preserving intact great stretches of woodland on the slopes of the mountain to check landslips and preserve the soil cannot be overrated. Looking narrowly into these closely-packed woods with the critical eye of a forester, the waste of timber seems deplorable; but the necessity of preserving a compact barrier of living trees is greater than an accurate observance of the rules of forestry. The Spruce, of which there are three varieties, invariably predominates, and the timber it produces is of an excellent quality, supplying the wants of the people with fuel and building material, for, in spite of the abundance of good stone, wood still seems to be more generally employed in all country places, and happily, for what can exceed the picturesque beauty of the Swiss chalet?—W.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

GLASS HOUSES FOR CHOICE PEARS.

HAVING on several occasions strongly advocated the erection of plain, inexpensive houses for the finest sorts of Pears, the present scarcity of good English fruit may remind well-to-do readers of THE GARDEN that an investment in this direction will pay. As far back as 1856 the late Mr. Bewley, of Dublin, built a very large span-roofed house on an elevated plateau specially for pyramidal trees, but he lived and moved in advance of the times, as very few growers got beyond the cultivation of small trees in pots. The house in question, to the best of my recollection, was composed of plain rebated rafters some 5 feet apart; all the lights were portable and so simply arranged, that the whole of them could be removed partially or entirely in a few hours when the crop was safe. The gravel forming the plateau when I saw it had not been disturbed, but pyramids, some 6 feet to 10 feet in height and 3 feet or 4 feet through, had been lifted with balls and arranged on the hard, yet porous base, when the intervening spaces were filled in with suitable soil. In those days there prevailed an opinion that Pears were impatient when in flower, and although the fruit could be fed to a large size, the flavour was indifferent when set, grown and ripened under glass. Where the Jargonelle, Bon Chrétien, and other early autumn varieties were grown, this opinion over and over again has been proved correct, as we still find that small russetty examples from pyramids and bushes are infinitely superior to large clear-skinned specimens from trees against walls. These early varieties, however, are not the sorts I would grow under glass, for, coming in as they do when other fruits are plentiful, I would trust to the elements and give all the available space to the cream of the winter Pears, which do not always melt when grown against good south and west walls. Large, lofty, and airy houses in which the temperature does not fluctuate, no doubt, are best for all fruits which merely require the shelter of glass when in flower and have the whole growing season before them, but they are not absolutely necessary, as the now fashionable cordons can be grown for years in a span-roofed house or lean-to no larger than an ordinary Peach, Plum, or Cherry house. But, be they large or small, lean-to facing south or span-roofed facing east and west, the roof lights should be movable, the wire trellis 16 inches from the glass, and to aid in time of need, a 4-inch hot-water pipe running round the basement. Pears when in flower must be kept in a house through which a free circulation of fresh air can be maintained in all weathers; when bright, dry, and mild, artificial aid beyond that secured by a glass roof is unnecessary; when damp, dark, cold or foggy,

dry fire-heat is absolutely necessary, not only for the maintenance of the circulation, but also for the prevention of condensation of moisture on the petals and pollen, which must be kept dry, otherwise, as all gardeners well know, it cannot perform its office. The best trees undoubtedly are cordons on the Quince stock; the best medium for the roots, narrow elevated borders composed of good loam running along each side of the house; and the best sorts, those which stand in the first rank and succeed each other from November onwards. It is just possible that a dozen varieties more or less duplicated would give a supply of the choicest fruit from the end of October well into March, and these certainly may be selected from the following, taken, as some say, in the order of their ripening. This, however, is simply impossible, as the same varieties hardly ever ripen at the same time two years in succession. Beurré Superfin, Brown Beurré, Doyenné du Comice, Marie Louise, Beurré Diel, Thompson's, Passe Colmar, Glou Morceau, Knight's Monarch, Zephirin Gregoire, Winter Nelis, Josephine de Malines, Easter Beurré, Beurré Rance, Olivier de Serres, Jean de Witte, Bergamote Esperen. Some of the newer varieties, as a matter of course, might be tested, and if found as good or better than those enumerated, their culture could be extended, as Pears on the Quince can be moved not only with safety, but up to any age when grown in narrow borders. In cold uncertain localities where good early Pears often get cut off by spring frosts, such sorts as Beurré Gifford, Beurré d'Ananlis, Jargonelle, Emile d'Heyst, and Louise Bonne of Jersey might be grown in pots and plunged in warm borders in the open air about the first or second week in June. W. C.

ORCHIDS.

W. H. GOWER.

THE SWAN ORCHID.

(CYCNOCHES CHLOROCHILON.)

SOME beautiful flowers of this superb old Orchid come from a Mr. Cruickshank, who says, "These flowers are from some Orchids sent me from Demerara. Are they not fine? Can you tell me something of the plant?" These flowers belong to a genus which is very apt to play tricks, not that I know myself of this species ever having done so, but some of them do, sometimes producing flowers of one kind and quite different ones at another, and sometimes two sorts of flowers upon the same spike. Why this is or how it is, I do not think is properly understood. *C. chlorochilon* has been an inhabitant of our stoves about fifty years, having been first grown by the Messrs. Loddiges in their famous emporium at Hackney, but we cannot say how the flowers of this Orchid may vary if this genus should again become popular. In these days any variations or eccentricities of plants can be and are so publicly registered that we should soon hear of them. The plant in question has bulbs each some 6 inches or more high, and very much resemble those of a *Catasetum*, a genus, indeed, to which it is closely allied. It bears several strongly plaited leaves, which are pale green and deciduous; these fall off after the growth is finished, and

the plants from that time forward may be kept dry and cooler. The scape is produced from near the upper part of the bulb, but is not terminal, and bears two or three flowers of the size of those now before me, each of which is upwards of 5 inches across. The sepals and petals are green, with a tinge of yellow; the lip stands uppermost and is ivory-white, with a prominent fleshy protuberance in the centre, and a large blackish or purplish blotch at the base. The column is very long and slender, curved like the neck of a swan, from which peculiarity the generic name is derived. The flowers will last three weeks or a month in perfection, and the sender of these blooms says they have been open a month with him and they are in an excellent state of preservation. This may arise from the season at which they appear. The plant usually blooms earlier in the season, and then the flowers do not last so long in beauty. The plant should have very little water given it just now, and when it has finished its growth and cast its leaves, the water supply should cease altogether, and the plants beset upon a shelf at the cool end of the Cattleya house, but care must be taken that they do not become too dry and that none of the bulbs are decaying. If showing the least signs of being too dry, a little water must be given from time to time until the bulb has plumped up to its normal condition, and if any decay has set in, the part affected should be carefully cut away and a little lime dusted over it. Upon the first sign of new growth appearing a little water should be given, and as soon as new roots begin to show the plants should be repotted. Some people say that *Cycnoches* do not require repotting annually, but I have found them to be coarse feeders, and that they are greatly benefited by having a good portion of the old soil removed and replaced with fresh peat. When repotted the plants should be placed in a warm and sunny position in the house in which they have rested, but after a little time the temperature of the East India house will suit them best; here they should have good exposure to the light, but must be shaded from the burning effects of the midday sun in summer, or the leaves will become damaged and turn yellow. They may have an abundant supply of water to their roots and in the atmosphere, but avoid syringing overhead. We have not a sufficient circulation of air in our stoves to allow of this, and the water thus given lies in the sheaths of the leaves and is apt to cause the upper part of the bulb to rot, and when this occurs no flowers will be forthcoming. If strong growths are obtained the plants will flower freely.

Cypripedium Medusæ.—This is a very curious plant, now flowering in the Burford Lodge collection. It is remarkable for the dense head of small flowers, which are of a creamy white colour, with yellow dots, and the sepals are much lengthened out into long, narrow, tail-like threads, which have given rise to its fanciful name. It is a curious, rather than a beautiful, Orchid, and can only be found in such a collection as that at Dorking, but it well deserves more attention. The plant is said to be a native of Singapore, and requires the temperature of the warmest house.

Dendrochilum Cobbianum.—This pretty little plant commemorates Mr. W. Cobb, of Sydenham, who has been a zealous grower of these plants for many years. In general habit it resembles *D. latifolium*. The raceme is long and the individual flowers are larger than in some of the species; the sepals and petals are white and the lip yellow. It is not so showy as the Golden Chain (*D. filiforme*), and it does not yield a delicious perfume like *D. glumaceum*, so that it takes but a second-rate position in the genus, but it is a very chaste and pretty kind. It was recently flowering in the collec-

tion at Kew. It comes from the Philippine Islands, and, like all the species, requires the warmth of the East India house when growing.—W. H. G.

Cypripedium Schlimi.—Flowers of this species are to hand from several readers, and they vary considerably. In some the petals are profusely dotted with crimson towards the base. I am pleased to see this species becoming such a general favourite, and there can be little doubt, if the plants are given sufficient water, they will thrive well. The best plants I know of this species are in the collection of Mr. Tautz at Shepherd's Bush, where Mr. Cowley, the gardener, grows it in the warmest house, and I think both Mr. Measures at Streatham and Mr. Measures at Camberwell grow this plant in considerable warmth. I have seen this plant in several collections under the cool system, which certainly does not appear to suit it so well under cultivation.—W. H. G.

Cypripedium Seegerianum.—This pretty hybrid form we noted recently flowering both in The Woodlands collection at Streatham and also in that at Cambridge Lodge, Camberwell. The plant is one of a batch of seedlings obtained by Mr. Seeger, of the Nurseries, Lordship Lane, Dalwich, and is a cross between *C. Spicerianum* and *C. Harrisianum*; the leaves are somewhat longer than those of the first-named parent, but they are faintly tessellated with a deeper green. The dorsal sepal is white, flushed with rose, having a deeper stripe up the centre, the remaining portion of the flower being much the same as in *C. Harrisianum*. It appears to be gaining more beauty as the plant becomes stronger. Being an autumn and winter bloomer it is a welcome addition to our houses at this season.

Cattleya Hardiana.—"G. McP." sends a flower which he says was produced by a plant sold in London for *C. aurea*, and is much disappointed by its turning out wrong. This he need not be, for the form he has is of more value than *C. aurea*, and it is a form of the kind known by the name given above, which is a natural hybrid between *C. aurea* and *C. gigas*. Take especial care of it, and grow it well next season, when I have little doubt but that it will be much improved, but it may continue to be a poor variety. Natural seedlings will produce bad varieties as well as garden plants, and "G. McP." must put up with it if his is one of them, but I should like to see it after another year's growth.—W. H. G.

Cattleya Bowringiana.—It is rather late for this species to be flowering, but I have recently received a very fine truss of blooms from a gentleman, who wrote me rather hastily about it last season. He says, "I wrote you rather sharp and hastily last season about this plant, and I find after growing the plant well a second season, it is as you said it was, a real beauty. Last season I only had the one miserable flower I sent you, but this season I have eleven trusses, and none of them with less than six flowers, one bearing eleven flowers, and which I send you." Well, I again say this is one of the most superb *Cattleyas* we have, and it flowers at such a dull season which makes it more valuable. The flowers now before me are bright rose, lip same colour on the outside, the front being deep purple, stained at the base with a deeper shade which gives it an eye-like appearance, whilst the basal part and the throat are white; it is a *C. Skinneri* flowering in winter. It was introduced from Central America by the Messrs. Veitch, and they tell us, "It is found growing on cliffs by the side of streams and waterfalls, and where the atmosphere is charged with moisture during the dry season, whilst during the wet season the rainfall is very heavy," whilst as its native locality is British Honduras, it is a plant that likes heat and moisture all the year round. Already some good plants of this species are becoming established, and I have seen some good displays of it this autumn. Thrips appear to be its greatest enemy whilst growing, which to me appears to indicate a too dry atmosphere.—W. H. G.

Odontoglossum tripudians.—Flowers of a very pretty form of this species come from Mr. Tautz, Studley House, Shepherd's Bush. It is the

variety with the bright yellow lip, and which, I think, bears the name of *Xanthoglossum*, a colour which contrasts best with the rich deep crimson of the other parts of the flower. One does not see this species so frequently as its free-flowering character warrants. Indeed, we are told by those who have seen the plant in its native home that it flowers there all the year round, and it would doubtless do the same with us after becoming properly established. Its home is New Granada, at 8000 feet to 9000 feet elevation, so that very little fire-heat is necessary for its cultivation.—W. H. G.

Lælia anceps Hilliana.—Thanks, Mr. Collins; this is certainly the first white *anceps* I have seen this season, the sepals and petals being pure white, whilst the front lobe as well as the front of the side lobes are all tipped with bluish pink. I do not know if it is because this is one of the older varieties, and the plants have therefore become better established than some of the white varieties, but I have more frequently observed this form flowering than any other white-flowered kind. There is something in these varieties which hitherto has prevented them flowering so freely as the typical plant. We can grow them larger and stronger, but there is something in the after treatment which we have not yet solved.—W. H. G.

Trichosma suavis.—I am glad to find how popular this plant has become, but we appear to have changed its season of flowering, for some few years ago, and quite recently, too, I used to look for its sweet flowers about the month of March. I have noted this season that most of the flowers are over in the month of November, in the collections round London at any rate. It thrives well in the cool end of the Cattleya house, but I see many growers keep it in the East Indian house, which may account for its early flowering. The only variety I have seen is *T. suavis trilabella*, which varies from the type just as *Dendrobium Cooksoni* does, its petals being coloured just the same as the lip. This variety is in the collection of Mr. Tautz, of Shepherd's Bush, and it is, I fancy, a unique plant. A flower of this variety came to me recently from Mr. Cowley, the gardener. The plant comes from the Khasya Hills, and was, I believe, named by Lindley at first *Ceolgyne coronaria*, from which genus, however, he removed it in 1842.—W. H. G.

Cattleya Walkeriana.—A short time since I noted this pretty plant flowering in the Kew collection, and it struck me as blooming at a peculiar season. I used to see this plant shown years ago at the summer exhibitions in London. The flowers vary considerably in colour, but all the forms make a distinct growth, upon which the flowers are borne. This growth comes out from the base of the bulb, so that the blooms are lateral, and not terminal, as in nearly every other species of the genus. The flowers, mostly borne in pairs, round and very large for the size of the plant, each measure upwards of 4 inches across. The sepals and petals are of a pleasing shade of rosy purple; front lobe of lip rich deep crimson, the base straw-coloured. This plant was first found by Gardner growing upon trees in the vicinity of streams, and he named it after a Mr. Walker, a companion of his. It is by many considered a somewhat difficult plant to manage, but I have always grown and flowered it successfully, and with me its fragrant flowers usually appeared about the month of May. It does not like much material about its roots, and I have been more successful with this *Cattleya* when grown upon a block of wood than in any other manner, although I have seen it equally as well done in shallow baskets, well drained, with a little peat about its roots. The greatest number of flowers I ever had upon a plant at one time was seven. The plant should be hung near the roof glass in full exposure to the sun and light, shading only being required during the hotter part of the day, but during the summer season it requires frequent applications of water to the roots, particularly if grown upon blocks. During the winter I like to remove the plants further from the glass, this position being oftentimes a very cold one, and I do not believe it likes a very low temperature at any time.

The plant has long been known and grown in this country, and it is only within the last few years that it has become so plentiful.—W. H. G.

Angræcum ichneumoneum.—This pretty plant has been in flower for some time in Mr. Tautz's garden. I was always aware that this species was a long time in making its spikes of bloom, and Mr. Cowley assured me that this plant took eight months from the time its spikes first showed until the flowers appeared. The flowers are curious, dull white, and remarkable for the thickened spur and for their fragrance, which is something between that of *Stephanotis* and *Jasmine*. It cannot be called a showy species, but it is an exceedingly curious plant, and is well deserving a place in collections. The plant should be grown in a basket, as its spikes are pendent and a foot or more long, several being produced together.—W. H. G.

Saccolabium cæleste.—Flowers of this beautiful species come from "C. J., Portsmouth." It is one of the most charming species yet introduced; the spikes will increase in size as the plants gain strength. I have seen them 9 inches and 1 foot high, which I should suppose to be about the full height, and densely laden with numerous flowers. Yours appears to be the bright cerulean blue variety which I consider the best, although some growers prefer the forms tipped with a much deeper blue. The plant requires strong heat and moisture, and should not at any season be subjected to drought. True, it may have a dry season in its native home, but there are heavy dews rising at night which help to sustain the plants during the day. Do not dry your plants during the winter months, but make horticultural skill assist Nature; this I can see plainly it does with *Orchids* frequently, as many of them make stronger and altogether superior growths to their home-made ones. In other cases we have not yet achieved so much success.—W. H. G.

Catasetum macrocarpum.—*Catasetums* appear to be more in favour now than they were a few years ago. Perhaps the appearance in 1885 of *C. Bungei* has been the means of attracting more attention to this curious and, in many instances, handsome genus. *C. macrocarpum* is one of the oldest and most ornamental species. The spike ascends from the base of the pseudo-bulb and bears a dozen or more flowers. The outer segments are yellowish green, with a pinkish tinge outside, spotted with purple inside. The lip is exactly the shape of a Monkshood, thick and fleshy, and of a bright orange-yellow. The greatest interest, however, lies in the column. From near the apex two horns proceed downwards into the lip, curling round the base of it. When either of these is touched, if the flower be sufficiently matured, the pollen masses are ejected with great rapidity, and being glutinous they adhere firmly to any substance with which they come into contact. *C. macrocarpum* is a native of Mexico, and is now in flower at Kew.

SHORT NOTES.—ORCHIDS.

Pleione Wallichiana.—This Indian *Crocus* was recently very finely in flower in the Kew collection, and we are very pleased to see it so late. It is a pity the plants should be brought on so soon. We used in days gone by to have the houses gay with this kind, *P. maculata* and *P. lagenaria* about Christmas.

Spathoglottis angustorum.—This is an exceedingly beautiful plant, for which, if we mistake not, we are indebted to M. Linden, of Brussels. It has been in flower for months in Mr. Tautz's collection at Studley House, and is much esteemed there. The flowers are white flushed with rose colour and the spikes have produced an enormous quantity of bloom. It grows well in the intermediate house.

Cattleya fausta bella.—This is one of Mr. Seden's hybrids, raised between *C. Loddigesi* and *Lælia exoniensis*. It is a form in which all the parts of the flower are nearly white, the lip being stained at the base with yellow. It is pretty, but not so telling as some of the Veitchian hybrids which have *L. exoniensis* for one of its parents. It is now flowering in the collection at Burford Lodge.

Sarcanthus.—These are all small-flowered plants, and unless "J. W." has a large collection of

Orchids he may leave them alone with advantage. "J. W." appears to live at no great distance from Kew, and he should go there just now and see *S. pugioniformis*, which is in flower. This species is one of the largest growing and flowering kinds, and he will then be able to judge for himself if the species are worth care and attention as cultivated plants.

NOTES OF THE WEEK.

Cattleya gigas.—A very good form of this comes from Mr. Walker, the Gardens, Shelley House, Holgate, York. The flowers are rich in colour and of good form, but we have finer varieties in cultivation.

The Hall and Fraser Fund.—Mr. F. Horsman, Hollybrook, Colchester, the hon. secretary of the fund, writes: The total amount received and promised towards the fund now reaches £400. Further contributions will be gladly received.

Chinese Primulas.—An interesting lot of blooms of several varieties of Chinese Primulas comes from Mr. John Carter, of Keighley. The trusses of flowers are large and well grown, but there is nothing equal to the old double white so largely grown by market growers in the neighbourhood of London.

Chrysanthemums from Burton-on-Trent.—Mr. C. Fenton, Lullington Hall Gardens, sends us two Chrysanthemums, one a seedling and the other a sport from M. Baco. The first was too poor to give an opinion of, but the sport, which seems promising, should be kept and grown another year.

Anthurium ferrierense, a hybrid between *A. ornatum* and *A. Andreanum*, makes a pretty feature mixed with foliage plants in the house near the Kew Green entrance to the Royal Gardens. The spathes are about 4½ inches long and about 4 inches in width, the colour being a kind of rosy red. It should be grown more to give variety in our stoves.

Cypripediums at Upper Clapton.—To show how useful this genus is, the following members were recently flowering freely in Messrs. H. Low and Co.'s nursery at Upper Clapton, in spite of the fogs: *C. Hookeri*, *Haynaldianum*, *calophyllum*, *Curtisi*, *ciliolare*, *Sanderianum*, *Elliotianum*, and *Rothschildianum*, all rare and good kinds.

Desfontainea spinosa at Scarborough.—I send a bloom or two from a plant of *Desfontainea spinosa* growing in the open ground at Haybrook. It flowered in early summer, and is now in full flower again. The plant is in perfect health, and has no protection of any kind. I have also *Escallonia macrantha*, *Philippiana*, and *illinita*; also large plants of *Choisya ternata*.—G. T. DALE, *Haybrook, near Scarborough*.

Nerine undulata.—This makes a pretty group in the Heath house in the Royal Gardens, Kew. It was introduced as far back as 1767, and has tall slender scapes bearing a head of soft flesh-coloured flowers with wavy segments. *Amaryllis undulata* is the same thing. Though not so bright and beautiful as such kinds as *N. coruscans*, *venusta* and *Fothergilli*, it is charming at this season.

Gardeners' Orphan Fund.—We are pleased to learn that a concert recently given in the Vestry Hall, Chiswick, in aid of this deserving institution has resulted in a sum of £12, and one at Worksop, for the same object, realised over £50. Thus the fund will profit by £62 through the energy of gardeners, who should all consider it a duty to support such an institution.

Thuja obtusa.—A curious dwarf Japanese tree, *Thuja obtusa*, brought by Mr. Samuel from the Paris Exhibition, was exhibited at a recent meeting of the Royal Botanic Society. The specimen was stated to be about 130 years old, and only some 2 feet in height. The secretary stated that these dwarf Japanese trees were good illustrations of the power of endurance of plants and trees under severe ill-treatment. In the society's garden may be seen several specimens of the common Oak, between forty and fifty years old, yet only some 10 inches or 12 inches in height. They were planted as an edging to a flower border, and kept clipped like the old-fashioned Box.

Effects of London fogs.—We have received a circular from the scientific committee of the Royal Horticultural Society containing a series of questions in reference to the effects of London fogs on cultivated plants. Only this year's experience is asked for. Specimens of plants showing injury caused by fog to either flowers or leaves may be sent for examination, accompanied by full particulars, to Dr. D. H. Scott, F.L.S., Normal School of Science, South

Kensington, S.W., or to Dr. Francis Oliver, F.L.S., Royal Gardens, Kew. It is desired that the returns be made up to the end of March, 1890, and then returned to the Secretary, Royal Horticultural Society, 117, Victoria Street, S.W.

Calceolaria Burbidgei was flowering recently in the greenhouse at Kew. It has large, rich yellow flowers, not unlike those of the old *amplexicaulis*, but the growth is straggling and ungainly, the plant growing between 2 feet and 4 feet high. It is too untidy and rampant for a small house. This hybrid was raised by Mr. F. W. Burbidge from a cross between *C. Pavoni* and *C. fuchsiaeifolia*.

A marvellous Chrysanthemum.—We translate the following from *Le Moniteur d'Horticulture*: If we can believe the *Tasmanian News*, J. Bidscope, a nurseryman of Hobart Town (Tasmania) has growing in the open air in his garden a Chrysanthemum named Mme. Frank Tompson, which produces flowers of 10 inches to 11 inches across. The flowers of this Japanese Chrysanthemum are purple, with the petals margined with white.

Chrysanthemum La Joyeuse is a lovely flower, as free and graceful as anyone can desire. Its colour is creamy white, with a suspicion of soft yellow in the centre. The shoots are wreathed in bloom, as many as eight flowers on some of the slender stems. Of course they are no larger than a crown-piece, but size counts for nothing when we want graceful sprays of bloom for decoration. It is in the collection in the Chiswick gardens of the Royal Horticultural Society.

Iris Bakeriana in bloom now in the open border at the Hale Farm Nurseries, Tottenham, is one of the prettiest and most interesting of the *Iris reticulata* group. The general expression of the flowers and shape of the bulb are like those of *I. reticulata cyanea*, but the flowers are larger and more decidedly coloured. The standards are deep lavender, falls white or pale lilac, spotted and veined with deep purple blue, and with deep velvety crimson or black lamina. They are, like those of the type, sweet-scented.

Poinsettias.—These are now very bright at Lythe Hill. Both *P. pulcherrima* and *P. plenissima* are grown, the latter variety carrying its bracts much longer than the former. The plants are arranged in a house 33 feet long with a centre path and beds on either side. The plants, clothed with healthy leaves down to the pots, are carrying heads of bloom varying in size from 10 inches to 18 inches in diameter. It is surprising that so few Poinsettias are grown, considering how highly they are esteemed and how quickly they come into use. Mr. Evans only propagated the above plants in August. For several years he has practised this system instead of the old one of propagating in May.

Chrysanthemum Bronze Shield.—A variety in the Chiswick collection is worth a note for its resemblance, as far as the hair-like processes on the petals are concerned, to Mrs. Alpheus Hardy. The flowers are almost as characteristic in this respect, but in colour they are quite different. Bronze Shield is a kind of incurved Japanese variety, the flower compact and rich yellow in the centre, with the lower petals shaded brown. Another kind of the name of Don Quixote also has the hairy florets; this is rich lilac, with a whitish margin to the florets.

Vanda Amesiana.—One of the most interesting Orchids in bloom with Messrs. H. Low and Co., Upper Clapton, is *Vanda Amesiana*, which, together with *V. Kimballiana*, was introduced last year. The good opinion then formed of it is strengthened by what we see of a more recent importation, which shows this to be a gem of its class. The flowers of *V. Amesiana* vary in colour, but usually have a rich rose-purple lip and white sepals and petals. Their sweet scent and delicate beauty are delightful; but, unfortunately for London growers, the flowers appear in winter, just when they stand every chance of destruction by fogs. Although there are hundreds of plants in the Clapton nursery, fogs prevent a free display of the exquisite blooms. The plants in the second importation are taller and with thicker leaves than those of the first; but their robustness is remarkable, and that cool treatment will probably suit their requirements is evident from the frost-bitten shoots on some of the plants. In their native home white frosts occur, and Messrs. Low are trying the plant in a cool temperature such as agrees with *Odontoglossums*. We hope the experi-

ment will be successful. As many as eighty flowers are carried on one spike in its native habitat, and they branch out in a free way, telling us that in this quite new introduction we have an Orchid that is not only beautiful, but thoroughly useful, which cannot be said of all kinds. It is unnecessary to give a detailed description of either *Vanda*, as both have been fully described in THE GARDEN.

Poison Tree of Queensland.—*Laportea moroides* is in fruit in the stove at Kew, and it is interesting by reason of its peculiarly hurtful character when touched. It is necessary to take unusual care when handling the plant not to touch the hairs, which cause acute pain, and even paralyse the arm. The plant at Kew has dentate leaves, and from the main stem spring racemes of fruit which in appearance and colour are like unripe Blackberries. The genus comprises about twenty-five species, spread over the warmer parts of the Old World, and includes both shrubs and trees, *L. gigas* rising to a height of 80 feet in its native habitat.

Trichinium Manglesi is flowering freely in the Cactus house at Kew, and is well worth note, as it is an interesting New Holland plant very little grown. The flowers are like balls of wool with rosy skeins running through, and borne at the end of somewhat weak shoots. Few seem to be able to grow these plants well, but at Kew they succeed in a sandy soil and moderate warmth. It can be propagated easily by seeds and also by cuttings of the roots. This is done by turning the plants out of the pots and cutting up the stouter roots into lengths of about an inch. Prick them into sandy soil, and let the upper portion be just below the surface; then place them in a warm greenhouse.

Chrysanthemums out of doors are having a fine season, as the weather keeps very mild, and we are free from rough gales of wind, so that even the tender white kinds are in full beauty in the open air. What is even more remarkable is that the comparatively tender Anemone-flowered sorts are blooming beautifully, many of the flowers out of doors being more perfect than those of the same kinds under glass. The fogs that have been so destructive to large exhibition flowers do not appear to affect ordinary decorative blooms to anything like the same extent, and as the Chrysanthemum is now so largely grown in gardens, both large and small, the lengthened display of the queen of autumn flowers has been welcomed by all.—J. G., *Hants*.

Lasiandra macrantha is just now in full bloom with Messrs. Veitch and Sons at Chelsea, and the deep rich purple flowers are welcome in the gloom of autumn. It is a lovely thing when grown in the greenhouse, but its usual home is a stove, where it merely exists, never showing the wealth of bloom when grown in the greenhouse. The plants at Chelsea are in 5-inch pots, and not more than about 18 inches, or at the most 2 feet high, each shoot having a cluster of flowers. In this form the *Lasiandra* is a useful flower, and such results are to be had by striking cuttings about May, and pinching the shoots a few times to induce dwarfness of habit. The plants must not be brought in from their summer quarters in the open until the buds are well set. The beautiful variety *floribunda* was also in bloom, and succeeds well with Messrs. Veitch when shaded during the summer. The flowers are three times as large as those of the type, deeper in colour, produced singly up the stem, and they appear throughout the year, while those of the parent are borne in winter only and several together. Both come from Brazil. The first mentioned was introduced in 1864, and the variety in 1870. Those who have hitherto only grown these two *Lasiandras*, or *Pleromas* as they are more often called, in the stove, should try them in the greenhouse.

Cosmos bipinnatus.—This plant failed with me this year, but it will certainly be tried again next season if I can procure seed, which I believe cannot be obtained in England. It is worth growing for its foliage alone. This year the plants potted up from the open

ground and those grown in pots dwindled away before one tenth of the buds had expanded. If I grow it again I shall leave some specimens to take their chance in the open. Our garden is favourably situated for flowering it, as we have at the present time (Nov. 25) plenty of nice fresh blooms on the scarlet Cactus Dahlia.—H., *Sandwich*.

Cyclamen coum is already, owing, doubtless, to the mild autumn, showing bloom. It is a charming little species and a most useful rock plant, its very showy, though small, bright purple flowers being very welcome early in the year. We have always grown this class of Cyclamen, including ibericum and the various forms of Atkinsi, said by some to be hybrids between these two, in loose *débris* composed of rough leaf-soil, old mortar, and a little stiff loam; they do very well, and never fail to yield flowers in abundance. Where space can be allowed these Cyclamens in a cold frame, they may be grown in pots or round pans, flowering much earlier, and for corridors, cool conservatories, &c., they will be found very useful, as they continue in bloom for a very long time.

The large St. John's Wort (*Hypericum calycinum*), distinguished chiefly by its very large flowers, is a much rarer plant than it ought to be in large gardens. Instead of having bare spaces under tall trees always covered with Ivy, plant *H. calycinum*, and I am certain the change will not be regretted. In winter the bronzy leaves and graceful stems are always pleasing, and in summer when covered with its large golden yellow handsome flowers it is very handsome. We have found the St. John's Wort very useful for belts and covering bare banks, for which purpose with us at least it has superseded the Periwinkle. It may be increased to almost any extent by division, which is best done in autumn.—K.

Saxifraga luteo-purpurea.—This pretty early flowering Rockfoil is commencing to bloom freely just at a time one can value its primrose-yellow coloured flowers. It is a hybrid between *aretoides* and *media*, and was first introduced by Messrs. Paul and Son, who received a first-class certificate for it from the Royal Horticultural Society on March 13, 1888. It is more robust than its parents and flowers profusely in spring, though it also gives a display in November. The flowers are the size of a halfpenny, rich primrose-yellow, and borne on a stem about 2 inches high, the pretty rosettes of leaves being covered more or less with silvery scales. A plant of it is in flower at Kew. There are few better Rockfoils for a pot than this, as it blooms freely both late and early in the year.

The trailing Daphne (*D. Cneorum*).—What a handsome little rockery shrub this pretty species of *Daphne* makes when doing well. It is common to the South European mountains, is perfectly hardy, and requires only the ordinary treatment given to rock plants of this class. A somewhat peaty soil and not too exposed a situation suit it. In company with such plants as *St. Dabeoc's Heath*, *Rhodothamnus Chamæcistus*, a handsome dwarf alpine *Rhododendron*-looking plant, the North American *Chimaphilas*, and the near allies of *D. Cneorum*, *D. rupestris*, and *D. Blagayana*, a most charming and intensely interesting group is formed, which gives pleasure almost all the year through. Added to these one might have the *Cassiope*s, *C. tetragona*, *C. hypnoides*, and *C. fastigiata*, *Galax aphylla*, and the beautiful new *Shortia galacifolia*, which appears as amenable to this treatment as the stronger growing *Galax*. Their chief requirements will be occasional waterings during very dry summers.—D.

Chrysanthemum Mrs. Alpheus Hardy.—As there are so many conflicting statements regarding this new variety, I send you a bloom so that you may judge for yourself as to its merits. Regarding the distinctive character imparted by the downy appearance caused by hairs on the back of the incurved petals there can be no doubt, for although it adds a very novel aspect to the flower by daylight, it is greatly intensified under strong artificial light. I have no doubt that when this variety is better known it will be in great request for evening wear amongst ladies, as the downy appearance

and loose nature of the petals that are characteristic of its true Japanese origin render this kind altogether distinct from the true incurved varieties, that are too heavy for any decorative work. Its purity of colour ensures its being extensively used wherever white flowers are in request, for very few of the vast number of white *Chrysanthemums* in cultivation can equal, much more excel this variety in purity of colour. I have enclosed a leaf to show the robust character of its foliage, for although a good many have failed to get it to grow freely this year, I do not think there is any real fault to be found on that score. The plant from which the bloom sent was cut was received June 1, and owing to the excessive propagation to meet the great demand for it, it was very small, and I was afraid I should not get a bloom. It grew away quite as freely as any of the older sorts, and has produced three other blooms each of about the same size as the one sent. Next season I have no doubt this variety will be seen in much better condition, as plenty of cuttings without any forcing are now obtainable.—JAMES GROOM, *Gosport*.

Smilax pyramidalis.—There is here another species not included in your list last week, *S. pyramidalis*, which I got from Messrs. Henderson many years ago. I send a spray of it. At one time I raised a number of plants of *S. aspera* from seed obtained from Italy. These, as well as *S. mauritanica*, which is deliciously fragrant, and in certain states of the atmosphere diffuses its odour far about, *S. laurifolia* and *S. pyramidalis* flower freely enough, but neither has ever favoured me with berries. Could they be induced to do so, their pretty clusters of fruit would greatly add to their beauty and value. I suspect none of them ever, or but very sparsely fruit in this country.—J. M., *Charmouth, Dorset*.

Bluets.—*Houstonia cærulea* is a very interesting little plant, and a very useful one for rockeries or bog beds. As a rock plant the only difficulty with it is that it invariably flowers itself to death, and it has to be renewed annually, which is fortunately very easy, as it may be broken up to almost any extent. In a bog, or what may be termed such, with a small brook running through it, the *Houstonia* thrives beautifully, the tufts being almost half-a-foot in diameter, close, and cushion-like. Here it flowers more sparingly than in the drier ground, but is more luxuriant, and is always green. It is stated to have been introduced about 1785, and has long been a general favourite, producing, as it does, its abundance of milk-white blossoms from early summer until late autumn. The blue or lilac form seems to be very scarce, but I hear of one of our nurserymen having lately introduced it, so that we may expect to see it offered soon.—K.

Scented Chrysanthemums.—The show at Hull on the 21st and 22nd inst. was considered, I believe, as a whole, a fairly successful one, if giant blooms and contorted proportions, that are not always, very happily, attained by the cultivator or manipulator of the flower-heads, are to be recognised. But where were the scented forms that we came expressly to see and delight in? *Progne*, *Mrs. Langtry*, and a few others, chiefly semi-double blooms, were made to do duty; and when it was asked where were the trays of scented *Chrysanthemums*, that no other society had succeeded in producing and bringing to the fore, we were simply informed that, owing to the "coldness of the hall" and the "low temperature," the fragrance was not perceptible! Still prizes for fragrant blooms were duly awarded by the judges, the weather alone being at fault! No allusion was made to the subject at the evening conference of the growers, though I looked and listened for it. I do not refer to this as having a personal interest in the show, but having twelve months ago closely examined and scrutinised these reputed scent glands on the florets, both of the so-called scented and non-scented forms, I could but detect the identical crystalline processes existing alike in each, and I naturally was led to look for some other explanation that might honestly and satisfactorily account for the presence or absence of fragrance in one and the same species of the

genus *Chrysanthemum*. I grant that a faint *Pyrethrum*-like aroma is present in the leaves rather than in the florets of the plant, but beyond this I can detect nothing that is not found in others that compose the family group of the *Chrysanthemæ*, as tabulated by Dr. Lindley.—PETER INCHBALD, F.L.S., *Hornsea, Holderness*.

Peristrophe speciosa (*Justicia*).—This is a desirable plant, and, flowering as it does throughout the dull winter months, is sure to be found useful. The flowers are purple, a colour which is not always obtainable for the greenhouse. During the summer the plants should be grown in a frame exposed to all weathers until there is danger of frost, when they may be removed to a slightly warmer place, and finally to the greenhouse, where they continue to bloom all the winter.—G.

Reinwardtia trigyna.—This *Reinwardtia* is one of the most useful winter-flowering shrubs for the side stages of a warm greenhouse. It is grown in quantity for this purpose at Kew, where groups of this and *Reinwardtia tetragyna* are used together with good effect. To have neat presentable plants it is necessary to strike the cuttings early in spring and grow them on in heat, stopping the shoots two or three times to induce a compact growth. Towards the autumn an abundance of sun and air is necessary in order that the wood may become thoroughly ripened. If this be attended to, an abundance of the bright orange flowers will result.

Calceolaria Burbidgei.—This handsome Slipper-plant has been for some time past flowering in the greenhouse at Kew, where its utility as an autumn flowering plant seems to be much appreciated. It is a charming variety and does exceedingly well either planted out in an intermediate house or grown in pots. If grown in pots, those of a large size are the best, as the plant flowers better when allowed an abundance of root room. Under favourable conditions large bushy plants, 6 feet or more high, can soon be had. These if well flowered are very striking.—F. G.

Luculia gratissima.—A large specimen of this planted out among the Camellias in the greenhouse at Kew is now flowering freely. It is rather surprising that the culture of such a charming plant should be neglected in private gardens, as few things are more suitable for the conservatory than this fragrant winter-flowering shrub. It does best in a cool house, and will seldom flower freely in heat, but as seedling plants are rather slow to make head-way when young, it is better to give them an intermediate temperature until they are large enough to plant out.

Primula obconica.—The value of this for decoration during the autumn and winter is now well known. Of course, it requires a warm greenhouse, and the great secret of success seems to be to never allow it to get pot-bound. Even when only of a medium size we pot the plants into $4\frac{1}{2}$ -inch pots, which should be well drained. The plants should never be allowed to become dry. They will soon begin to make headway and flower, continuing more or less all through the winter months. This species is said to have poisonous properties, which often seriously affect many people handling the plant. I have handled the plants a great deal, but have never felt anything whatever in this way.—K.

Maggot destroying Grapes.—I enclose for your inspection a small caterpillar-like maggot, which is a great enemy in vineries. I have found a number of my Muscat Grapes spoiled. It attacks the berries around the stem and then eats them away until they drop from the bunch.—A. L.

* In reply to the above, I am sorry to say I was unable to find any maggots either in the bottle or among the Grapes. The bottle had some coaguline left in it. This I melted out with warm water and carefully examined in watch glasses under a microscope, but failed to find any insects. Kindly send another specimen.—G. S. S.

BOOK RECEIVED.

"Annual Report of the Board of Park Commissioners, City and County of San Francisco." 1889.

FLOWER GARDEN.

ANNUAL CLIMBING PLANTS.

WITH all the wealth and variety of hardy and half hardy climbing plants there should be no bare walls in our gardens. Even among climbers that are of annual duration only there are great variety and beauty. They are especially useful for low walls or fences, or for shutting out some unsightly object. Even those who raise the rather weak objection of the injury to the walls caused by wiring or nailing up permanent climbing plants, and refuse in consequence to clothe or adorn the bare walls of the house, may

would be too rampant, and it is noticeable that the plants do not all flower at the same time. In a previous note I alluded to one of our plants being in flower, whilst two others under the same conditions had then showed no sign of bloom. These flowered later, but owing to their lateness they never became so beautiful as the early one. A single spike lasts many weeks, so gradually do the buds open and remain fresh upon the plant. Probably it will not produce seed with us in the open air, otherwise seed might be saved from those which exhibited the most desirable tendency to flower early, but by starting with strong plants raised early and hardened off ready to plant out as

mixed seed will give great variety. It appears to thrive well in towns, for during the past season I frequently saw it in the little front gardens of cottages in and about Ipswich, trailing over a wooden fence or trained upon strings around the window. In all cases the plants looked as fresh and were flowering as freely as ours under much more favourable conditions. The Ivy-leaved Morning Glory (*Ipomæa hederacea*) is another most desirable kind with cut leaves which somewhat resemble those of an Ivy. The flowers are a little smaller than those of the first named species, but in them there is the same delightful variety of rich or delicate tints, and it has the additional merit of being a little hardier, for it will succeed and flower well if the seed is sown in April where the plants are to remain. These *Ipomæas* prefer a warm and rather rich soil. They do remarkably well upon a light sandy loam.

Among the *Convolvulus*es are some delicately beautiful climbing kinds with perennial roots, but as the stems are of annual duration only they come within the category of annual climbers. Our native *Convolvulus Sepium*, although a pest in some parts of the garden, is one of the prettiest climbers, but it should be planted where it can extend at will and do no harm. If planted where it can ramble over unimportant shrubs, such as Box or Laurel, or allowed to drape a hedge, it will give no trouble, but annually charm us with its festoons of leaf and flower. *C. Scammonia* is a slender trailing species that will ramble a long distance during the season. I once saw it covering an arbour in a very pretty way, and its frail shoots were laden with white flowers. *C. sylvaticus* is another fine kind, graceful in foliage and flower, and most at home in a semi-wild place. *C. pubescens* fl.-pl., known also as *Calystegia*, is an exceedingly beautiful double-flowered species, useful for a low wall, trellis, or even in the open border if provided with a few branches to support the shoots which twine upon them, exhibiting to the best advantage their large, double rosy blossoms which peer out of the rich foliage. Other good *Convolvulus*es, though less rampant, are *C. althæoides* (the Riviera Bindweed) and *C. mauritanicus* (the Blue Rock Bindweed). These should be planted where their trailing shoots can hang as a curtain of delicate beauty over some projecting stone upon the rockery. Both are extremely pretty, especially the first named kind, which is rarely seen.

TROPEOLUMS are a varied and beautiful race of annual climbers quite indispensable in the garden. Few things grow more rapidly, are more showy or profuse in flowering, although the first frost cuts them down. The various coloured forms of *T. majus* and *T. Lobbianum* are most useful, but the popularity of these has led to the comparative neglect of other fine species. The Canary Creeper (*T. canariense*) is a very pretty annual, and deservedly popular in gardens. *T. pentaphyllum* is a pretty species rarely seen, but valuable for wall or trellis. I saw it very beautiful last year, rambling all over the sunny side of a cottage porch in a Sussex garden. It likes a warm sunny position. The flowers are orange-red, with a conspicuously large spur. The Flame Nasturtium (*T. speciosum*) is the most brilliant member of the family, but it requires special positions, which cannot be afforded it in many gardens. Where a suitable position exists, it should be planted, for it will well repay any trouble taken to establish it. It is never more beautiful than when rambling upon some other vegetation, such as Ivy or an evergreen hedge. I have seen it cover the face of a tall Arbor-



Tea Rose Innocente Pirola. Engraved for THE GARDEN from a photograph by Messrs. Byrne, Richmond, of a flower in Mr. Girdlestone's garden at Ascot. (See p. 504)

enjoy a summer veil of beauty without driving a single nail into the wall. Some of the annual climbers make an almost incredible amount of growth in a single season; all that is necessary is to plant them and place against the wall a spreading branch, over which they will ramble, smothering it and concealing the wall by a rich mantle of foliage and flower.

During the past season *Mina lobata* has been frequently noted as being very pretty and effective so treated. Its foliage is handsome, but becomes more so when the two branched spikes of yellow and red flowers stand boldly out from their rich background of green. Apparently it does not want a very rich soil, in which growth

soon as the weather permitted, we might enjoy the beauty of this plant for several months.

THE MORNING GLORY (*Ipomæa purpurea*).—This is probably best known under the name of *Convolvulus major*. It is one of the freest growing and showiest of annual climbers and deservedly popular, though not so often seen in gardens as it might be. If raised from seed in heat, hardened off, and planted out in May, the plants soon become established. It will festoon a branch, cover an arbour, or ramble all over a shrub. The flowers are very large and showy, and in colour embrace many pale and delicate shades of white, pink, and rose, or the rich blues and violets, and some have richly striped flowers. A packet of

vite hedge with a rich mantle of vermilion-red, brilliant and beautiful in the extreme. A cool moist situation meets its requirements best.

LOPHOSPERMUM SCANDENS.—This is another of the tender climbing plants, but it is very successful if raised in heat and planted out. It will trail over huge branches, its long shoots being well clothed with large light green hairy leaves, which produce in their axils fine rosy-pink flowers. It can be kept through the winter under glass, but it is so easily treated as an annual, that this is hardly worth the trouble.

MAURANDYA BARCLAYANA is another very elegant, tender twining plant that can be grown in the open air. It looks like a frail *Convolvulus*, and has the same variety of colour among its flowers, which embrace shades of white, pink, purple and violet. It is very beautiful in a cool conservatory, and is easily raised in heat from seed, but for planting out of doors it is better to keep the plants under glass the first season, and plant them out the following May or early in June in a sheltered and warm situation.

ECREMOCARPUS SCABER is a beautiful old climbing plant for wall or trellis, and not nearly so frequently seen as its merits would warrant. It is a rampant grower and a free flowerer; it also seeds freely and is easily raised. Upon warm soils or if slightly protected the roots will live through the winter, and the shoots spring up year after year, extending far and wide, climbing and clinging even to hard surfaces by means of spreading tendrils. The flowers are very showy, of an orange-red colour, profusely borne, and they contrast well with the rich dark green foliage, which abundantly furnishes the shoots. In average years it continues flowering till nearly the month of December, being only stopped by sharp frosts. It is an easily grown climbing plant of the highest merit. Although it will furnish a wall by itself, it will grow and flower as freely upon the face of anything like a huge *Pyracantha* or a Yew hedge. *Cobæa scandens*, popularly and appropriately known as Cups and Saucers, is another rampant open air summer twiner. It is really a greenhouse plant, and its variegated form is a foliage plant of no mean order of merit, but the type, raised from seed early and planted out, grows amazingly, and covers great space with a wealth of fine green foliage and an abundance of large flowers, borne upon long stalks, and somewhat resembling those of a Canterbury Bell. For trellises, fences, and screens the Everlasting and the annual Sweet Peas are very useful, but their respective merits are well known and recognised. An arbour of the common Hop (*Humulus lupulus*) is a most desirable thing, as the foliage is both bold and handsome. It is a splendid plant to run wild over common trees or shrubs. In the hedgerows intermingled with Traveller's Joy, it is the charm of the autumn, and I think has never been more beautiful than this year, for I certainly never before saw such a heavy crop of wild Hops upon the bine, and they were very fine and clean. The Japanese Hop (*Humulus japonicus*) is also a valuable kind, easily raised from seed if treated as an ordinary annual. It is a rampant grower, quickly covering a large space with a mantle of rich foliage. The leaves are more deeply cut and of a brighter green than those of our native species, and they retain their freshness till quite late in the year. Thus it is evident if confined to things of annual duration only, all available spaces might be clothed in foliage and flower as rich and varied as anyone could desire.

A. H.

BORDER AURICULAS.

If sturdy plants of these hardy flowers are throwing up bloom-stems freely out in the open ground, it is at once obvious that early or late potting has little or nothing to do with the development of flowers at this season, and, as the Rev. Mr. Horner has said, they bloom now because it is their nature to. Generally the season has been of an average kind; we have had heat at times, also rain and variations of temperature, so that there have been no striking contrasts to produce abnormal effects, and yet the strong plants of two years' growth are throwing up bloom freely. The flowers, however, do not open fully generally, because of the constant fogs or misty air. In the spring the air dries rapidly, but in the late autumn it does not dry; hence if a few pretty blooms expand, and when they do so very lovely they are, there comes a damp or foggy night, and next morning all freshness and beauty have disappeared. Were it worth while, no doubt many of these plants, if lifted into pots and stood in gentle warmth where there was also plenty of air, would bloom prettily for some time, but then the general character of the plants would be affected, and they would be forced to bloom from the summer crowns long before it was desirable. Without doubt, pretty as Auriculas look in greenhouses or frames, it is better for their constitutions that they should flower naturally, as the drier air of the spring-time with the brighter light then found seems essential to the full enjoyment of the refined and beautiful tints found in Auriculas of all descriptions. Admirably as the more delicate show sorts thrive under pot culture and in select compost, yet so well do the border varieties, by which I mean any of the robust alpinas, thrive in a stiff clay soil in the open ground, that it would seem as if turf loam from a stiff pasture was preferable for pot plants to the very light gritty mixtures so often formed. Naturally stiff soils harden and bake very much in pots after a few months' use, but some sand and fibry horse manure well mixed should prevent undue baking. Auriculas in the open do not require rich soil. It is for the first season productive of rank growth, and in the winter destruction by frost or excessive rainfalls. In raising seedlings of robust strains it is a good plan to sow seed as soon as ripe, and that is, as a rule, about the end of June, much, of course, depending upon the season. I like to sow in shallow pans on fine sandy soil which has been firmly pressed into the pans to prevent the seeds from becoming too deeply buried. When the seeds are sown, as they should be, evenly and not too thickly, a dressing of fine sandy loam should be strewn over the surface, and again gently pressed down and well sprinkled with water. If the pans be stood in a sunny house or frame, they should be shaded for some three weeks or so with newspapers until the seed has germinated. Then with occasional waterings, growth being slow, the plants will be found about the middle of October large enough to dibble out thinly into other pans for the winter, and about the middle of April will be well rooted for dibbling, or otherwise planting out into the open ground. Such plants as these, growing without check until the next spring, for outdoor grown young Auriculas do not seem to rest much, will bloom finely then and for several years later. If a pinch of seed be saved from the finest flowers, or a packet be obtained from the seedsman, and sown every year as described, a fine stock of hardy border Auriculas will always be at command, and materially help to beautify any garden.

A. D.

The Water Hawthorn (*Aponogeton distachyon*).—One of the most interesting phases of gardening is the naturalisation of plants, and few things are more worthy of this than the Water Hawthorn. It is a sweet, long-lasting, and beautiful thing, flowering the whole season through. It is generally supposed to be hardy only in southern and western gardens, but at Drinkstone Park it is quite at home in the lake, and was still flowering in November, whilst the plants are gaining strength each year.—H.

Anemones, or Windflowers.—The name Anemone is so commonly used now that I cannot imagine why anyone should want these flowers called

Windflowers or Woodflowers. I believe if a hundred persons were taken at random from any rank of life, if shown the plant in question and asked to name it, more than half would call it an Anemone. The pronunciation of the word is a stumbling-block to some. I was having my hair cut in a large provincial town one spring morning, and the operator, garrulous as his kind are wont to be, was telling me about a long walk he had taken the previous day, and mentioned that the An-am-own-ees in the woods were so very beautiful. I was quite puzzled for some minutes. I half thought he said Adam and Eves, and made him explain what kind of a flower it was. I then realised what he had said.—G. S. S.

Windflower or Woodflower.—After reading Mr. Engleheart's pleasant note (*GARDEN*, Nov. 16, p. 469) on Anemones more than once, I cannot make up my mind whether it is written as a joke or in earnest. I fancy it is written in joke; if in earnest I protest against it. The mistake "our dear old pedantic herbalists" and "rude forefathers" made was in attaching the name to our wood Anemone, whilst there is little doubt that it originally belonged to the *Cistus*, at least among the Greek writers. If Mr. Engleheart doubts the Greek origin of the word, he must have forgotten his Bion. The connection of the word with *nemus* is impossible, and I feel sure he can give no other instance of the Latin substantive ending in *one*. And if he will refer to his Pliny he will find that the connection of Anemone with our Windflowers has a very respectable pedigree.—HENRY N. ELLACOMBE, *Bitton Vicarage, Gloucestershire*.

Funkia grandiflora.—I have to thank Mr. G. F. Wilson for his suggestion (*GARDEN*, p. 427) that I should try this *Funkia* upon a mound of soil in a sunny position. This I will certainly do, as no trouble would be too great to successfully flower so fine a plant, which grows remarkably well in our warm loam. I have a great quantity of it, and before seeing Mr. Wilson's note I had lifted some strong tufts and filled eight large pots, and I think probably this *Funkia* might be very useful in this way. The pots will stand upon stone in a sunny position, so possibly the plants may be induced to flower freely, and even if they do not I shall have the fine foliage, which in itself renders the plant valuable and effective, and for the purpose for which I propose to use it, it will give a pleasing variety. Only a limited number of plants has hitherto been used for this purpose, but doubtless many fine hardy plants are as amenable to pot and vase culture as *Pelargoniums*.—A.

Anemones.—There are very few plants that seem to respond so quickly to the influence of the weather as Anemones, which are among the first harbingers of spring, for directly the weather becomes warm they are on the move, and quickly send up numbers of their fine showy blooms. Not only do they flower freely at the early season referred to, but it frequently happens that blossoms may be picked from them during the autumn and winter. I could at the present time pick a good many, and not starvelings, but very fine, bold and fully developed blooms. Not only have we abundance now, but we have had plenty for the last two months, and all these are, and have been, from plants that were raised in March of this year. We sowed the seed in heat, and so got the seedlings up quickly, ready for planting out in the open. This, I think, is the best way of managing these Anemones, especially if the flowers are wanted in very early, as I find those so raised are always ahead of any tubers that may be bought and planted at the usual time in the autumn. Those who are not fortunate enough to have seedlings should get roots and put them in at once, the most suitable place for them being a warm sunny border where they can have light rich soil, in which they are sure to do well. For cutting these Anemones are of great value, and a vase filled loosely with them is a most effective ornament in any room, as though the flowers while on the plants close when the sun goes down, they keep fully expanded when cut and placed in water.—S. D.

Chymocarpus pentaphyllus.—Can any of your readers suggest a reason why this climber refuses to grow here? At my former residence,

about five miles from here, it used to flourish luxuriantly, cover large spaces and increase so fast, that I had to discard quantities of tubers, but here it will scarcely keep alive. It sends up a few weak spindling shoots about 6 inches high, then stops short, and nothing will induce it to move further. I treat it exactly the same as *Tropæolum tricolor*, which progresses quite satisfactorily. I have obtained roots from different sources with a like result. Has it an aversion to sea air?—J. M., *Charmouth, Dorset*.

Cleome integrifolia.—I have a packet of seed to hand saved from plants grown last year out on the prairie near the Rocky Mountains, North-west Territory, under the above name. The seeds somewhat resemble those of Spinach, being heart shaped. Some are dark brown and some very light coloured, but possibly these latter are not ripe. It is referred to out in Canada as the Prairie Aster. Can any reader of THE GARDEN tell me if the above name is correct, and also something of its character, whether annual, biennial, or otherwise? It seems to be one of the hardy plants not much known in this country.—A. D.

CHRYSANTHEMUMS.

THE CHRYSANTHEMUM CENTENARY.

THE holding of a Chrysanthemum conference and exhibition in the Royal Horticultural Society's garden at Chiswick was a good thing done in due season, and for once, let it be said, in the right place. It was a red-letter day—two red-letter days not readily to be forgotten by those present and interested as were most of the visitors in the history, present aspects, and future progress and prosperity of such a seasonable and favourite flower. Without a doubt this Eastern beauty is indeed an autumn and winter queen, and in her most winning garb, as lit up by bright sunlight, she was welcomed at Chiswick. The spacious vinery in which the meeting was held was a delicious and cosy bower of gold and bronzy red leafage, and here and there the last luscious clusters of the vintage hung temptingly. A cynical visitor who sat beside me remarked that the meeting consisted more of talking than a show of flowers. I reminded him that it was a conference and not a mere flower show for money prizes. "Ah," he replied, "that's just it, and the result is all the big growers are reserving their finest flowers for the exhibition of the National Chrysanthemum Society at the Aquarium next week." No doubt he was quite right, although I prefer Chiswick to the Aquarium. Mr. Haywood's address was listened to with rapt attention and no little delight. Then Mr. Wright gave us his opinions on judging Chrysanthemums. Mr. E. Molyneux read a sound and practical paper on the recently added new variations of our favourite flower, and probably mentioned every new flower of note if I except Mrs. Alpheus Hardy. Mr. Shirley Hibberd told us a good deal about the history of Chrysanthemums generally.

The Royal Gardens, Kew, came out in force, sending a well-grown decorative group of plants and also a very select and interesting series of dried specimens and native Chinese drawings. Wild specimens of *Chrysanthemum indicum* and also of the so-called *C. sinense* (= *C. morifolium*) were shown, but it is worthy of remark that these two reputed wild species are much nearer to each other in general appearance than are some of the seedlings reared in our gardens. My own opinion, as based on cultivated plants as well as on these wild specimens, is that *C. indicum* is really the oldest of all Chrysanthemums alive to-day, and that *C. sinense* is merely a geographical form or development from it;

but, be this as it may, the two plants resemble each other much too closely to be separated. The main point, however, is with the cultivated variations, and of these all the forms and variations were shown. A soft straw-coloured form named Mrs. James Carter had slender hair-like florets, and, like Mrs. Alpheus Hardy, may prove the progenitor of a new race in future. A new Japanese variety from Mr. Cannell, bearing blooms 10 inches to 12 inches in diameter, was much admired, and had, I am informed, been grown on Mr. Orchard's admirable cutting-down plan. It was named *Etoile de Lyon*, and had pale peach-tinted florets shading to white, like narrow flat ribbons. Amongst other noteworthy exhibits was a dainty little Satsuma vase and cover from Mr. Wilks' collection, the body of which was decorated with Chrysanthemums of all kinds modelled in colour or enamel. White, red, purple, orange, pink, and even blue kinds were represented, the whole surmounted by a snarling little dog-dragon by way of a lid or cover. A bowl, but little less exquisitely wrought, was also shown by Mr. Wilks, and Mr. Alfred Slocombe sent through a friend a cloisonné enamelled jar, on which a very double Clematis-like blue Chrysanthemum was also shown, as also was a blue margined Tree Pæony. Several rare and valuable books were exhibited, including a very fine edition of Jakob Breynio's "Prodromus," a complete edition of the first work in which the Chrysanthemum is mentioned in European literature. It was from the library of Lord Petre, a well-known patron of horticulture, to whom presumably *Petrea volubilis* was dedicated or in compliment named. Dr. Masters sent a copy of Mr. Salter's now classical and rare work on "The Chrysanthemum," published in 1865, as also several of the drawings from Sabine's paper in the Transactions of the Royal Horticultural Society. Mr. Hemsley and other speakers elucidated the history of the Chrysanthemum in Europe, and from their remarks and other sources I have compiled the following list of authorities and dates which elucidates all that is practically known to-day, and may serve as a handy reference to present day and future readers of THE GARDEN:—

DATES AND AUTHORITIES IN REFERENCE TO THE CHRYSANTHEMUM.

- A. D.
1683. Breynio, Jakob (b. 1637—d. 1697), as cultivated in Holland, 1688-9.
1690. Rheedee (Van Drakenstein) Hort. Malabar. (1678-1703), t. 44, vol. x.
1712. Kämpfer. Amoen. Exot.
1750. Rumphius. Herb. Amboin. (1741-55), t. 1, vol. v.
1753. Linnaeus. Sp. Pl. (*C. sinensis*, white flowers, large, and *C. indicum*, single white and double small yellow), reproduced by Willd. 1764.
1764. Chelsea Botanic Garden, introduced 1754, and flowered previous to 1764, v. R. S. specimen, (Miller's specimens, No. 2112 in B. M.).
1784. Thunberg. Fl. Jap. (as *Matricaria*).
1789. Introduced to France.
1790. Loureiro. Fl. Cochinchin.
1792. Ramatoulla (as *C. morifolium*), Jour. d'Hist. Nat., vol. ii. (Paris).
1794. Moench. Suppl. et Method., pl. 1794. Suppl. 1802.
1795. Introduced to England from France.
1796. Curtis. Bot. Mag., t. 327. (The first large-flowered Chrysanthemum bloomed in England).
1797. Willdenow. Sp. Pl. Ed. v. (1797-1810).
1802. First sports appeared in England.
1809. Willdenow. Enum. Pl.
1809a. Desfontaines. Hist. des Arbres, &c.
1810. Hortus Kewensis, vol. v.
1813. Sweet. Hort. Sub. Lond.
1821. Wells. First Essay on Culture, Hort. Trans., p. 571, vol. iv. Redleaf, near Tonbridge, Dec. 2, 1821.
1823-4. Chrysanthemum involutum. First "Incurved" var. Sweet's Brit. Flower Garden, vol. i.

- 1824-6. Sabine. Hort. Trans., 1821-1826, p. 326, &c.; 1824, p. 412, vi.; 1826, p. 322.
1825. First Chrysanthemum Exhibition at Chiswick (700 pots).
1826. First French seedlings by M. Bernet.
1830. First English seedlings by Mr. Wheeler.
1832. Forty-nine vars. of Chrysanthemums grown at Chiswick for the Royal Horticultural Society.
1833. Haworth. Loudon's Gard. Mag., vol. ix., p. 218. (The first good classification, &c., and mention of first English seedlings, &c.) Reproduced January, 1833.
1845. Small-flowered or pompon Chrysanthemum introduced (viz., Chusan Daisy and Chinese minimum) by Mr. Fortune.
1846. First competitive Chrysanthemum show for cut blooms held in England at Stoke Newington.
1862. Japanese Chrysanthemums introduced by Mr. Fortune.
1865. Salter. "The Chrysanthemum."
1884-5. Burbidge. "The Chrysanthemum: its History and Culture."
1888. Forbes and Hemsley. Jour. Linn. Soc., vol. (which see for other authorities) xxiii., pp. 437 and 438-9.

In conclusion, the centenary must be voted a general and deserved success, and a happy ending came as the result of a meeting well and thoughtfully begun. Comparing those dreary assemblies in the gloomy Drill Hall at Westminster with the Chiswick Garden gatherings is like comparing moonlight with sunlight, and I hope the lesson now thrice taught will be taken to heart, and that to some extent the gardening glories of the Chiswick garden will be revived.

F. W. BURBIDGE.

Naming Chrysanthemums.—The protest in THE GARDEN (p. 449) against the abnormally long names given to some of the Chrysanthemums, especially those from Continental raisers, might well have been supplemented by another, for in many cases the same name is applied to two or more varieties. To such an extent is this now carried out that it has become a most intolerable nuisance, and one that our various Chrysanthemum societies would do well to take note of. As an illustration of the evils to which I refer, mention may be made of the variety *Flora*, of which two are given in the catalogue issued by the National Chrysanthemum Society last year; then in Messrs. Laing's list of this year there are a couple more, the first a Japanese (*Lacroix*, 1889), and the other a reflexed flower. This last, I presume, is an American variety (of which there is one bearing the same name), but if it is not, we have five *Floras*, and even if it be, we have then four of the same name, which is certainly three too many. Again, there are at least three named *Ceres*, three *Harlequin*, three *Flocon de Neige*, and three *Perfection*, while the list of two distinct varieties bearing the same name is almost endless.—H. P.

Chrysanthemums at the Aquarium.—I quite agree with your remarks in THE GARDEN of November 16 on the National Society's Chrysanthemum show in the Royal Aquarium. It was a very good show, but might be much improved. The building is indeed dingy and badly lighted, and the flowers would be seen to greater advantage almost anywhere else; but while the shows are held there, that cannot be helped. But there is no reason why it should be full of bad tobacco smoke, as it was. Surely smoking need not be allowed at these shows. Even to smokers it cannot be pleasant while examining the flowers to have tobacco smoke puffed in their face. Then the names of the flowers in several boxes were so placed that they were almost entirely hidden by the petals, and the cards showing who was the exhibitor were frequently placed among the blossoms, so that anyone who wanted to read them had to move them, much to the detriment of the exhibits. Another matter which the management should see to is, that visitors should be made to pass round the tables in one direction only. The other day some went one way, some the other in a very inconvenient manner; no one tried to make persons go the same way. When will professional makers of

bouquets and floral devices tire of trying to hide the flowers with fronds of Maiden-hair Fern and Grass. If the flowers are best hidden, why introduce them? And will they ever learn that flowers are not seen to advantage when crammed together? Some devices shown at the Aquarium were very poor.—G. S. S.

OUTDOOR CHRYSANTHEMUMS.

TOWARDS the end of the interesting paper read at the recent Chrysanthemum conference for Mr. T. B. Haywood, a wish was expressed that raisers of new varieties would address themselves to the desideratum of obtaining sorts which would prove hardier outdoors than the present race, and enable those not blessed with glass houses to have some share in the wealth of beauty which autumn Chrysanthemums give. It was at the least somewhat odd that such a wish should be thus expressed at a time when Chrysanthemums are blooming with exceeding beauty in the open. I will not say so much of the large-flowered kinds, because these are not well adapted for outdoor exposure when in flower except in sheltered places. But all the pompon or medium sized blooming varieties have been, and still are, flowering profusely and beautifully. The white, yellow, orange, pink, purple, crimson and other self tints of the various small-flowered varieties have so far been exceptionally pleasing, and it is now the 6th of November. Since the sharp frost of September 17, when tender plants suffered so much in low-lying districts, we have had no frost subsequently to harm anything except tender plants, the keenest being on the morning of the 5th, but that was very mild indeed where the air was fairly dry. Thus, on the whole, we have had a very favourable time for outdoor Chrysanthemums. So many growers of plants for house-blooming were too easily alarmed at the one sharp frost of September, and got their plants into houses so quickly, that not only do they find their flowers exceptionally early, and for the exhibitions much too precocious, that not only will the best blooms be over early, but myriads have been destroyed by damp beyond all precedent. A rushing of the plants on under glass fully three weeks before the proper time for housing, followed by comparatively mild and very damp weather, proved to be serious misfortunes for the growers of large-flowered varieties, but especially of disbudded exhibition blooms. Once plants are in under cover they must remain, let the weather outside be ever so warm and pleasing. The milder the autumn the worse for the plants housed. Thus this year in avoiding the Scylla of frost we have fallen into the Charybdis of damp and discouragement. It does seem as if the chief need of Chrysanthemums was found less in protection from frost than from moisture. A very lightly constructed roof of the wire-woven glazing which could be put on to a framework with great rapidity, especially if scores of light frames of wood covered with the glazing were at hand to clap on to the roof of wood over the plants the moment frost and heavy rains seemed inevitable, should prove of exceeding value in enabling plants to be kept in check, whilst sides left open except when the weather was very boisterous, would keep the temperature equable and the atmosphere dry. The crowding of plants into close houses so early as the middle or even the end of September seems so improper, that growers should readily adopt any plan which will enable them to keep bloom back and prevent their finest flowers from being prematurely destroyed by damp. It is rather in the direction indicated that help is needed for Chrysanthemum growers than in raising hardier varieties; of that there seems to be at present very little hope, but if there is any, then it is found more amongst the pompon or small-flowered section than amongst the large flowered kinds, which are so susceptible to injury from rain and wind.

A. D.

Chrysanthemums at the Manor House, Bessingham.—In answer to your note, I send you an outline of our Chrysanthemum culture at Bessingham. Strong cuttings, about 3 inches in length,

are put in singly, about the first week in December, into 2½-inch pots, in a soil composed of equal parts of turfy loam, leaf-soil, and pure sand, and kept in a cool house. When the roots begin to fill the pots they are shifted into 3½-inch or 4½-inch pots. The soil used is composed of turfy loam, half the quantity of leaf-mould and the same of pure sand, old Mushroom-bed manure, and very finely broken charcoal. The plants are replaced in the cool house till the pots are again filled with roots, when they are potted into 5½-inch or 6½-inch pots, in the same kind of soil as previously used, with the addition of fine ground bones in the proportion of about one-fourth of a peck to the bushel, and are then placed in a cool frame on cinder ashes and exposed to air on every possible occasion. The last shift is into pots varying in size from 10 inches to 13½ inches, in soil similar to the preceding, only with a larger proportion of fine ground bones, about one-eighth of a peck to the bushel of soil, and a very slight sprinkling of soot. They are then placed on slates in the open air, and from the beginning of August till they are housed in September watered four times a week with liquid manure (the drainage from a stable mixed with an equal quantity of water). Once a week they are watered with weak soot water. They are top-dressed once when the roots show above the soil. The shoots and buds are thinned according to the number of branches and flowers required, and the foliage syringed on fine evenings. The plants are staked and tied as they grow. They are first stopped in their cutting pots when they begin to grow, and again when the shoots thence produced are about 5 inches in length. The plants bear from three to fourteen flowers on a plant, and none of them are inferior to those sent.—K. A. SPURRELL.

SPOILING THE CHRYSANTHEMUM.

ON looking over the first prize collections of Chrysanthemums at the Aquarium, I wondered how much each of these blooms had cost since the cuttings were put in twelve months ago. What with labour, soil, manure, pots, and the constant worry to obtain such huge flowers I should think that even if the first prize was gained the amount was quite inadequate to recoup the grower. If we keep on increasing the size of the blooms, as has been the case during the past two years, the size of boxes as fixed by the National Chrysanthemum Society will be quite unsuitable. When examining the blooms at the late show, the remark that they are far too large and quite useless for decoration was only too frequently heard, and this I quite agree with, for who would care to go and purchase these overfed blooms to decorate an epergne or dining table? I consider them quite useless in every way. Again, look at the plants on which the blooms have been grown. They have each been about 8 feet or 10 feet high, as is often the case, and twelve months have been devoted to obtaining one single flower, and in some cases if insects have been rife this one flower has been destroyed and the plant of no value, except to obtain stock. Even then this is sometimes a difficult matter, as all the suckers have been cleared off to throw strength into the one flower. What beauty is there in a huge mop on the top of a pole, as in the case of those flowers grown solely for the exhibition table? Far better would it have been if the grower had devoted his attention to a plant of some value for decoration. But the great aim of the Chrysanthemum grower seems to be size, and the larger the blooms are the more they are extolled by the Chrysanthemum enthusiast, as witness the 12-inch flowers of Etoile de Lyon lately exhibited at Kingston. I lately saw a collection of Chrysanthemums, and the prettiest flowers, to my mind, were the pompon varieties that had not been disbudded nor any attempt made to obtain size. How much more useful were these flowers for table decoration. I find also that these huge blooms that have been fed with all sorts of artificial manure never keep well. It will be found that the lower petals of the flower very quickly decay and render it quite unfit for decoration. How can it be otherwise?—W. P.

— The report of the national Chrysanthemum Society was an outspoken protest against an evil that has made itself peculiarly manifest during the past three or four years. The Chrysanthemum flower of to-day exhibits the same increase in size as in popularity. Enthusiasts in its culture, who profess a true love for it, are content to sacrifice its intrinsic beauty, charming freedom, grace, and expression to mere size, a degraded and lamentable taste that merits strong reproof and condemnation. Size is worshipped, not the flower, and the anticipation of a pocketful of prize money is often the sole reason why cultivators show such unwonted interest in its welfare. It is greed that has made the Chrysanthemum the lumpy mass of florets as presented at the exhibitions of to-day, and the placing of size before more refined qualities has served to this end. Such a beautiful snow-white flower as Fair Maid of Guernsey has no chance on the board; it is beaten by other types, not from any want of true beauty, but the "fashion" of the age demands size. A glance at the exhibitions, which are a mere repetition each season, as you truly point out, reveals how utterly engrossed cultivators are with big flowers, masses of ammonia that rot with a few damp and foggy days. The regulation boards are too small to hold the blooms which are cramped together in a way to shock a sensitive artist, who seeks form, light, and shade, and expression, not bulk and formality. "The horrid lines of tables running the entire length of the exhibition room are an abomination," writes an ardent friend of the Chrysanthemum, but one who has an honest love for the flower, and seeks not to destroy its charm by a succession of stoppings, tyings, and feeding with various unwholesome condiments. This debased taste should be condemned rather than encouraged by societies whose object is to promote the best interest of the flower, to spread far and wide a pure love for it, and to give exhibitions when the last Roses of summer have shed their petals; but no public protest has yet been uttered against "size" until Mr. Haywood's remarks at the recent Chiswick conference. A change should come, and the exhibition of the National Chrysanthemum Society next year should see a difference not only in the flowers, but in the way they are shown. It is difficult to alter existing conditions, but a large body of men like that society should be able to make a commencement in another direction. One way would be to have classes for flowers cut with long stalks to exhibit both leaves and flowers in their natural growth. Another would be to give each bloom sufficient space to show off its expression and grace, impossible under the present jumbled-up way of exhibiting. Then we should have an exhibition men and women of taste could visit with some degree of pleasure. No one at the recent Aquarium show could have gathered a basketful of flowers fit for a well-dressed table or a lady's room. The single varieties had no class allotted them, though they are flowers as pure, delightful, and utterly informal as any in the whole series of Chrysanthemums. A more "bunchy" style of exhibiting the flowers would be an improvement on the single bloom way at present in vogue. I heartily agree with you as to trained specimens; they are a disgrace. It is an insult to the flower to mould it into set shapes, and the increase in this "business" is deplorable. When such coarse flowers as Etoile de Lyon, as large as a dishplate, W. & G. Drover, Edwin Molyneux, and Condor are praised as if containing all the attributes of the Japanese varieties in one, then it is time for such a protest as you have uttered. Such new varieties as Florence Percy, Avalanche, Ralph Brocklebank, and Sunflower are truly beautiful when not unduly big.—T. M., Surrey.

— With reference to the vaunted bigness of some of the Chrysanthemum flowers, excessive bigness in either flower or fruit is apt to slide dangerously in the direction of coarseness. Is not a desire for it somewhat imprudent? Surely the most delightful and purely enjoyable examples of the Chrysanthemum are the naturally trained, the abundantly bloomed, and such as will allow of the removal of a flower without damage to the *ensemble*. For it must not be overlooked that the Chrysanthemum

themum is invaluable as a cut flower for the parlour. The highest test of excellence in any description of flower is its fitness for the adornment of a lady's boudoir. The light and shade of a well-selected handful of Chrysanthemum blooms, set tenderly and without crowding in a suitable vase, are excelled in charm perhaps only by a similarly well-chosen group of Orchids. In the gloomy days of November they have the effect almost of sunshine.—*Manchester Guardian*.

Cottagers' Chrysanthemums.—One of the most striking features at the recent exhibition of Chrysanthemums held at the Corn Exchange, Hitchin, last week was some specimen Chrysanthemums shown by a labourer in the Gas-works at

ing illustration of the truth that devotion to a pursuit, even under apparent difficulties, can accomplish remarkable results.—R. D.

STOVE AND GREENHOUSE.

FORCING HOME-GROWN SPIRÆA JAPONICA.

I FIND that when the treatment is right, home-grown Spiræas are equal, if not superior, to those produced from imported roots. As I require a good many, both large and small,



A good specimen of Astilbe (*Spiræa japonica*).

Hitchin. They were Japanese varieties, viz, Val d'Andorre, Bouquet Fait, and Elaine. The plants were grown in 12-inch pots, stood about 4 feet high, had several strong stems to each furnished with vigorous healthy foliage, and each carried heads of very fine flowers. This man, who at this season of the year works from daylight till dark, has built himself a small greenhouse, and it is in this homely structure he produced the fine specimens seen at the Hitchin show. There was no unnatural twisting and binding of the shoots in order to make them "trained" specimens; they were naturally grown, and they were much better in every way than many specimen plants seen recently at Chrysanthemum shows. They afforded a strik-

I grow them in pots one year before they are wanted for forcing, a plan which I can recommend to anyone who has not yet tried it. The plants for forcing early the following year should be potted early in December, for it is important that they should start into growth as quickly as possible. I always have a stock of plants in the reserve ground, some of which I dig up and divide into pieces of various sizes, some I put into 6-inch pots and others into larger sized ones. Such pieces should be selected with a moderate number

of crowns; for 6-inch pots roots with five or six crowns will be necessary, and for larger pots a proportionately larger number. The pots should be moderately well drained, and the soil should consist of three parts fibrous loam and one part well-rotted manure, with an addition of some coarse sand or grit. In this mixture the roots may be potted pretty firmly, and when the potting is completed and the soil has been watered they may be taken to a cold pit or placed in any structure where they will be free from frost; but they must not be exposed to more fire-heat than is necessary to keep the temperature above freezing. Their culture in spring is best carried out in a cold frame, as they want no coddling. All they want is plenty of air whenever the weather is favourable, water, and shelter from cold winds, rain and frost. I generally turn my Spiræas out-of-doors with the summer bedding plants, where they get some shelter for a week or two before being altogether exposed to cold nights and morning frosts.

SUMMER TREATMENT.—When warm weather sets in I select an open position for them fully exposed to the sun in the frame-ground near water, of which they want plenty. Under each pot is placed a saucer, which is kept constantly full of water. From June to the end of August I water regularly with manure water, and the saucers are filled with it as often as they become empty. All flower-spikes are cut away as they appear. That they like this treatment is evident from the colour of their leaves and the plump and numerous crowns I find they have developed in the autumn—in fact, the pots may be said to be full of crowns. I have before now counted as many as seventeen flower-spikes on a plant occupying a 6-inch pot. At the beginning of September the saucers are removed and the supply of water is considerably reduced with the view of inducing the plants to rest. If very wet weather sets in at the beginning of October, the pots are laid down on their sides, where they remain until the leaves are quite ready to be cut off. Once or twice, perhaps, the pots are set upright again and receive some water, but that depends entirely on the state of the weather. If it keeps dull and moist, the plants do not require any further assistance in that way. As soon as the leaves are sufficiently matured they should be cut off close to the crowns, as their removal promotes early resting, and this is necessary in the case of growers who want to commence forcing them early. While resting, they may remain in the open air; but it is not wise to expose them to more than 3° or 4° of frost, as very severe cold would probably cause the pots to crack, owing to their being so full of roots.

FORCING.—This Spiræa, I find, does not respond readily to artificial heat early in the winter; and in order to get it into flower in, say, the middle of January, it should be introduced into a temperature of 70° early in December. When I have tried it in a lower temperature for early flowering, I have been disappointed. After the end of January it will do very well if started in a heat of 60°,

with an increase as the plants progress. Those wanted to come in very early do best in bottom-heat. I place my first batch of plants in a shady propagating pit where the temperature is not less than 75°, and after being well started I bring them out into more light and air. I have great faith in the use of bottom-heat for all plants that have to be started into growth some time before their natural season occurs. As soon as some well-developed leaves are made, each pot should stand in a receptacle filled with water while it is in the forcing house; and if manure water, so much the better for the rising flower-spikes. If the plants are to make handsome specimens, like that shown in the engraving, they must not, when growing, be crowded together, and they should stand in a light, airy position. As soon as they go out of flower they should be placed in a cold pit or greenhouse, where they can be gradually hardened off, and about the beginning of June be turned out of their pots and planted in the reserve garden until wanted again for potting. In order to give them a good rest and to secure strong plants, three sets are necessary, as they make no progress the first summer after being planted in June.

R. C.

Lasiandra macrantha.—This is a favourite plant at Drinkstone Park, where, planted out and trained upon the roof of an intermediate house, it grows freely and flowers profusely. The flowers are very useful for cutting, their rich violet hue being very effective by lamp-light. Mr. Palmer says that the plant is never affected with any kind of insect pest.

Cissus discolor.—This is a stove foliage plant of great merit and beauty. When stove plants were a feature at shows, good specimens were often seen, but generally they were somewhat formal, being trained to a wire balloon. At Drinkstone Park, in the Phænopis house, *Cissus discolor* is growing in a free and graceful way, and looks very beautiful. The house is a lean-to, and the back wall is entirely covered with the *Cissus*, which clings like Ivy and hangs in long festoons like some of the Virginian Creepers. The leaves are very large and rich in colour, a perfect mantle of them hiding every inch of the wall. I have never before seen this *Cissus* planted out, but have no hesitation in saying that in a suitable house it is a charming subject for the purpose, and infinitely more beautiful in its unrestricted growth than as a trained specimen.—A.

Ipomæa Horsfalliæ.—This is one of the brightest and best of stove climbers, and it has a special value in that it produces its flowers throughout the winter, brightening up the stove through the darkest and duldest months of the year. It is an Evergreen, having an abundance of rich glossy dark green leaves which form a fitting background to the brilliantly coloured flowers. It blooms most profusely. A large plant of this *Ipomæa* is now very beautiful upon the roof of a stove at Drinkstone Park. Mr. Palmer finds the flowers very useful for table decoration, but as they close in the evening or in the afternoon upon dull days they are cut and placed in water early in the day when they remain open for use. A coloured plate of *Ipomæa Horsfalliæ* appeared in THE GARDEN for Aug. 20, 1887.—A.

Blandfordias not blooming.—In reply to W. Shirley (THE GARDEN, p. 456), who inquires as to the reason of his plants of *Blandfordias* not blooming, it is difficult to give any answer; but perhaps as they have grown strongly there will be plenty of bloom next summer. If they are in good condition I certainly should not advise their being

reotted in the spring, as that might interfere with their flowering. The time of the year at which I prefer to reot the *Blandfordias* is as soon as possible after the blooming season is past, as they become well established before winter, and make good growth during the autumn months. They require a light position at this season of the year, and should be kept fairly moist throughout the winter, when a temperature of 50° to 55° should suit them perfectly.—H. P.

BOMAREAS.

ONE very desirable feature of this genus of climbing *Alstroemerias* is the fact that their flowering season is not limited to one particular part of the year. The plants do not enjoy any resting period, but push up their slender climbing stems at various times. However long these stems may grow they are (if strong enough) sure to terminate in an umbel of blossoms, the size of which will to a great extent depend upon the species and also upon the vigour of the plant. The *Bomareas* have had considerable attention given them in THE GARDEN of late years, there having been two coloured plates of them issued since 1881. *B. Caldasiana* was figured in Aug. 6 of that year, *B. conferta* in Jan. 27, 1883, and *B. oculata* in March 20, 1886. One of the most continuous blooming is *B. Caldasiana*, the shoots of which generally attain a length of 8 feet to 10 feet, and are terminated by a drooping cluster of very showy blossoms, the outer segments being bright red and the inner rich orange. The flowers, which are each about 1½ inches long, are usually borne from twelve to fifteen in an umbel, and make a goodly show at this season of the year. Nearly allied to the last is

B. oligantha, the blooms of which are somewhat more widely expanded than those of *Caldasiana*, but for continuous blooming *B. oligantha* will perhaps bear the palm. One very fine feature of this last is the capsule, which when ripe splits open and the divisions curl back, thus exposing the bright coral-red seed.

The largest growing of all the *Bomareas* is *B. Carderi*, whose climbing stems are terminated by an umbel of blossoms, in a vigorous specimen as much as a yard across. The individual blooms are in shape a good deal like those of a *Lapageria*, while the colour, which varies considerably in different individuals, is (in the case of a good variety) rich pink, while the inner segments are pale green, much spotted with deep brownish purple. In a warm sunny structure where the temperature is above that of an ordinary greenhouse this *Bomarea* will often ripen seeds readily enough, which soon germinate and grow away quickly afterwards.

B. conferta, which is a more recent introduction than those previously mentioned, is remarkable for its richly coloured blossoms, which are of a carmine-crimson tint, spotted with a deeper hue. It is a free grower, producing large closely packed clusters of blossoms, which from their distinct tint are very attractive. Three or four years since this *Bomarea* was fairly common, but it now seems to be a much scarcer plant than it was at that time. Besides the specific name of *conferta*, it is also known under that of *B. patacensis*.

B. oculata is a slender, but quick growing climber, with terminal clusters of small bright crimson-coloured blossoms. This is said to stand the winter in Messrs. Ware's nursery at Tottenham. It is certainly quite distinct from any of those previously mentioned.

There are several other species of *Bomarea*, but the above form a good and representative

selection. Nearly all the members of the genus are natives of South America. The cultural requirements of the *Bomareas* are not particularly exacting, yet there are some few points which must be taken into consideration. In the first place they will not do for pot culture, for though some of them may do moderately well under such treatment, it is necessary to plant them out in a prepared border before any of them (and more especially the larger growing species) can be expected to do themselves justice. In preparing a place for their reception, one great consideration is to ensure thorough drainage and to use an open soil. The bulk of the soil should consist of good fibrous loam lightened by a liberal supply of sand and leaf mould. Though the *Bomareas* are by no means peat-loving plants, it is often an advantage to use some of a good fibrous nature mixed with the compost to keep it open, but of course this will depend upon the quality of the loam used. Some rough charcoal or soft porous stone mixed with the soil is also an advantage. Great care must be taken to guard the shoot from injury, for if the top portion is broken off it never branches out, and consequently decays without flowering. Slugs are also partial to the young succulent shoots just as they push through the soil. Weak manure water is of great service to the *Bomareas* when making their growth. Propagation can be effected by means of seeds when available, and sometimes by division. This operation should be carefully performed, and the plants so treated kept somewhat close till they recover from the check. When growing they may be liberally syringed, as thrips sometimes disfigure the leaves. The plants should, if possible, occupy a good light position, for the colouring of the flowers is very much influenced thereby, as if they are developed in a structure that is very much shaded, the blooms are thinner in texture and poorer in colour than if fully exposed to the light. The seed may be sown in an open sandy soil, and in the temperature of an intermediate house the young plants quickly make their appearance, and if potted as required will grow away freely. Aphides are very liable to attack them when young, but can be readily kept under by fumigation or other means.

H. P.

Hyacinth roots rotting.—The enclosed bulbs were potted about six weeks ago and were then stood outdoors, and the pots were covered with about 4 inches of wood ashes. I now find they had started rot, which has since rotted away. Do you think it is the ashes? as others I have covered with soil are all right and well rooted. Can you tell me what is the cause of rot and suggest a cure?—M. A. N., *Cosham*.

*** As the bulbs covered with soil have not lost their fibrous roots by decay, the inference is that, as those covered with wood ashes have, this is the cause. I covered a large number once with coal ashes and the roots were injured, so I determined not to do it again. We now plunge all our spring-flowering bulbs in Cocoa fibre refuse, and I find, when old, partly decayed material is mixed with new from the works, it is better than either new or old by itself. Where leaf-mould partly decayed can be obtained, this answers very well for plunging the pots in. The bulbs themselves are quite healthy, and to all appearance the roots have decayed from some local cause; at first sight, I would have said that the soil had been over-charged with water.—J. D.

Gomphia decorans.—This Brazilian stove shrub is a very free-flowering subject, even in a small state, though in its native country it attains a considerable size. It is of free branching habit when treated as a pot plant, and has broadly lanceolate leaves of a pleasing shade of green. The flowers, which are produced in closely packed

spikes, are of a bright yellow colour, and make a goodly show when at their best. The individual blooms are less than an inch in diameter. The flowering season of the *Gomphia* is from August onwards till nearly Christmas, a time of the year when it is especially valuable. It is of easy culture, thriving well under the treatment accorded to the general run of stove plants, and may be kept in health for years in comparatively small pots. This *Gomphia* is increased by cuttings of the growing shoots put in during the spring months. Besides the more general name of *G. decorans*, it is also known under that of *G. olivæformis*.—H. P.

Dwarf Rhododendrons.—While some varieties of the greenhouse tube-flowered *Rhododendrons* are inclined to run up thin and naked unless frequently stopped during their earlier stages, nearly all of them can be induced to flower in the shape of little dwarf plants but a few inches high. To accomplish this they need to be treated a good deal as *Hydrangeas*, that is to say, the cuttings must be formed of the shoots that would in all probability flower if allowed to remain on the plant. In the early part of the year I put in a quantity of cuttings, most of which soon struck. Many of them in 4-inch pots, and but a few inches high, are now bearing a head of blossoms, whose diameter in many cases is equal to the height of the plant. When grouped together they look very pretty grown in this way; but if required to make as large plants as possible in a given time, it is an advantage to remove the flower buds, as of course they tend to exhaust the young plants. These *Rhododendrons* can all be struck from cuttings of the young shoots, taken just as they have lost their succulent character, and before they become too hard and woody. Very sandy peat is a suitable compost for the cuttings, and it is a great advantage to mix some crocks and charcoal broken fine with it, as the roots are then produced more quickly and in greater quantity than in peat and sand alone.—T.

Grafting *Clianthus Dampieri*.—The idea of grafting this beautiful *Clianthus* is not so novel as might be supposed from the remarks in *THE GARDEN*, November 16 (p. 449), for I remember at least twenty years ago there were two very fine specimens in the temperate house at Kew, one of which was grafted on *C. puniceus* and the other on the allied *Swainsonia galegifolia*. Even on such stocks, however, the plants maintained their biennial character, as they flowered till quite exhausted and then perished. Scions taken from the flowering plants readily effected a union with the same stocks as their parents, but they all died during the winter, while when young and vigorous plants but a few inches high were cut off and grafted on to suitable stocks, they grew away freely. This appears to be the secret of grafting *Clianthus Dampieri*, viz., select as scions young plants, not shoots from a flowering specimen. Mr. Kirsten's flowers, which, like your correspondent, I received, were really beautiful, and the variety *marginata* was so distinct from, the generally cultivated form, that its scarceness is a matter for surprise. In this the flowers are rather smaller than those of the type, and also lighter in colour. The keel of the flower is white, with a margin of scarlet, a very different combination of colour to that found in the common form.—H. P.

***Dahlia imperialis*.**—It is only for large greenhouses that this species can be recommended. In the temperate house at Kew, several plants which are now beginning to open their flowers are from 10 feet to 12 feet high. In a natural state *D. imperialis* is said to occasionally attain a height of 20 feet. Where a sufficiently lofty house is available it would be well worth growing for early winter work, producing, as it does, its large white flowers in great profusion at that season. Especially is this the case for gardens sufficiently removed from the metropolis to avoid its fogs, which have a very injurious effect on the blooms. The flowers are each about 6 inches in diameter, the outer florets being pure white tinged with purple towards the base. A coloured plate of this plant was given in *THE GARDEN* for October 13, 1877, and it is

also figured in the *Botanical Magazine*, t. 5813. The species is a native of Mexico and was discovered and introduced to Europe by Roezl in 1863. Its cultivation is easy. I find that it is best to grow on the plants from cuttings every year. About the beginning of February an old tuber should be plunged in a mild bottom-heat, taking off the young shoots when about 6 inches long, and striking them singly in pots of sandy loam. These should be potted on and gradually hardened off, standing them out of doors when all danger of frost is over. The plants should not be allowed to suffer any check, finally potting them into 20-inch pots, using a compost of loam and one-fourth cow manure; and when the pots are full of roots frequent supplies of manure water are necessary. The plants should be stood indoors early enough to avoid the autumn frosts, as they will not stand more than one or two degrees. At the same time, the longer they can stay outside the better, as the growths are liable to become drawn indoors. Another tall species grown at Kew is *D. excelsa*. Apparently it is not free-flowering, and little is known about it in England, although there is a record of its flowering in S. Europe. A plant at Kew is now showing flower buds.—B.

SCARLET PELARGONIUMS.

PERHAPS due to the fact that Messrs. Hawkins and Bennett, of Twickenham, produce such wonderful breadths of scarlet hue of the most fiery kind in their large houses during the winter from zonal *Pelargoniums* is due the regular production of these brilliant hued flowers at the Twickenham Society's annual *Chrysanthemum* show. We see *Pelargoniums* frequently enough in the summer and autumn in every direction, but hardly enough is made of their brilliant hues in the winter months. At Twickenham the schedule calls only for scarlets; hence the plants shown, as was the case at the recent exhibition, are of *Henri Jacoby*, *Vesuvius*, *De Lesseps*, *F. V. Raspail*, &c., whilst the paler hued colours are ignored. That seems to be a pity, but *Chrysanthemums* and other flowers furnish other than scarlet hues in considerable plenty. The plants of scarlets shown by Mr. Henry Little and others gave colour so striking and glowing as to seem almost surprising for the time of year, and yet it is evident that if only very ordinary trouble be taken, plenty of these zonal *Pelargoniums* may be had blooming as gloriously in November as at any time of the year, whilst the brilliantly rich tints are even more welcome. That a considerable variety in colour from the flowers of these *Pelargoniums* can be produced is amply evident. These have been shown by Messrs. Cannell and Sons at the Royal Aquarium and other November shows. Such clusters of flowers in great variety of colour excite the warmest admiration, and prove formidable rivals to the *Chrysanthemums*.

At the Twickenham show Messrs. Hawkins and Bennett, with scarlets, pinks, salmons, &c., sent bunches of no less than six single whites, all of the purest, including a seedling from *Niphetos*, with *Queen of the Belgians* flowers, also both these kinds, *Eureka*, *Ladd's White*, &c., and very beautiful were these pure snow-white flowers, set up amidst the blood-red tints of dark varieties. It seems a pity that managers of autumn shows do not create a class for twelve bunches of *Pelargoniums*, not less than six varieties, so as to enable even Ivy-leaved forms to be introduced also. If gardeners, or, indeed, anyone having a greenhouse in which a little artificial heat is always available, will but prepare plants from late autumn-struck cuttings by shifting them on into 6-inch pots, standing them on an ash bed outdoors in the sun during August and the first half of September, keeping the plants pinched up to the end of August, and allowing no bloom to show, then getting them under glass when the half of September is passed, allowing the growth to be quite free, helping as needed with a little weak manure water and warmth, the plants may be got into bloom probably by November. There is no real difficulty about this, but if all the house-room and all the time and labour available be given to *Chrysanthemums*,

then there will be a poor show of zonal *Pelargoniums*. Even spring-struck cuttings may, if well grown, be induced to make very good blooming plants by the autumn if allowed ample pot room, and receive a couple of pinchings during the summer. The double forms, of which there are plenty, are truly most valuable for winter cutting, the rich hues of the scarlets associating so finely with the whites of the *Chrysanthemum*. Large specimen plants are undesirable for this winter-blooming. A. D.

WORK IN PLANT HOUSES.

CARNATIONS.—To have a succession of bloom during the next three months it is essential that the right varieties should be secured, and that the plants should have been so treated through the summer as to enable them to flower in winter. In the absence of either of these essentials, nothing the cultivator can do will induce the plants to bloom until, possibly, months have elapsed. From the frequent failures that occur with beginners in the cultivation of this section of *Carnations*, it is well to point this out. Failures often arise through varieties being grown which, whatever their merits may be in other respects, are not perpetual bloomers, and these alone can be induced to flower during the dormant season. Plants that are intended to flower through the two first months of the coming year, and that were not stopped later than was advisable, with a view to their blooming then, will now have their leading buds prominent and showing colour. To do justice to the plants, they should have a house or pit to themselves, or the things associated with them must be such as will do with the treatment the *Carnations* require. From 45° to 50° in the night is as warm as it is safe to keep them. With this warmth they should be stood with their tops near the glass, otherwise whatever growth is made between now and the time the plants have done flowering will be too soft to be of any use. Give air daily when the weather is suitable. When it is foggy or frosty it is better to keep the house closed, except a slight opening in the roof, to promote a healthy circulation in the atmosphere and to prevent any accumulation of moisture, which if present is liable to produce mildew. The plants should be frequently looked over to see that they are free from the parasite. The presence of this pest is easily detected, and when discovered, at once dust the affected leaves with sulphur. Water must be given with caution during the dull, sunless days, or its effects will be injurious.

SUCCESSIONAL STOCK.—The plants that were stopped later in the season and that are wanted to flower in spring will now be pushing up their flower-stems. Keep them in a cool greenhouse temperature. In this stage their movement is naturally very slow, and any attempt to accelerate their growth would be fatal. The plants should have all the light that can be given them, as the sturdier they keep the better they will bloom, and the better condition they will be in for further use when they have done flowering.

CARNATIONS—CUTTING STRIKING.—Cuttings of these *Carnations* may be struck at any time of the year. Their propagation is sometimes left until spring, but when the work is thus deferred there is not time to allow of the plants gaining sufficient size and strength to be of much use for flowering the season following. The cuttings may be put moderately close together in 5-inch or 6-inch pots; it is best to confine them to the single row within the rim, as then there is less fear of damping from any decaying leaves as there is when the pots are wholly filled. Drain the pots and nearly fill them with a mixture of finely sifted loam and sand in about equal parts, putting a little sand on the top. With cuttings, as with plants that are being brought on to flower, there must be no attempt at hurrying. An ordinary greenhouse temperature is enough to subject them to for a few weeks, after which they will bear gentle warmth. Do not confine them under propagating glasses or in a striking frame. If kept close in this way the chances are that more

perish than make roots. When they are rooted, put them singly into small pots and keep them gently moving in a warm greenhouse temperature until the spring, when solar heat will be all that is necessary or advisable to give.

CHRYSANTHEMUMS.—In most cases it is the latest flowers that are the most useful. It is, however, not only advisable to cultivate a sufficient number of plants of the varieties that naturally bloom late, but also to treat them in a manner that will induce them to come in as late as they can be had. The cutting-back system is now a good deal practised with the best results, that is, the plants after having been struck and grown on in the ordinary way with a single shoot are headed down in the summer. This induces the formation of several shoots, which, if too numerous, are reduced to three or four. The flower-buds are thinned more or less according to the character of flowers that are required. When treated in this way, the plants, after having made much of their growth, have, so far as the tops are concerned, to begin again. This is naturally an exhausting process, so that the second growth is not capable of producing flowers so large as would have been forthcoming if the plants had been let to go on with their first growth intact. This being the case, where full, well-formed flowers are wanted, too many must not be left on. From four to half-a-dozen will be as many as it is advisable in most cases to allow the plants to carry. As the object is to keep them as late as possible, it is necessary to use no more warmth than requisite to exclude any frost that may come. Keep the plants with their tops as near the glass as they can be got, and stand them far enough apart to allow the light to have full play on them down to the lowest leaves. When the atmosphere is very damp, a little heat may be turned on for a few hours to dry up the damp. This must be accompanied by additional air to let out the moisture, and the heat must be shut off early enough to allow the pipes to get quite cold before night. By following this course the foliage will be kept in a healthy state and the buds will come on slowly. A good look-out for mildew must be kept, as, needless to say, growth that is thus made late in the season under the influence of waning light is softer and more susceptible to attacks from parasitic fungus than such as is produced earlier in the summer. The soil at this season does not dry up so quickly as earlier, but if the plants are in good condition, the balls will be full of roots that must not be let to want for moisture. To afford the necessary support, manure water should be given regularly. It is now time to put in cuttings. With most varieties it is better to propagate at this season than to defer the work until later on. When it is left till spring or late in winter it becomes necessary to use heat; this should not be done when it can be avoided, as when in a warm confined atmosphere the cuttings make top-growth whilst the rooting process is going on. The result of this is that the bottom leaves are wanting in substance. In selecting cuttings it is requisite to choose those that are sturdy and short-jointed. Weak, delicate shoots, even with the best treatment, have too much to make up to ever admit of their making plants equal to such as are produced from shoots in right condition. The cuttings are best put singly into small pots. Put a bit of the fibrous matter out of the soil at the bottom of the pots for drainage, and three parts fill them with a mixture of finely sifted loam and leaf mould, also sifted, with some sand, using sand alone at the top. Give a good watering, and stand the pots on some moisture-holding material, such as sand, fine coal ashes, or Cocoa-nut fibre; cover them with propagating glasses or ordinary hand-lights. An empty vinery, or Peach house, or a cold pit where frost can be kept out is a suitable place to strike the cuttings in. The more light they get the better, as under its influence there will be less likelihood of any of the leaves decaying. They should be frequently looked over to see that they are free from mould; if this appears the glasses must be tilted a little. Treated in the way described, the cuttings will be well rooted in the course of about six weeks, after

which gradually give air by tilting the glasses more until they can be dispensed with altogether. Before putting in the cuttings see that they are quite free from aphides.

RULES FOR FORCING.—With the use that can be made of Roman Hyacinths, Tulips, and Paper-white Narcissus, it is neither necessary nor advisable to force the large varieties of Hyacinth so early as sometimes attempted. If a few of the large-flowered sorts are now put into heat, and not subjected to too high a temperature, they may be expected to produce well-developed flowers. See that the tops that are blanched by the material in which they have been plunged have time enough, under a subdued light, to gradually gain their natural green colour before allowing the full light to reach them. Old as this advice is, and often as it has been repeated, it is evident from the frequency with which crippled leaves are met, that the need for caution in this matter is not yet fully understood.

T. B.

UNHEALTHY STEPHANOTIS.

SOME years ago I purchased a Stephanotis plant. The first year it grew well, and in the following two years it quite covered the stove house, 22 feet long by 10 feet wide, and bloomed freely. I often cut 100 blooms in a day. When it had done flowering in 1888 I cut the plant back fairly hard, and expected it would go to rest, but instead of so doing it kept on making a weak growth all through last winter, and when spring came, instead of growing freely and strongly, the shoots were thin and produced no blossoms. In 1888 I increased the size of the box in which the plant grew, and often when it was in bloom I gave it liquid manure. Cuttings from the plant root freely enough for me, but I cannot make them grow properly, and I can give no reason for it. The roots always seem to die. I have used loam almost entirely, and a good deal of sand with very little peat. Perhaps this is not the best soil for Stephanotis. I also planted it very firmly.—J. GIBBINGS.

* * There is nothing in the treatment stated that accounts for the unhealthy condition of the plant. Stephanotis is an easy plant to grow, and not liable to get out of order. It bears cutting back to a reasonable extent without injury. It will do in the same soil for several years provided that assistance is given with manure water (not too strong) during the growing season. The plant does not like much disturbance of the roots when repotted. The box described was not too large for a specimen that covered the space named. As the plant grew well for a time it is only reasonable to infer that there must have been something wrong in the treatment after it was cut in. The weakly growth made afterwards points to the active roots having perished. Manure water in too strong a state given either during the time of flowering or after the reduction of the shoots would cause this. It is doubtful whether the plant in its present state is worth keeping. The best plan would be to procure a healthy young one, and treat it exactly in the way the one in question was managed during the time it grew satisfactorily. To save time I should advise an extra sized young plant being got such as had already filled an 8-inch or 10-inch pot with roots; this if moved just before it began to grow into a 12-inch or 13-inch pot would fill a large space next summer, and might be expected to produce a good deal of bloom the season after. Stephanotises will grow in either peat or loam, or a mixture of both, but I prefer loam alone, as in it the plants last longer, and usually flower more freely. The loam should have plenty of fibrous matter in it, and have enough sand added to keep it porous, but not so much as will make it too light and poor. The fact of young plants struck from cuttings failing to thrive is suggestive of something wrong in either the soil or the water. The roots should always be kept much drier in the winter whilst the plants are at rest than when active growth is going on in summer.—T. BAINES.

Arum Lilies.—I can fully bear out the remarks of "J. M." as to Arum Lilies flowering sooner when

planted out. I have divided and planted out in summer, lifted and potted the first week in September, and had them in bloom the end of that month for decorating the church for the harvest thanksgiving. For early flowering and increasing the stock as well as lessening labour, I would recommend planting out in summer, but for quantity of bloom in small pots would repot pot-grown plants. Probably the early flowering arises from the slight check the plants receive when lifted instead of retarding their blooming, as mentioned by "R. C. H." in your last issue. I find no difficulty in having pot-grown plants in bloom before Christmas. Several of our plants have been in bloom for a fortnight in a temperature of 55°. For room decoration their lovely spathes are always welcome.—G. D.

The Fruiting Duckweed (*Nertera depressa*).—There is a cool fernery at Drinkstone in which the Fruiting Duckweed is a conspicuous feature. It appears to grow anywhere and anyhow and fruits as freely as it grows. In one case an old Tree Fern stem which has a *Todea superba* in its crown is entirely covered with the *Nertera*, and it looks very pretty standing up from a groundwork of Ferns, like a little green column studded with its small bright red berries. It creeps about upon the rocks and in various places, but perhaps it looks prettiest where in a glass case in the centre of the house it forms a rich carpet under and around a fine healthy spreading mass of the Killarney Fern. The quantity of this *Nertera* in different situations considerably adds to the interest and beauty of the Drinkstone fernery.—H.

GARDEN FLORA.

PLATE 729.

TEA ROSE INNOCENTE PIROLA.*

AMONG white Tea Roses that which forms the subject of our plate deservedly holds a high position, for it was about the best in its colour till the appearance of Edith Gifford in 1882. Innocente Pirola was one of Ducher's 1878 novelties, and English Rose growers were not slow to find out its merits, not only in the garden, but upon the exhibition table; in fact, it has probably figured much more extensively upon the exhibition table in recent years than in garden collections of Roses, although it should be included in every good collection, and those who have not got it should note it as a Rose to obtain and plant at once. Although not as vigorous as some varieties, it is a free grower and an abundant bloomer. The wood is very long-jointed, and on this account so great is the space between the joints that the shoots look partly defoliated, even in summer. The scarcity of leaves characteristic of this variety is, however, only a very minor defect, and perhaps more noticeable because the Tea Roses, as a class, are conspicuous for their wealth of glossy leaves from early summer till early winter. The form of the flower is exquisite, and the plate shows buds and blossom in the truest character. The long-pointed buds become of a rosy-peach colour on the outside in the full sun, but as they gradually expand they exhibit perfection of form and develop a chaste colour, a creamy-white, lightly shaded with the palest pink, or sometimes suffused with a pale fawn. The handsome pointed half-opened bud, as shown in the engraving (p. 497), develops into a full, well-built flower of good substance, pointed in the centre and with reflexed outer petals which are of an almost snowy white—

* Drawn for THE GARDEN at Gravetye Manor, Sussex, by H. G. Moon, July 14, 1889. Lithographed and printed by Guillaume Severeys.



ROSE "INNOCENTE PIROLA"

ness, whilst the flower maintains its fine form for a considerable time. All garden Roses do not come up to the exhibition standard, but Innocente Pirola is delightful in the garden, and the flowers from which the plate was drawn were cut from a group of plants in the border. The value of Innocente Pirola as an exhibition Rose may be judged from the fact that it is invariably present in any winning box of Tea-scented Roses, and magnificent boxes of it alone have secured first honours in exclusive classes for the best box of any white Tea. Thus all the good points constituting a fine Rose are fully embodied in Innocente Pirola, and we can enjoy it either in the garden in quantity or upon the exhibition table, where its high qualities of fine form and chaste colour are developed to their fullest extent. Although the soft and delicate tints predominate among Teas, yet white Tea Roses are a limited class, but in the one under notice, and Edith Gifford figured in *THE GARDEN* for April 7, 1888, we have a pair of the highest value and beauty, whilst the new S. A. Prince promises to be another valuable addition, and among older kinds *Devoniensis* and *Niphetos* may be mentioned, as these five probably constitute the cream of white Tea Roses. A. H.

FRUIT GARDEN.

W. COLEMAN.

CORDON PLUMS AND PEARS ON NORTH WALLS.

IN large or small gardens where north walls have been stocked with Morello Cherries and Currants for generations, for such a length of time, indeed, that the very bricks as well as the borders are crying for a change, that change may be profitably made by the introduction of a well-assorted selection of Plums and Pears. For a long time there prevailed an opinion that what are termed culinary fruits must be grown for cooking, but this fallacy is exploded, and we now find people who think for themselves giving preference to good dessert Apples for tarts and puddings, dessert Pears for stewing, and Green Gages for compotes, and the score of ways in which the cook can prepare them for the table. I do not condemn the culinary fruits, as many of them are hardy and prolific, and very rich when cooked or preserved, but being so accommodating, they should be grown as bushes, pyramids, and standards, while the finer sorts are placed against the walls. A wall which gets some sun no doubt turns off finer and sweeter fruit than one facing due north, but it is not a little remarkable that trees on the north wall not unfrequently set and carry full crops of fruit, when the same varieties facing due south partially, and sometimes totally, fail. Some years ago I planted three Jefferson Plums against a good Peach wall, a series of late frosty springs followed, and I never gathered a full crop of fruit. In due course they were transferred to colder limestone walls facing east and west. Protection, owing to their lateness, was discon-

tinued, and they now produce the finest of fruit, with the double advantage that the two aspects give a long succession of one of the best and most useful Plums grown in English gardens.

When dwarf-trained trees are planted in deep rich borders formed at the foot of a north wall, and the roots are allowed to ramble at will, the chances are greatly against success, as the strong wood seldom ripens properly. But this, I venture to say, is not the principle which should be adopted by those who would succeed. Dwarf-trained trees, of course, can be root-pruned, and this is the course which must be followed by the owners of existing trees, care being taken that they are raised and well blocked up by rough rubble until each tree stands on a mound a foot or so above the level of the border. Annual root-pruning, as practised by successful Peach growers, must then be followed up, but assuming that a wall is to be refurnished with a set of new trees, the first step should be an excavation 2 feet to 3 feet in width, and quite down to the existing drainage. Upon this an additional supply of rubble must be placed to within a foot of the ground line, and when broken fine to prevent particles of soil from running into it, the compost—sound loam, but not over rich—will form a narrow sloping border, a foot or more above the level. If dry it may be made firm by treading, but otherwise it must be left to settle gradually, when it will be ready for the reception of the trees. So far good, but what kind of tree must we plant? Well, cordons, all now admit, cover walls quickly, produce the finest fruit, and commence bearing the second year, and if bought in in advance and trained for a year on the open quarters, maidens may ripen a good crop within nine months after planting. Plums on the Mussel stock being strong growers, require attention when grown as cordons, but worked on the Myrobalan or *Prunus Myrobalana*, they make most prolific pot trees, and from this fact seem best adapted for cordons on north walls.

The Pear, as a matter of course, must be worked on the Quince, and the nearer to the ground the better, as trees in a few years will form roots of their own, and these close to the surface where they will derive the greatest benefit from solar heat and mulching.

In good situations where the Green Gage succeeds as a standard, it may be planted as a cordon, also the Golden Drop, Transparent Gage, Angelina Burdett, Belgian Purple, July Green Gage, Prince Engelbert, and Denniston's Superb. Of the common Plums, Victoria, Pond's Seedling, Early Prolific, Early Favourite, the Magnum Bonum, Diamond, Orleans, Prince of Wales and Washington are well adapted for changing the aspect of north walls in a pleasing and profitable manner.

Of Pears, the early sorts only which ripen on the trees or very soon after being gathered should be grown. Williams' Bon Chrétien, Louise Bonne of Jersey, Seckel and the favourite market varieties usually russety and

good from standards will give quantity and a good succession.

VINES IN THE OPEN AIR.

CHEAP timber and glass having put an end to the enthusiasm which once prevailed amongst growers of outdoor Grapes, Vines upon walls where allowed to remain at the present time are systematically neglected. Glasshouses, wall cases, and ground vineries being so cheap, it is questionable if anyone will again attempt the extensive culture of Vines upon open walls, at least for their fruit alone, but, independently of this, the foliage is so beautiful and the growth of the young rods so rapid, that I question if we are not neglecting one of the most ornamental occupants of our gardens, buildings, and cottages. Failure of late years undoubtedly has been the rule, success the exception, and yet there are many buildings the reverse of ornamental which might be made so by the planting of the hardiest varieties of Vines. South and west of London on warm sandy loams fairly good, but by no means rich, Muscats, Sweetwaters, Hamburgs, and the Black Frontignan may and do produce very good Grapes throughout a run of good average seasons, and they might be made to do much better were they thinly trained, judiciously stopped and root-lifted at the right time, and as regularly as their more fortunate allies in glasshouses. Not so many years ago Peaches were as uncertain as Vines; now they produce fine crops of fruit as regularly as do our Apples and Pears. And why do they thus freely respond? Simply because we pay careful attention to the most trifling details the moment the performance of each operation becomes due. Outdoor Vines, on the other hand, are planted upon rich soils innocent of drainage, their roots get down into cold, crude subsoils, and there year after year they are left undisturbed; the shoots ramble and coil and twine until the unskilled jobber comes round to train up, when the sudden removal of a cartload of wood and foliage produces a check, and the Vine, like any other fruit tree subjected to similar barbarity, is voted a failure. If anyone doubt this, let him plant a Vine in poor sandy or rocky soil at the foot of the south gable end of an old barn, if with projecting thatch or eaves so much the better; let him train thinly, pinch, stop, and prune regularly; in due course thin out his bunches and berries, leaving one bunch only on a shoot, and the seasons being good, I venture to say he will ripen good Hamburgs. I have in my mind three very fine Vines in three different counties to which this attention is given. The first, a Hamburg, covers the end of a thatched barn, some 25 feet in height, and ripens very good bunches of Grapes, the reverse of foxy; the second, also a Hamburg, is trained along the south and west sides of workshops in a nobleman's timber-yard, and this produces many scores of excellent bunches fit for the table and not a few bottles of wine, if not annually, certainly nearly so; the third, the most remarkable of the trio, an old Black Frontignan, is growing out of a large, roughly built stone chimney at the west end of a house in which Cardinal Wolsey for a short time was an inmate. This Vine starts from a sort of bevelled ramp about 10 feet from the ground, makes hard brown shoots by no means strong, but strong enough to show good bunches, which ripen perfectly. The projecting base of the chimney being very large, the inside, no doubt, is filled up with rough rubble material, through which the roots have travelled until they reached the foundation; thence probably under a hard terrace walk to the edge of a moat some 10 feet away from the building. How the Vine originated no one living knows, or whether the roots have actually reached the water the late tenant was uncertain. This, however, is a matter of little consequence, as it does not alter the fact that warmth, poverty, and a dry root-run are the main factors in the production of this Vine's fertility. I am not going into a calendar of operations, neither am I inclined to advise anyone to convert an old chimney into a Vine border, but this I may assert, rough rubble materials, including broken stone and brick, old mortar and charred clay, should form a

large percentage of the material used by those who wish to grow outdoor Grapes successfully. Others, again, who do not care for the fruit may follow on the same lines when planting for brilliant foliage only. The best sorts for this purpose are the Claret, Barbarossa, Alicante, Gros Maroc, West's St. Peter's, Burgundy, Lady Downe's, Gros Colman, the Parsley-leaved, and the Labruscas.

W. C.

FRUIT TREE LOSSES LAST SEASON.

MR. IGGULDEN'S most useful remarks (pp. 414-15) refer to the more general causes of loss than to the special losses of last season. Most cultivators will agree with the general purport of his remarks. A good deal has yet to be learned in regard to the growth, lifting, transportation, and planting of fruit trees before losses in these processes are reduced to a minimum, and the trees take at once to their new quarters without sulking or looking behind them. Perhaps the greatest cause of failure arises from the undue forcing of the trees into size. Maiden growths a yard or more long are not infrequently found on Peaches or Pears. Such vigorous growths are no advantage, but the reverse, above ground. Gross shoots have their counterpart in gross roots, and both are most unfavourable for safe and successful removal. For were there no other reasons for failure, the immaturity of the trees under and above ground furnish ample reasons. Unripened wood and roots are both alike unfinished. The less finished, the less independent, the more incapable of standing alone or making a fresh start. Hence when green roots are cut asunder, or separated from the soil, they either sulk or stand still—they cannot do otherwise—having, as it were, to concentrate their vitality before it is possible for them to make a fresh start for life and growth under new conditions. Should the young trees possess sufficient vital force or maturity, that is, latent energy in root, bole, or branch, they grow; otherwise they must die; and this to a great extent independent of such accidental conditions as skilful or unskilful lifting, packing, conveyance, planting, and after treatment. Important as all these are to success, neither one nor all of them put together can greatly augment the potentialities of life in green rootlets or branchlets.

These can husband, develop existing powers of growth, hardly create them. These powers reach their highest maximum in ripe wood or roots and sink to their lowest in green; hence the failure of so many overfed, rank, green young fruit trees. Nor is this vital lack of the power of growth their only disqualification. They are as unfit to succeed in the battle of life structurally as vitally. The stronger the roots, as a rule, the fewer fibres; the fewer fibres the fewer the chances for a fresh start. All these are the veriest truisms to experienced planters. Take a maiden or trained tree with branches 3 feet or 6 feet long and roots in proportion, guard and plant the latter ever so carefully, and whether stopped or unstopped there cannot by any possibility be a tithe of the mouths to lay hold of the soil as if the same tree had been furnished with a ramifying network of fibrous roots. Thus overfeeding for mere size becomes the chief cause of mortality among fruit trees.

Last season was so peculiar, all too like the present in fact, in its fostering late growths, that the mortality among young fruit trees rose to a most alarming percentage. Neither was the mortality by any means confined to transplanted trees. Hundreds of trees perished in nursery breaks and quarters where they stood. In such cases the greenness alone made them so tender that the gross sappy wood succumbed to the first frost. Tens of thousands of such trees also perished after planting, whether placed in the open air or under glass, as described by Mr. Iggulden. Neither root nor branch had sufficient stamina nor vitality to make a fresh start, and in many cases no amount of soaking in tanks nor of cultural skill could have pulled them through. The best, and in fact perhaps the only antidotes to the mortality among

young fruit trees are moderate growth, perfect maturity of wood, and as far as may be of root, and early and careful planting. D. T. F.

NOTES ON PEACHES.

THE following notes on Peaches, which we are enabled to publish through the kindness of our correspondents, will doubtless prove of much value and interest to our readers. They are from all parts of the United Kingdom, and give valuable information on the culture of this fruit. We again print the questions which we desired to have answered:—

1. Best Peaches for flavour?
2. Value of new kinds as to flavour?
3. What are the causes of the inferior flavour so often found in market Peaches?
4. What is the stock that gives the healthiest tree?
5. What is the stock—if any—that tends to disease and canker?
6. Outdoor culture in district; how far is it successful?

—With regard to your inquiries regarding Peaches, the following is my experience: Flavour.—Noblesse, Royal George, Bellegarde, Violette Hâtive, Stirling Castle, Early York, Walburton Admirable. I cannot find that the new varieties are any better flavoured than those named above. The reason why market Peaches are so deficient in flavour is in a great many cases because they have to be packed and sent to market before they are quite ripe, otherwise the railway companies and other carriers would convert them into jam. A Peach when fit for table will not bear any handling. A Peach to look well in market must be pulled off the tree a few days sooner than it would be for the grower's table. That is my experience, and we sometimes send to Covent Garden Market a great many fruit. I find that the best stock for Peaches is Plums of the Orleans type in shallow borders. I have not found that Peaches canker more on one stock than on another if their roots are not allowed to get too deep and the trees are carefully pinched and pruned. Peaches do not succeed outdoors in this county, except in a few isolated cases.—G. GRIFFIN, *Slebeck Park, Pembrokeshire*.

—Peaches we do not grow in the open now. We thought it advisable to cover them with glass some years ago. With respect to flavour, we have none to surpass the Nectarine Peach. The following are excellent: Royal George, Noblesse, Bellegarde, and Barrington. New varieties we have not much experience with. Condor and Sea Eagle are both rich and melting. My opinion is that the inferior flavour of market Peaches is to a great extent due to being gathered before they are ripe. Peaches are never so juicy nor rich as when just plucked ripe from the tree. I do not feel qualified to pass any remarks on stocks. In my experience outdoor culture of Peaches in this district is not a success. I gathered fair crops from our trees (before they were covered) with careful protection in their flowering stage, but they invariably got so severely punished by the cold, cutting winds, that I felt compelled to erect a permanent covering over them; every leaf, also the young wood were terribly blistered. I see the effects now (although they have been covered four years) by some of the wood gumming and branches dying back to where they had been previously injured.—J. SAUNDERSON, *Bodnant Hall, Eglwysbach, Denbighshire*.

—If I were tied to six sorts I would grow A Bec, Old Noblesse, Royal George, Bellegarde, Barrington and Walburton Late Admirable. They are all good healthy growers, of fine quality and constitution. The only new sort I have tested is Princess of Wales, and with me in an unheated house it is not to be compared to any of the previous six sorts. Want of flavour in Peaches, or indeed any other fruit, arises from various causes, but the main ones in my opinion are over-cropping, poverty in the soil, and want of heat. Let anyone test a tree that has been properly thinned and well nurtured, and then try one that has been left partly to its own resources,

and he will soon find where the shoe pinches. The great drawback to Peach culture in this neighbourhood is want of climate. If one could get sun enough to well ripen the wood, the after management would be simple enough. I firmly believe that fruit trees of any sort have only a limited amount of flavouring matter, and if you spread that over a heavy crop you do so at the expense of flavour. I have noticed repeatedly an ordinary crop well done will always beat a heavy one for flavour, no matter how well the trees may be looked after. Moral—do not over-crop. The stock that gives the healthiest tree is the one that keeps pace with the scion. How often do we see the scion over-growing the stock till the trees become stunted, and out of health in consequence. The main points to be considered in Peach culture are, first, a good, sound, stiff, yellow loam for soil, good healthy trees to start with; keep lifting once or twice till they get into a good bearing state; do not lay in more wood than can get well ripened; do not over-crop, and feed well while the fruit is swelling, and then expect a good return for your labour. But after all Sol is king, and without his beaming rays labour is vain, so far as outdoor culture is concerned here.—JAMES LOUDEN, *The Quinta, Chirk*.

—In reference to the quality of Peaches, my impression is that the following half-dozen standard varieties are still in the front line as regards flavour—Noblesse, Royal George, Grosse Mignonne, Bellegarde, Barrington, Dr. Hogg. The value of new kinds consists specially in being very early or very late. Some of the former I have thrown out for want of flavour. The late varieties are valuable for their fine appearance on the table, and for adding materially to our resources late in the season. The want of flavour in market Peaches is due in the first place to overcropping, and then to ensure safety in transit they are usually gathered before they are quite ripe; further ripening is done in the fruiterer's window at the expense of flavour. The Plum stock appears to be the best and most generally in use. Strong growing, hardy varieties should be selected that will keep pace with the growth of the Peach. We sometimes see the stock grow so slowly that its diameter is only one half of the Peach. This disparity of growth acts as a kind of ligation upon the resources of the tree and leads to debility in various forms. Peaches out of doors are very poor in this neighbourhood. Here we have none. Outdoor cultivation has been a losing concern of late years. Soil and situation, no doubt, are all-important, and some favoured localities with good shelter and warm sandy loam have still a fair amount of success; but, generally speaking, the results of the present day, as compared with those of thirty years ago, are so discouraging, that most people are inclined to turn their walls to better account.—G. SMITH, *Vice-Royal Gardens, Phoenix Park, Dublin*.

—Here we have a Peach wall 250 feet long and 14 feet high, and for the last twelve years, with the exception of the present and the year 1880, we have never had a failure. I consider one of the great secrets of growing successfully Peaches and Nectarines outside is in lifting the trees, say, every third or fourth year. If the border can be entirely given up to them so much the better, as then you have the roots entirely under control; and another great point is in not allowing the young growth to become too crowded, as if this happens it is impossible to get the wood thoroughly ripened, even in the most favourable seasons. Where such is the case, the consequence is canker and failure, and last, but perhaps not least, is a plague of aphides. The best remedy, I find, is giving the trees three or four good syringings with soapsuds fresh from the laundry just before the blooms open, and another after the fruit has set. This, I generally find, keeps the trees clean for the remainder of the season. The best Peaches for flavour outside here are Hale's Early, a capital variety, followed by Royal George, a grand old Peach, Bellegarde, Grosse Mignonne, and in favourable seasons I find Walburton Admirable an excellent variety and of first-class flavour. The best Nectarines for outside in this district are Stanwick Elruge, Victoria, and Pine-apple. Re-

specting the inferior flavour generally met with in market Peaches, I consider one of the causes is overcropping, especially of outdoor-grown Peaches, and also shortness of water at the roots, especially in dry and hot summers. I prefer the Mussel stock for most varieties; still, I have known trees worked on the Almond and Plum stocks answer remarkably well, having known them to last from twenty-five to thirty years and retain the best of health. One great cause of canker is from tying the shoots too tightly, and also from striking the shoots with the hammer during the process of nailing.—RICHARD MILNER, *Sundorne Castle Gardens, Shrewsbury.*

— I think none stand so high as Noblesse, Royal George, Grosse Mignonne, and Early York for flavour. The cause of tasteless market Peaches is quite apparent, as 90 per cent. of the fruits are picked before they are ripe, and Peaches will not ripen after being picked, like many other fruits.—JNO. RAFFERTY, *Castle Forbes, Newtown Forbes, Ireland.*

— With respect to your queries on Peach culture, I have numbered my answers below. 1. Early Alexander, Hale's Early, Royal George, and Noblesse, which is one of the best flavoured in cultivation. 2. Wet seasons and bad subsoil, together with varieties unsuited to the several districts. 3. Wild Plum. 5. This year it is very successful, and, generally speaking, it is invariably so.—H. MOREIS, *Glanafon Gardens, Tainbach, Fort Talbot.*

— Best Peaches for flavour, Dr. Hogg, Noblesse, and Royal George. Causes of inferior flavour so often found in market Peaches, I consider the high feeding to produce size, and their being generally picked before they are ripe. The stocks that give the healthiest trees I have found to be the Plum, the Mussel, and the white Pear Plum. The Peach stock is the worst in this part; the leaves of the tree are small and go yellow. A few varieties are doing well on the Almond stock, but the Plum is the best. The Peach stock is the one that tends to disease and canker.—R. C. WILLIAMS, *Crosswood Park, Aberystwith.*

— The best flavoured Peaches here I consider to be Noblesse, Late Admirable, Rivers' Early York, and Bellegarde. Picking fruit for market a couple of days before being thoroughly finished is one great drawback as to flavour. This system is acted upon to save the finger marks that so easily appear on a well ripened fruit. Over-cropping, too, will have a marked effect on the flavour. There is no doubt that the Plum is the best stock to work Peaches on for this climate. I think outdoor culture is rapidly failing. The outdoor cultivation of Peaches is very unsatisfactory, as glass and timber are so cheap that a Peach case will in a few years enable the trees to pay for their housing.—ROBERT MCKENNA, *Chief Secretary's Lodge, Dublin.*

— For flavour I give preference to the following: Early Alexander, Early Beatrice, Early Victoria, Royal George, Grosse Mignonne, Stirling Castle, Noblesse, Violette Hâtive, Malta, and Late Admirable. The inferior flavour found in market Peaches is due, in my opinion, to their being picked too green and the Moss packing used, which if not thoroughly clean and freed of all earthy particles, spoils the flavour of any ripe fruit and most certainly that of Peaches when it gets the least damp. I consider the Mussel Plum the healthiest stock for the Peach; over-strong growth can always be checked by timely root-pruning. Very few Peaches are grown outdoors in this neighbourhood.—D. CROMBIE, *Powerscourt, Enniskerry, Ireland.*

— Out of thirteen varieties of Peaches grown here, the following are the best flavoured: Hale's Early, Noblesse, Condor, Royal George, Dr. Hogg, Stirling Castle and Grosse Mignonne. Walburton Admirable, so often mentioned by your correspondents, bears a heavy crop of large, but almost flavourless fruit. Condor is a Peach that bears well, of medium size and good quality, and ripens a fortnight before Royal George. The causes of inferior flavour so often found in market Peaches are, I consider, through their being picked before they are ripe, the material used in packing and greatly

to large-fruited sorts being grown. Large insipid fruit realise better prices than medium-sized of good flavour. The Plum stock seems to answer well. Outdoor culture is not attempted here.—GEO. DUNCAN, *Warter Priory, Pocklington.*

— It is gratifying to find so many readers of THE GARDEN responding to the queries sent forth by the editor. The replies in some instances I must admit are at variance with my idea of quality, but this may be accounted for in two ways: soils and situations, independently of culture, affect Peaches as they do other fruits, especially Pears, in different parts of the country. Nomenclature, another and perhaps more serious cause, is so faulty, that it is quite possible, indeed very probable, that some of the varieties praised or condemned have no claim to the names they are known by. If anyone doubt the loose way in which Peaches are named, he has only to look through the replies, and there he will find Alexandra frequently mentioned. Alexandra, what is it? I know Alexandra Noblesse, one of the late Mr. Rivers' best seedlings, and I know Alexander, an American variety, early, handsome, thin in the mouth, and slightly adhesive or clingstone. If quality is to be the test of merit, then Rivers' Alexandra Noblesse should be written in full, the American Alexander should be sent to the right-about, as we have enough and to spare without growing clingstones. Alexander is highly appreciated in America, where the hot climate melts its fleshy flesh and suits the palate for anything sweet, pleasant, and refreshing; but it is very poor with us upon open walls, and unless it be for appearance, it certainly is not worth forcing. Another proof of suspicious nomenclature is the unqualified way in which Mr. Muir condemns Sea Eagle. Now I do not say this variety is our best late Peach, but I assert that it is one of them, superb under glass, and equal to Barrington, which it succeeds when well managed against south walls where late sorts ripen well. When men of light and leading like Mr. Muir condemn this fruit, it is only fair to the raiser, the late Mr. Rivers, to show that they have given it a full and fair trial—that they have done their very best to bring out its full size, colour, and flavour. Then, if they fail, they are quite justified in saying it is a failure in their locality. The climate of Margam is soft, mild, and hazy, and in some respects reminds one of Cornwall, where tender shrubs are always growing. In such situations the Peach requires a high, dry, and breezy aspect, where every ray of sun when in growth and cold when at rest can reach it. An east aspect in a moist climate, I think, hardly does this Peach justice; a west wall would suit it better; but if worth growing at all, all late varieties should have a full south exposure. Several writers have voted late Peaches a failure, and no wonder if east walls only, barely good enough for Red Currants, are given them. I endorse Mr. Muir's statement that Early Silver, the parent of the preceding, is a good one, much better than the Sawbridgeworth seedlings with the prefix "Royal" attached to their names. It may not be generally known that this delicious early Peach originated from the old White Nectarine, a variety now seldom met with in English gardens. It is not remarkably rich, but it has a peculiar piquant flavour, especially when well grown and allowed to hang until it shrivels upon open walls or in the Peach house. When at Appley Towers, in the Isle of Wight, in August last, I met with this very old friend in Mr. Myles' heavily laden Peach houses, and there, as one may readily suppose, the fine sunny position brought out the flavour met with in its descendants, Early Silver and Sea Eagle, to perfection. Those who would do full justice to themselves as well as their fruit should read over and over again the excellent article (p. 346) by Mr. Douglas on flavour in Peaches and Nectarines. This practical grower's trite remarks upon soil, aspect, the importance of sun and air, thin training, light cropping of the borders, protection the reverse of coddling, and the use of a stimulating insecticide manufactured in the home laundry, so completely embody the art of successful culture, that I cannot refrain from thanking him. If the best of Peaches can be grown

upon a cold soil on the east coast of Scotland, whom and what must we blame for failures in England, the growers or the Peaches? Our climate cannot be in fault, for only a few short months ago theorists assured us our Apple failure was due to tropical weather.—W. COLEMAN, *Eastnor Castle Gardens, Ledbury.*

WORK IN FRUIT HOUSES.

PEACHES.

WHEN the buds in the early house become very prominent, and that dreaded period, the dropping stage, has been left behind, a little more warmth may be indulged in through the early part of the day, especially when the weather is fine and mild, and very moderate firing keeps up the temperature with a free circulation of air. The trees, too, may be nicely dewed over with tepid water and the walls very freely syringed, but the main source of a constant stream of atmospheric moisture must still rest in the fermenting material which produces a most salutary effect in drawing the roots upward to the surface of the border. No change should be made in the night temperature, which may range from 40° to 45° on cold nights, and 45° to 50° when very mild. Where the very early sorts are forced, some of the trees will soon be in full flower, but before the most forward burst their petals, the house should undergo at least two smokings to ensure immunity from aphids when the fruit is setting. This operation is so important and yet so easily and cheaply performed, that one is taken by surprise when he finds this troublesome pest undoing the work of a whole year. The trees, I may say, should be quite dry, the house cool and close, and the weather very calm when fumigating is going on.

Succession houses containing a few of the old standard varieties, which cannot be beaten, may be started so soon as the trees are put in order, and success depending so greatly upon a low night temperature with plenty of air, particular attention should be devoted to this point until after the fruit is set. We often hear the remark that some of the new varieties beat Royal George and Noblesse by a month or six weeks, but what of this if the two houses are started together, and grand fruit which has made our reputation is the result. Detailed management in the earliest and succession houses must be precisely the same, viz., a maximum of air without creating a draught, plenty of atmospheric moisture from the fermenting bed, and very gentle warmth on the pipes throughout the earliest part of the day. If Strawberries occupy the shelves, the plants and pots, as a matter of course, will have undergone the preliminary dipping in soap-suds and sulphur as a preventive of the advent of mildew, spider, and fly, and yet they must be closely watched, as these pests spring up when least expected, and not unfrequently when severe measures cannot be applied. If the houses have been stripped and internal borders have been thoroughly moistened by soft refreshing rain, it is hardly likely that artificial watering will be necessary, but so important is root moisture, that it will not do to trust to external appearances; therefore, each border should be examined before the house is closed.

Late houses.—The weather having been so unusually mild and dry, the trees in these structures are in better condition than I have seen them for some years, and that without the aid of one iota of fire-heat. Indeed, so mild is the weather, that all Peach houses not actually started require the most liberal ventilation by night and day to prevent the buds from becoming too forward. A thoroughly plump bud is, of course, a very important point, but there expansion should stop, otherwise the embryo organs of the flowers will become excited and most likely perish under a long spell of severe weather. To prevent this all ventilators and doors may be left wide open by night and day, and those magnificent mops of Chrysanthemums which now monopolise all the space at command must put up with a lower and proportionately drier temperature than many enthusiasts persist in maintaining. Quite recently I saw a double line of giants running

right through several Peach cases, which must be warmed to drive out damp and shut up to keep out threatening frost, and sure enough the enervated trees will have their revenge when they should be opening fine flowers and setting bold fruit. These trees may be pruned, dressed, and tied in at any time, but there is no hurry, especially where work should be kept in hand for the men in bad weather. One of the most common errors in the management of late trees is leaving in too much wood, not only in winter, but also in summer, for no matter how carefully other details are carried out, crops are unsatisfactory when the crowded shoots are green and spindly and poorly furnished with buds. From 5 inches to 6 inches apart is quite close enough for stout brown shoots, and when we consider that one good fruit to each square foot means a heavy crop, it is simply unprofitable to leave more. In the management of very old trees young shoots should be tied upon the upper sides of the large branches, not only to secure an even distribution of leaves and fruit, but also to produce shade when the sap is flowing at a rapid rate. If root-lifting or replanting remains unfinished, no time should be lost in getting this work over, and last, but not least, although partially resting, plenty of water must be given to the roots.

CHERRIES.

Pot trees taken in last month and encouraged by the smallest particle of genial warmth from fermenting leaves will require the fullest ventilation and then will make rapid progress with the aid of fire-heat. As the buds swell, the trees may be gently syringed once during the forenoon of bright dry days. When wet or foggy the syringe must be laid aside, but the floors may be damped and the fermenting material turned. The roots, too, will require plenty of tepid water, especially if pot-bound, as all stone fruit trees should be before they are in the best condition for early forcing. As the buds swell and shows signs of expanding, the usual enemies, grub and green and black fly, must be looked for and checked. Hand-picking is the only mode of dealing with grub, but fly can be destroyed by one or two mild smokings when the house and trees are quite dry. Trees planted out in inside borders require similar attention as regards fresh air and the most stingy use of fire-heat. A good watering with water at a temperature of 70° is a great help when the buds are on the move, and the same may be said in favour of its application to the roots of its happy companion, the

PLUM.

In many places the two are started and grown for some time under the same roof. There comes a time, however, when the Cherry shoots ahead of the Plum, and this being the case it is best to keep them in separate compartments from the first. The best time for December syringing is about 12 o'clock at noon, for then the buds become quite dry before night, when a very low temperature does no harm. The figures which should be touched in favour of Cherries and Plums may range from 40° to 45° at night, and 50° to 56° through the day. The temperature sometimes runs a little higher, but no harm happens if the trees are liberally treated to fresh air. Very old trees which hardly make any strong wood must never feel the want of water, and in some instances, especially when growing in narrow borders against the back walls, a tinge of mild liquid will do them no harm. If Cherries or Plums prepared in the open quarters are well set with flower-buds they may still be lifted and potted, but they must not be forced. The finest varieties of Cherries are not half enough grown, for, independently of their sweetness and beauty when in flower, they produce fruit which cannot be touched by trees subject to wet and attacks by birds against open walls.

W. C.

Phylloxera and tank borders.—Believing that I am responsible for the communication that appeared in your issue of Jan. 17, 1885, signed "W. C. T.," and referred to by "A. W. N." in THE GARDEN, Nov. 23 (p. 484), I beg to state that I am still a firm believer in the statements contained in that article, and in order to test their

accuracy I should feel obliged if "A. W. N." will again thoroughly submerge his Vine border for four days, and then select some of the worst affected roots and forward them to your office to be examined by an expert under a powerful microscope. The border should be thoroughly submerged, the whole surface being at least 4 inches under water, and at no period during the ninety-six hours of submersion should it be allowed to recede below that level. If "A. W. N." will kindly undertake to do this, and if you will also kindly undertake to have the roots properly examined and then make known the results, I feel assured you will confer a benefit on those who, like myself, have suffered from the ravages of this pest, but who, like "A. W. N.," have failed (from some cause or causes yet unexplained) to benefit by the advantages to be obtained from thorough submersion.—T. CHALLIS.

* * This we shall be pleased to do.—Ed.

PEACHES FOR FLAVOUR.

I FEAR I have not yet answered your most useful queries on this subject. The best Peaches for flavour are Noblesse, Royal George, Grosse Mignonne, Barrington, Violette Hâtive, and Teton de Venus. Nectarines: Elruge, Violette Hâtive, Pit-maston Orange, Hardwicke, and Pine-apple. As to new kinds, Alexandra Noblesse, Hale's Early, Princess of Wales, Sea Eagle, and Dr. Hogg approach nearest to the old varieties. None of them excel them in flavour; in fact, it hardly seems possible that any Peach, old or new, will ever excel a well-ripened Noblesse outside or in. Among new Nectarines, Victoria when it does not crack, Humboldt when not too late, Early Orange, and Lord Napier, are good. The cause of the inferior flavour of market Peaches, which is worse generally in France than in England, is premature gathering. The temptation to this is very great, as ripe luscious Peaches are so easily injured and very perishable; hence, they are often gathered, packed, and sent to market and shop green; and unfortunately, Peaches cannot be ripened after gathering without an almost complete sacrifice of their flavour. Colour, bloom, freshness may all remain intact, but the flavour, not having been perfected on the trees in the light, cannot be developed to anything like perfection afterwards. Other two contributory causes to the lowering of the flavour of market Peaches are overcropping and dryness at the roots. As to overcropping, there can be no doubt that it lowers flavour. It seems almost in fact as if trees possessed only a certain amount of flavouring power. They seem to have far less difficulty in setting and swelling crops than furnishing them of the highest excellency. The withholding of water from the roots too early also checks the evolution of perfect flavour. Probably this arises from an over-thickening of the sap, causing it to be secreted in over thick layers that tend to form woolliness rather than lusciousness of flesh. On the other hand, overdoses of over-pungent manure water, top-dressings of rank solids, or an excess of clean water after the flesh softens and mellows towards maturity are sure to impair flavour.

As to stocks, trees being mostly purchased as maidens, it is difficult to write with any certainty. As to the best stocks, the Mussel and Brompton Plum are mostly preferred. But the majority of trees mostly assume a warty protuberance above the point of union between the scion and the stock, proving that the Peach and Nectarine try to overgrow the Plum stock. Notwithstanding this, Peaches in East Anglia seldom thrive, grow, or fruit so well on seedling Peaches or Almonds as on Plums—closeness of affinity not being by any means the be all nor end all of Peach culture. An Elruge Nectarine with a huge wart has hardly ever failed to yield a capital crop of specially fine flavoured fruit for thirty years.

Canker, unless these warts are termed such, is not very common in Peaches in East Anglia, and this summer the wood is specially clean, strong, and healthy. Frost-bites in the spring, when the east wind often goes right through bark, and wood, and pith as with a knife, are the worst obstacles to outdoor Peach growing in this county.

Notwithstanding, out-of-door fruit culture is fairly successful and very generally practised throughout East Anglia. It would seem invidious to name gardens; suffice it to say that I have seen as fine open-air Peaches in this district as in any other county or district of Britain or in France. In fact, the finest flavoured Peaches are still grown in the open air, and this after years of experience in growing and testing Peaches indoors and out.

Greater size, richer colouring may—though that is almost admitting too much—occasionally be found under glass; but for fulness and lusciousness of flavour commend me to a Noblesse, Royal George, or Grosse Mignonne from the open wall.

D. T. FISH.

Hardwicke Hall, Bury St. Edmunds.

TREES AND SHRUBS.

BAMBOOS.

DOUBTLESS others besides Mr. F. Cowslade would be glad of some further information concerning these. There are many more hardy kinds than people suppose. There are certainly not less than a dozen quite hardy and distinct. The two great essentials to successful Bamboo culture are shelter from cutting winds and plenty of moisture during the growing season. Bamboos are unaffected by the severity of frost, which often intensifies the rich green colour, but a few days of sharp east wind often suffice to brown all the foliage and sadly disfigure them. There are, however, especially in large gardens, many sheltered spots where Bamboos will thrive, but generally it is by the water-side that they attain to their greatest stature and display their fullest grace. In all situations Bamboos are ornamental, whilst being evergreen they are especially valuable, for we can enjoy their beauty the whole year round. There are giants which almost grow into trees, and also lowlier kinds which form huge spreading shrubs. In the minds of many, Bamboos are associated with the Tropics and a tropical heat, but the Tropics do not contain one half the members of this beautiful family. North China and Japan have given us the finest kinds now available for the garden, and perfectly hardy. With these we may have all the luxuriance and grace of tropical vegetation in summer and winter. The French have paid much more attention to the Bamboos than the English, and I have before me as I write quite a long list of hardy Bamboos from M. Latour-Marliac. We have here (in Suffolk) a rather extensive plantation of more than a dozen kinds which I have been observing closely all through the season. Although none of them have been planted more than two seasons, so great is the progress they have made and so exceedingly beautiful and distinct are some of the kinds, that a fairly accurate conclusion may be drawn concerning their respective merits, and much more may possibly be said later on, for if the present rate of progress continues, amazing results will be achieved. Many of our Bamboos have this season made shoots 10 feet long in about a month, and some strong shoots upon B. Mitis grew as much as 4 inches and 6 inches in twenty-four hours, as proved by actual measurement upon several successive mornings. Mr. Cowslade asks about protection. If his plants, being newly planted, have not made much root growth it might be advisable to protect the roots with a little fibre, as proposed, or a little brake scattered over them will do admirably. Beyond this no protection is needed, unless the present year's shoots were made late and appear likely to suffer. Mr. Cowslade says he has the desired shelter and moisture, and if he

continues his experiments in Bamboos, an interesting field of labour is open to him. I would certainly advise him to plant next spring all the kinds he enumerates, each of which is mentioned further on.

B. METAKE.—This is the commonest, hardest, and most accommodating of all the Bamboos. It is a free-growing, large-leaved kind, attaining a height of from 4 feet to 8 feet. Its foliage is the largest of all the tall kinds, the leaves being each about 10 inches long and 2 inches broad. Its stems are very erect, and the branches cluster round them in thick tufts. It is a native of Japan.

B. RAGAMOWSKI is a dwarf species. It might almost be called a dwarf Metake, as it much re-

sembles that species, but is even handsomer, the leaves growing a foot or more in length and attaining a breadth of as much as 3 inches. So far as I have seen it does not grow more than 2 feet high, but suckers freely, spreading out into wide tufts of ample and rich foliage. Used as a groundwork to taller kinds or in broad masses in front of them it would be very effective. It is a native of China and Japan.

B. SIMONI, also from China and Japan, is a distinct and handsome kind, forming huge tufts about 10 feet high. In a young state its habit much resembles that of *B. Metake*, but it is readily distinguished from that species by its narrower leaves, which rarely exceed 1 inch in breadth, but are about 10 inches in length. Its habit is very erect, and the clusters of branches upon the canes are very dense. Under the name of *B. Simoni* variegata is sold a form with narrower leaves, which are striped with white, but so far as I have seen the whole tuft has a half dead appearance, and I should not recommend it, especially as there are one or two really fine variegated kinds.

B. VIRIDE-GLAUDESCENS is the most graceful of all the hardy Bamboos. It is vigorous in growth, perfectly hardy, and surpassed by none for elegance and beauty. In the "Dictionary of Gardening" it is made a synonym of *B. nana*, which is said to be "a rather tender species, requiring to be grown in the stove or greenhouse." This cannot apply to *B. viride-glaucens*, for there is no *nana* about it, and it certainly is not tender. Moreover, it is said *B. nana* grows from 6 feet to 8 feet high, but *viride-glaucens* grows 12 feet high and spreads over a lot of ground. The young shoots are of a purplish green, but with age become yellow. The branches are inserted at right angles and arch gracefully, the leaves being about 3 inches long and about three-quarters of an inch broad. Young tufts of this Bamboo are exceedingly light and elegant in appearance, and the old canes have such feathery clusters of foliage that they have been compared, and not inaptly, to a group of finely cut *Chamaedoreas*. This kind should be included in the smallest collection, and if it were only possible to grow one kind I would have this one in preference to all others.

B. MITIS is the giant of hardy kinds. It is a native of China and Japan, where it is said to attain the height of from 40 feet to 60 feet; but, of course, it will not attain anything like that height in England, although it will grow 16 feet high. It does not spread much, but the canes spring up in close proximity to one another. They are large and gradually taper to the tip. The branches, which form a slight angle with the stem, are clothed with an abundance of leaves, which are each about 2 inches long and a quarter of an inch broad. It is one of the smallest leaved Bamboos.

B. AUREA grows both in Japan and China. It somewhat resembles *B. Mitis*, but is of a more erect and rigid habit, and the leaves are rather larger. The canes are yellow, as the name implies, but this colour is only taken on with age. It is a very ornamental species and somewhat variable. What is known as *B. sulphurea* is probably only a variety of *aurea*, and there may be many other slightly varying forms of it which have given rise to the somewhat confused nomenclature of the genus.

B. QUILLOI is one of Mons. Latour-Marliac's kinds. He calls it a magnificent Bamboo, and so it is. It is said to be one of the hardest, growing 12 feet high. The canes are like those of *B. aurea*, but the leaves are altogether larger, especially in a young state, when they are as much as 5 inches long and 1 inch broad, whilst the clusters of hairs beside the leaf-sheath are larger and more conspicuous in this kind than in any other of what may be called the *aurea* type.

B. FALCATA.—This is often called *Arundinaria falcata*. It is an Indian species, and probably, next to *B. Metake*, it is the commonest Bamboo in gardens. It grows from 3 feet to 6 feet high in gardens generally, but in favoured situations it often attains to double or treble that height. The canes are slender, but freely branched and densely clothed with a profusion of Grass-like leaves, which are of a light green colour. It is not thoroughly hardy.

B. GRACILIS is made a synonym of the above, but it can hardly be so, as it is still more tender; at least, the shoots, being made late in autumn, are usually cut down by frost. But if treated as an ordinary perennial plant and cut down to the ground each spring, other shoots soon appear and

form graceful tufts of grassy foliage, which looks fresh and beautiful all the summer.

B. HENONIS, or *B. Hachiku*, is a Japanese kind which came from M. Latour-Marliac, and it is destined to become popular when known. It is vigorous and hardy; in fact, last spring it looked as well as any other; the cutting winds had done their worst in spite of natural shelter. One shoot has this year reached the height of 12 feet. It promises to be an exceedingly graceful kind, as the slender canes, arching outwards, branch freely, and the branches are densely clothed with rich green leaves, which vary in length from 1 inch to 3 inches, and are about half an inch broad. It is well known that several seasons must elapse before a Bamboo reveals its true character; therefore *B. Henonis*, although already exhibiting high qualities of vigour, hardness and grace, may yet become still more beautiful. Certainly it is a valuable addition to hardy kinds.

B. NIGRA is a graceful species and a native of Japan. In a mature or full grown state the canes



B. Mazelli and B. Metake.



Square-stemmed Bamboo.

are of a shining jet-black hue, but in a young state they are green, and ultimately change to brown. Those fine black canes obtained from this species for umbrella and other handles will hardly be made in England, but, nevertheless, it is a free and graceful variety with arching shoots and an abundance of small, rich dark green foliage.

B. VIOLESCENS is so called from the violet-black tint of the young canes. It is a Chinese kind and a vigorous grower, attaining to the height of *B. viride-glaucens* and proving quite as hardy. The canes are freely branched and well clothed with rich foliage. In a young state the leaves are each 5 inches to 6 inches long and 1½ inches broad, but upon the mature or older canes they are shorter and narrower. The clusters of black hairs around the leaf-sheath are very conspicuous in this species.

B. FORTUNEI is a Japanese species, which never grows more than 2 feet high and has a slender stem. It might almost be taken for a vigorous native Grass, but it is a valuable plant, nevertheless,

and useful for associating with the taller kinds. It is only found in gardens in its two variegated forms, which are named respectively *B. Fortunei argentea* and *aurea*. These are the only variegated Bamboos worth growing that I have seen. The first named kind has long narrow leaves which are striped with white, and the variegation is effective, constant and very enduring. The variety *aurea* has broader, yellow striped leaves, and the colour is apt to fade towards the end of the season, but in spite of this it is a handsome foliage plant, and well worth cultivating.

B. Mazelli, or what we had under that name, has been referred to *B. Quiloi*, so perhaps Mr. Cowslade will recognise his *Mazelli* in the description given of *B. Quiloi*.

M. Latour-Marliac speaks highly of the following somewhat new hardy kinds: *B. Boryana*, *B. Mariacea*, and *B. Castillonii*. The last-named kind is especially interesting, as it is one of the curious square-stemmed varieties, two sides of the stem being green, and the other two sides yellow, whilst the leaves are striped with yellow, the variegation proving both regular and constant. It is a vigorous grower and should soon become common in gardens.

There should be a great future before these hardy Bamboos when their variety and merit become better known. We greatly want something to vary the interest of our gardens, in which there is much repetition of common shrubs. H.

THE MEDLAR.

MR. A. D. WEBSTER, in *THE GARDEN* (p. 428), does well to call attention to the merits of the Medlar as an ornamental tree. It is handsome in foliage, flower, or fruit, and its unique and sometimes grotesque form renders it conspicuous. I have occasionally met with a fine Medlar ornamenting a lawn—a venerable specimen that had been planted when the place was originally laid out. To gain a true idea of the beauty of the Medlar it is necessary to see it, as unfortunately now we rarely can, in an old Kent or Sussex orchard, especially if it happens to be near the farmyard pond. I know of several aged hoary specimens in such situations, and very beautiful they are, but they will soon fall through sheer age and weakness, and there are no young ones near to take their place.

Next to the Medlar comes the Quince, for it is equally as interesting, and a handsome tree at all times and in all places, although it never looks better than when growing upon the bank of a stream or pond. Moreover, there is variety among the Quinces, for besides the common form there are the Pear-shaped and another called the Portuguese. A tree heavily laden with huge fruits like great stewing Pears is ornamental indeed. I saw such a one a week or two ago in a cottager's garden. In a Sussex garden I once saw Quinces had been planted upon the banks of a small sheet of water, and when I saw them they were great spreading trees, remarkably effective and handsome.

Another beautiful, but neglected plant is the true Service Tree (*Pyrus* or *Sorbus domestica*). So much has this tree been neglected, that I have experienced considerable trouble in obtaining it from even noted tree nurseries and, more than once, what has been sold to me as the true Service Tree has turned out to be either the white Beam (*Pyrus Aria*) or the wild Service Tree (*Pyrus torminalis*), both ornamental in their way in foliage, flower, and fruit, but very undesirable when they turn out to be second-rate substitutes palmed off as a first-rate thing.

The true Service Tree, although a native of England, is rare; it has downy pinnate leaves, branched panicles of flowers, and a green, pink-shaped, Pear-shaped fruit which is edible. This tree ought certainly to be more frequently planted, although, doubtless, others like myself have been disappointed in their attempts to obtain it. Probably if a demand arose for it it would be met

and supplied, and those who are in search of interesting trees during the coming planting season may well make inquiries for it, and if possible obtain and plant this tree. A.

THE LACE-BARK PINE.

(*Pinus Bungeana*.)

If we except nursery specimens, the number of trees of the Lace-bark Pine to be found throughout the country might almost be counted on the fingers of both hands. This may seem somewhat strange when I state that since the introduction of the tree, forty-three years ago, I cannot find an authentic example of even one specimen having succumbed to the rigours of our severest winters; indeed, the very reverse of this is the case, for when many of our so-called hardier Pines were killed by the prolonged frost of 1861-62, the Lace-bark Pine stood uninjured.

That it is perfectly well adapted for almost any part of the British Isles I am now, after a prolonged and careful investigation, fully convinced, and the sooner that a specimen or two of so distinct, curious, and handsome a tree are included amongst our general collections the better, for it certainly merits a far greater share of attention than it has hitherto received.

One of our leading nurserymen told me the other day that, like many other desirable and perfectly hardy trees and shrubs, the Lace-bark Pine was hardly worth keeping in stock so seldom was it asked for. This is a pity, and can only be explained by saying that the tree is not well known, and, consequently, but seldom inquired for, unless by the few who make Conifer cultivation a specialty. The best specimen of *Pinus Bungeana* that I have yet seen is growing in an open portion of a peaty woodland in the County Armagh, Ireland. It is not planted in pure peat, for when placed in its present position a quantity of road-scrappings was mixed with the peat which formed a compost that, judging from the healthy appearance of other equally rare Conifers, including the Umbrella Pine (*Sciadopitys verticillata*) and forms of Prince Albert's Fir (*Abies Albertiana*), would seem to suit its particular requirements.

Shelter might certainly have something to do with the free growth and healthy appearance of these trees, they being surrounded, unless on one and the most sheltered side, by fine old specimens of the Horse Chestnut, Larch, and Beech, but at such a respectable distance away as to quite ensure against molestation either by root or branch. The ground, too, is low-lying, being hardly 100 feet above sea level, and never exposed to harsh winds and long-blowing storms.

The Lace-bark Pine, both in general character and habit of growth, is a very marked and peculiarly distinct tree, the light grey bark peeling off at stated intervals, and giving to the stem a somewhat unusual appearance, that is at least different from that of any other member of the family to which it belongs. The leaves are of a pleasant and bright green, being individually about 3 inches long, and arranged three in a sheath, and remarkably strong and persistent.

It is in this country a Pine of rather slow growth, even when placed under what would be considered as most advantageous conditions, but what is much in its favour is that the stem is stout and stocky, and formed as if to do battle both with severe cold and prolonged storms.

When better known, and its perfect hardiness no longer doubted, it is to be hoped that

so distinct and desirable a tree will not long remain, as it is at present, almost a complete stranger in this country. A. D. WEBSTER.

CUPRESSUS MACROCARPA.

THIS tree must certainly be mentioned as one of the most valuable from many points of view. Introduced about thirty years ago, it has the rare distinction of having proved itself in that short time more rapid and vigorous in growth in our moist climate than in the drier one it came from in California. On the windy heights of Punto Pinos that overlook Monterey Bay, where the head-quarters of this *Cupressus* are to be found, it is a stunted wind-blown tree with spreading, horizontal branches and thickened trunk that tell of the barren soil and the fierce north-west wind, as well as the rainless climate against which it has struggled. Nourished by frequent sea fogs, long hoary Lichens hang beard-like from the leeward branches, and make a strange contrast with the rich green foliage of these groves now so sought after by pleasure-seekers, who here find a cool retreat from the inland heat of a Californian summer. In a position such as this, where the drifting sand whitens the ground, this tree does not attain a greater height than 30 feet or 40 feet even in old age; but, growing as it does where no other tree could exist, it may well be imagined what a future must be before it for all seaside planters; and at a little distance from the shore, where instead of a one-sided struggle for existence, it can spread out its branches evenly, what a beautiful tree it is! Its greenness of foliage, coupled with extreme rapidity of growth and beauty in a young state, have long since made it a great favourite in the south-west of England and Ireland, where already it surpasses in height its progenitors in Monterey Bay. Unluckily, there has been a prejudice against this tree on account of its supposed inability to stand severe frost, because in the extraordinary winter of 1860-61 many young specimens were killed in all parts of the kingdom. Since then established trees have not suffered, and it may be confidently asserted that it is hardy in all but the dampest and lowest parts of the kingdom, as a tree that grows naturally on a dry soil will always be rendered tender by being planted where it is saturated with excessive moisture at the root. As a seaside tree on all parts of our coast, where protection can be given for the first few years of its existence, it is quite unrivalled, and as it bears clipping admirably it forms a valuable shelter from the wind when planted as a hedge, just as the hedges of the European Cypress afford shelter from winter winds in the south of France. To the slender grace of the Deodar and the stately grandeur of *Araucaria imbricata*, the spreading and yet delicate growth of this green Cypress forms a delightful contrast, and in combination makes the most charming foreground to the two former Conifers, a trio of most distinct and beautiful trees. There is also a variety that assumes a pyramidal form and makes an exceedingly handsome specimen in places where no Cedar nor Deodar could thrive. In some form or other no garden should be without this tree, which, like our native Yew, accommodates itself to so many purposes, while it outlives it both in rapidity of growth and brightness of colouring. Even on the north-east coast of Yorkshire it seeds freely at a short distance from the sea, and numbers of young trees have been raised from its cones, thus showing its entire suitability to our climate. H. W.

The Scarlet-berried Elder.—A. D. Webster (*GARDEN*, Nov. 23, p. 486) does good service in calling attention to the merits of the Scarlet-berried Elder. He errs, however, at least so far as my experience goes, in saying it is not so well adapted for planting by the seaside as the native Elder. At Howick Hall, the Northumberland seat of Earl Grey, there is a plantation of this beautiful berried shrub, situated not more than a few hundred yards from the sea-coast. Indeed, so close is it to the water, that in stormy weather the spray has been known to be carried into the plantation.

Despite this, however, the trees flourish amazingly, many of them being upwards of 12 feet in height, which A. D. Webster gives as the maximum height of this subject in its natural habitat, the spread of branches being quite as much or more. The trees, moreover, produce annually an enormous crop of bright scarlet berries which are greatly admired by visitors, though considered of no more importance than the black berries of our native Elder. The berries there generally ripen early in September, several weeks before those of the common Elder, and despite the bountiful supply of food from other sources, birds of all descriptions devour them ravenously. The site, it may be interesting to add, upon which these trees thrive so luxuriantly is a swampy one, so much so, that little else of any importance will thrive there. Several rivulets run through the plantation, and these in wet seasons overflow to such an extent that the roots of the trees are frequently below water, the surface of the ground being covered to the depth of more than a foot on such occasions. No attention whatever is given the trees in the way of pruning, &c., with the result that they produce an effect rarely seen in English landscapes.—C. C.

KITCHEN GARDEN.

MAKING ASPARAGUS BED.

WILL you kindly oblige by informing me through THE GARDEN the best way to make a new Asparagus bed? Would fagots do for drainage as well as brick ends and other material? I should like to know the best time to plant two or three-year-old plants. Would lime be hurtful to Asparagus, as my beds have not cropped well since some lime was used on them?—F.

*** Very much depends upon the constitution of the surface and subsoils in Asparagus culture, and those who require information on the subject ought always to fully describe these, as well as the position of the garden, or whether high or low ground. This, "F." has neglected to do, and my replies to his queries must, therefore, partake somewhat of a conjectural character. Presumably his subsoil is of a heavy clayey nature, or otherwise there would be no necessity for any extraordinary drainage measures. When the subsoil is of a clayey nature it is much too retentive of moisture to suit Asparagus, many of the roots perishing during the winter, while not unfrequently numbers of the plants die outright. In all such cases it pays well to take extra trouble in preparing the sites, and the system of planting in raised beds is also to be commended. The orthodox width of bed is 5 feet, this holding three rows of plants, but those formed 3 feet wide, holding two rows of plants, are usually the earliest to produce shoots in the spring, as they are the most quickly affected by the sun's rays. Alleys 2 feet wide should divide the beds, these, in addition to serving as pathways, also admitting a fair amount of light and air to the plants as they advance in growth. The bed being duly marked out with four stout corner stakes and the lines cut, the next proceeding should be to throw out all the surface soil down to the clay right and left of the wide trench thus formed. At least one good spit of clay or clayey subsoil should then be dug and wheeled clean out, and if this can be at once burned so much the better, the coarsest of this ballast being good material for returning to the bottom of the trench and the finer for mixing with the surface soil. If the position is somewhat low and not particularly well, or it may be too deeply drained, it is advisable to make the bottom of the trench with a dip to the centre, along which a 2-inch or even a larger common drain should be laid, this having a good outlet. In any case a layer of coarse stones, brick ends, or clinkers may well be placed in the bottom of the trench, this being faced over with mortar rubbish or the finer stones and brick ends. As it happens, this kind of material is not generally available, and where a substitute has to be found it may consist of fagots, as suggested by "F.," or old Cabbage, Cauliflower, and Broccoli stumps and any other slowly perish-

able substances, facing over with leaves or straw manure. A foundation will now be ready for the soil. That thrown out from the trench and preserved will not be either sufficient or light enough, and with it therefore should be mixed plenty of fine mortar rubbish, burnt garden refuse, leaf soil, common sand, old potting soil, old Mushroom bed material, turf trimmings, and a moderate quantity of rotted manure, the whole being thoroughly well turned and mixed with forks. The least that can be done is to add abundance of the best light soil procurable and horse stable manure well decayed with the ordinary garden soil, in order to both increase the bulk and also to improve the nature of it. A bed well made or somewhat as I have suggested will remain in a very profitable state for many years, and there are instances I could give where the greater portion of a heavy, bad working garden has been gradually brought into capital condition by being first thus well prepared for and cropped with Asparagus.

Where it is not necessary or thought advisable to excavate the subsoil, the site for the bed may be bastard trenched, abundance of the various materials I have named being well mixed with the subsoil, and the lighter or finer substances stirred into the surface. In some instances it may be unwise to attempt improving the subsoil beyond breaking it up with digging forks, but in order to increase the depth of the surface, thus whether raised beds are formed or not, much other suitable material that I have named must be added and well stirred in. In no case, however, ought the planting to be done before the spring. The sites may well be prepared during the winter, but if the plants are lifted and replanted before they have commenced to grow and to form fresh root-fibres, or while yet the ground is in a cold wet state, the greater portion will either die or else make but a feeble start. Late in April or early in May is quite soon enough to plant Asparagus on comparatively heavy land, a fortnight earlier answering well under more favourable circumstances.

With regard to the injurious effect of lime upon Asparagus, I can only hazard an opinion, not having observed any very good or any very ill effects from its use. A light surfacing of newly slaked lime, say at the rate of a bushel to every 15 square yards of surface, applied and lightly forked into a retentive, and for several seasons in succession heavily manured soil would act beneficially rather than otherwise. Once in every five or six years would be ample, and if mortar rubbish was well mixed with the soil when the beds were formed, no fresh lime ought to be given at any time. More likely than not the mischief was done by a liberal use of salt, this substance applied to heavy soils especially acting most injuriously, not a few failures being due to its indiscriminate use.—W. I.

Early Peas.—I have read with much interest the remarks on Peas by Mr. W. Iggulden in a recent issue. At the same time I would like to point out that he is in error in classing Earliest of All with First Crop and Sangster's No. 1, &c., as the Pea is perfectly distinct in colour of plant, flower, and seed, while, so far as my observation goes, it is earlier than any other variety yet introduced. William I. is a very good Pea if a really true stock of it can be obtained, but it is very difficult to procure. I paid a high price to the raiser some years ago, and found no less than six distinct varieties in the seed supplied, some good and some good for nothing. An improved form with bluish green seed is one of the best I have yet seen. That the Pea is hardy, early, and productive, no one can deny; it is therefore necessary to every well-appointed garden. I am glad to see an old friend, Taber's Perfection, come in for its proper share of recognition. With me this is one of the very earliest of the white-seeded varieties to fill its pods, a very desirable quality. Several sorts that I have tested bloom quite as early, but the pods are longer in forming and filling, and in connection with Peas of this class, which, as a rule, have only their earliness to recommend them, a few days is of the utmost importance. It appears as if we had reached

the limit in point of earliness, as most of the so-called new varieties are but good selected stocks of the older kinds; what is needed now is to improve the size and flavour, and it is to these points that the raisers of new varieties should, in my opinion, direct their efforts.—OSWEGO.

KITCHEN GARDEN NOTES.

MUSHROOMS.

VERY few Mushrooms were obtainable from the open fields this season, a showery summer having evidently destroyed the spawn. On the other hand, the autumn appears to have been more than usually favourable to the growth of Mushrooms on beds, both in the open and under cover. With us they have been and are very plentiful and good in quality, and I believe this is the general rule. Too much fire-heat is the great bane to beds in the ordinary Mushroom house, but this season there has been no necessity whatever for turning it on or starting the fire, as the case may be. The house being quite close, the thermometer ranged from 65° to 50°, the difference in the temperatures being caused principally by the heat generated by the successional beds. In reality a temperature of 55° to 60° is quite high enough for Mushrooms, and I would prefer to keep the house 5° lower if this can be done without admitting much air. High temperatures, especially when brought about by fire-heat, have a very weakening effect upon the Mushrooms, as it causes them to become spindly, dry, and thin, and also dries up the beds unduly. To counteract this drying influence it is a common practice to have recourse to daily dampings down, the beds also being very frequently moistened with the syringe. In some instances no ill effects result from a judicious use of the syringe, this being when the heat lasts well in the bed, saturation also being avoided. When the manure happens to become cool soon after spawning, being perhaps either too moist or too dry when formed into a bed, a careless use of the syringe is liable to end in the loss of the best portion of the crop. Whole clusters of quite small Mushrooms are apt when too much moisture is applied to turn brown and soft, making no further progress. There ought to be no necessity to water a bed in order to bring up the first crop of Mushrooms; it is unwise to do it in fact, nor should it be given till the first crop has been cleared and signs of exhaustion are apparent. A mulching of soft straw litter applied when the bed is spawned, or as soon as it may be put on without unduly confining the heat, conserves both heat and moisture, and quite obviates the early use of the syringe or watering-pot. When it is found that water is really required, then enough should be given to well moisten the bed, but not sufficient to saturate it. It ought to be fairly warm, and if slightly impregnated with salt so much the better. Prior to using it remove a portion of the litter only and apply gently and evenly. When it is found that the bed is moistened to a good depth remove the damp litter, replace with a good depth of fresh drier material, and do nothing more till the successional crops appear.

GATHERING MUSHROOMS.

There is a right and a wrong way of doing this even, more depending upon the way it is done than many growers are perhaps aware of. Too often Mushrooms are cut when they ought to be either twisted, roots and all, clean out of the bed, and it is advisable also to twist off the large Mushrooms from a cluster when it is thought desirable to leave the rest to further develop. The old stumps are liable to decay badly in a few hours, and in the course of this decomposition a destructive mildew-like fungoid growth is generated, which overpowers the Mushroom spawn and literally poisons the beds all round. The removal of the old stumps not only prevents this untoward occurrence, but also breaks the strong thread-like roots, which should be very abundant in a good bed, and causes them to develop Mushrooms much more freely. A careful gatherer can twist out or break off Mushrooms without injuring those growing near them, and if he does his duty he will scoop out all old stumps as they are cleared of their produce.

SUCCESSIONAL BEDS.

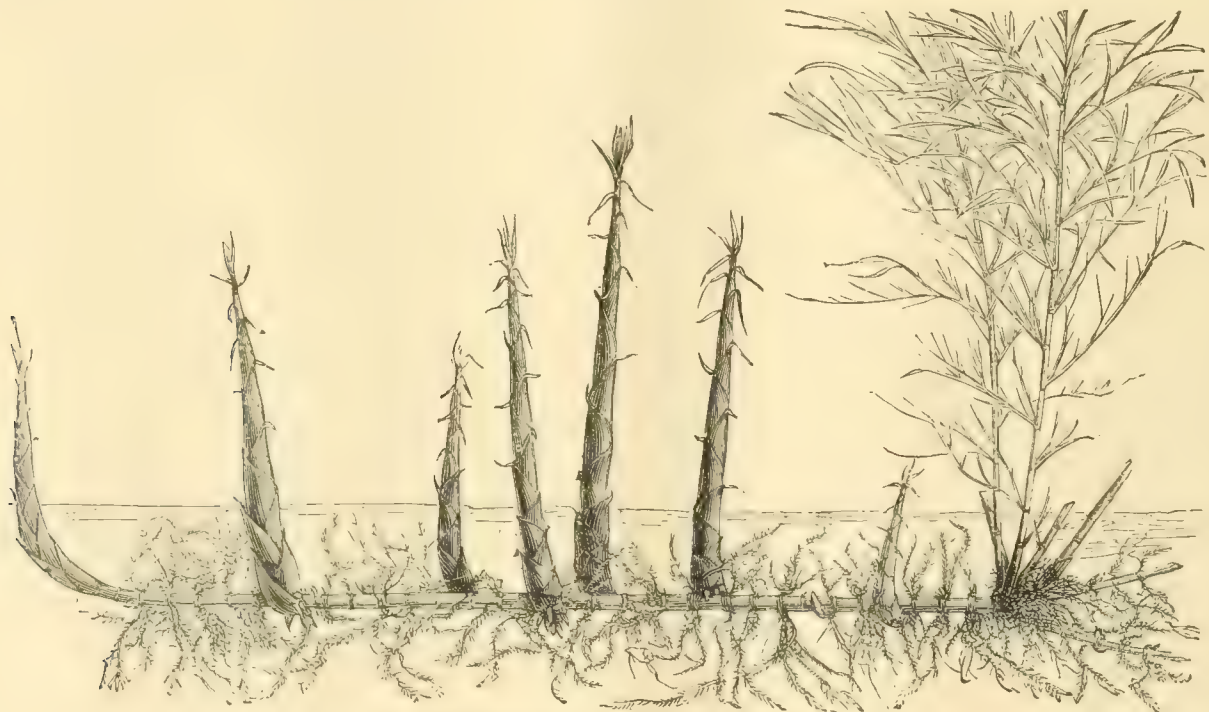
Our first bed in the house has been in good bearing order for about three weeks, the second will shortly be covered with Mushrooms, a third is just spawned, and the materials are being prepared for a fourth. Very small beds I do not believe in, at any rate, not if larger ones can be made, nor is it wise to rely exclusively on one or two extra large beds. There are so many causes that lead to failure that it is always advisable to make as many successional beds as possible, or as fast as the manure can be procured in order to keep up the requisite regular supply of Mushrooms. What I would term a fair-sized bed would be about 8 feet long and 4 feet wide, the depth varying according to circumstances and from such many good punnets of Mushrooms can be cut. The greatest pains ought always to be taken in preparing the manure, this detail being perhaps the most important and the least studied of all. Droppings that have absorbed much moisture are difficult to prepare properly, and any allowed to become very dry are also somewhat difficult of preparation. The former ought to be thrown into a conical heap to ferment rather violently, the heap being turned

gether under cover of a shed, house, or cellar will most probably cause them to attain a white heat, this leaving the best portion of the bed in a dry, musty, and useless state—it is spoilt in fact.

HOME-MADE SPAWN.

When breaking up an open-air ridge-shaped bed last July, and which had done us good service, we found all the upper half of it completely over-run with good mycelium. It was in a dry, mouldy state, few or more of the coarser thread-like roots that form just prior to Mushrooms appearing being apparent; consequently we had a large heap of good virgin spawn. This was placed in large lumps in baskets and stored in a dry, cool place. A portion of each of the beds formed in the open air and under cover was spawned with this home-made spawn, and in each instance it proved much quicker in action than the ordinary brick spawn, good as the latter undoubtedly was. Mushrooms were produced from the home-made spawn in rather less than a month from the time of spawning; whereas the brick or manufactured spawn was fully two weeks later. The latter, however, yielded the best Mushrooms as regards quality, but there was no

preparation for use. In other respects they are much superior to those obtained from Mushroom houses and warm sheds. If not relied upon to maintain a regular supply of Mushrooms, there is yet no reason why, manure being plentiful, one or more should not be formed by way of a supplement to the ordinary successional beds. It is useless, however, to form them with droppings only, but with them must be retained short stained straw to the extent of at least one-third of the bulk. In other respects the preparation is the same as in the case of the material for flat beds. The site ought to be well drained and the beds firmly put together. After they are spawned and soiled over, they should be covered with a depth of about 12 inches of strawy litter, so disposed as to effectually ward off heavy rains. If the beds require to be moistened, as they sometimes do, especially near the ridge, leave a portion of the mulching on the bed and apply tepid water gently through this, repeating the operation in a day or two, if necessary. It frequently happens the mulch next the soil becomes too wet and cold, and this, unless replaced by other drier material, may work much harm. Abundance of dry litter ought to cover the beds in frosty weather, cold



Bambusa Mitis, showing the creeping root. (See p. 509)

inside out before the centre attains a white heat. In this way much superfluous moisture can be got rid of by evaporation without all its heating power being destroyed. Manure that is dry at the outset ought to be slightly watered when the heap is formed, and if necessary each time it is turned, which process should take place every two or three days. Much the same remarks apply to droppings in a fresh, moderately moist state when thrown into a heap to ferment, the aim in each and every case being to gently get rid of noxious gases with the more violent heat without greatly impairing its subsequent heating power. When made up into a bed the droppings ought to be moderately hot, moist to the touch, and comparatively sweet to the smell. Unless they continue steadily to decay no heat will be generated, and no suitable home for Mushroom spawn be provided. Never allow a heap to become saturated by rainfall; on no account allow it to remain a week or longer without turning; and, above all, do not be in too great a hurry to form a bed with it. If the materials are hotter just inside the heap than the hand can stand when they are formed into a bed, compressing them to

appreciable difference in the size of clusters. Much good spawn is often wheeled out from sheds and houses—the beds being apparently exhausted—and from this Mushrooms spring up in all sorts of odd positions, including the soil in flower-pots in which old Mushroom bed manure had been used to cover the drainage.

OPEN-AIR BEDS.

These, as a rule, do not find much favour with gardeners, one of the principal reasons for this being the fact that moles and mice are so troublesome. The former, if not checked in some way, soon honeycomb and spoil a bed, while the mice clear off Mushrooms in a wholesale manner, the gills being the greatest luxury to them. One-half-inch mesh galvanised wire netting let a little way into the ground and disposed so as to effectually enclose the mulching over the bed, will usually keep off these intruders, and cannot be considered an expensive remedy. There is only one fault to be found with Mushrooms gathered from open-air beds, and it is this, they are frequently much too thick and require more pains to be expended in their

air being excluded from them as much as possible. Do not be in too great a hurry to break up an apparently useless bed, as these sometimes bear well in the spring, though not if allowed to become saturated by rain or snow-water. W. I.

Vegetables in Paris.—I regret to see the following in a recent number of *THE GARDEN*. I can hardly believe that a person would write on such a subject without giving more thought and attention to it than this shows:—

But at this season there is little but Potatoes of wretched quality and horribly cooked, with an occasional change between Cauliflowers and Haricots; while as for the salad, it is always alike—Endive, plain and curled, drenched in oil, forming a very inferior contrast to the bright and piquant English salad composed of Lettuces, Endive, sliced Beet, Tomatoes, Celery, and Cucumbers, flavoured with various herbs to taste, and mellowed with soft, sweet cream sauce.

At this season of the year, or any other, the worst of a dozen markets in Paris should show an excellent stock of wholesome vegetables! To one who knows what the best salad is, the idea of using cream

with it is more amusing than instructive. No doubt "D. T. F." took his hotel for Paris, and this year the small hotel-keepers there fattened on the Briton and gave him very little back.—COSMOPOLITE.

MARKET GARDEN NOTES.

THE remarkably fine weather that has prevailed for some length of time has enabled growers to get the work well advanced for the season, and being not only fine, but very mild, has given late-planted green crops an opportunity to make fine growth; consequently the markets are abundantly supplied and prices are, as a rule, low. The general rule is to clear the ground and prepare for the next crop, whether prices are high or low, as holding back with the prospect of higher prices does not always succeed, and in a season like the present, with all the fields full of green crops, it would need an unusual spell of frost to create a scarcity. The most important work of late has been winter dressing Asparagus beds. This consists in clearing away all old decayed tops and weeds, and after lightly forking up the surface, putting on a good coat of rotten manure or sea-weed, and letting it remain until the early spring, when it is covered with soil from the alleys. A dressing of salt, which not only suits the crop remarkably well, but keeps weeds from growing during the early part of the season, is usually applied at the same time. The light sandy soil of the south coast suits Asparagus remarkably well, and the plants live much longer than in stiff soils. Beetroot is now being marketed in quantity, as after the majority of summer saladings are over there is a brisk demand, and the crop this year is very good. Up to the present it has been used direct from the fields, but preparations are now being made for housing it. The moderately long varieties are in most demand, but a good many of the round Turnip-rooted kinds are grown.

BRUSSELS SPROUTS are now in splendid condition, and nowhere do they attain greater perfection than in the open fields. The plants are sown very early in spring, put out at wide distances apart on firm soil, and kept quite clean, the result being Sprouts of the largest size and hard as cricket balls. These always sell well, when the large loose ones, that are more like Cabbage sprouts, are left on hand. The Covent Garden strain is the one mostly grown by market growers.

CAULIFLOWERS of the Autumn Giant kind are still very plentiful and good, thanks to the mild season that has enabled the latest planted crops to attain full size and mature good heads. The Early Winter Protecting kinds are already forming good heads and will shortly be plentiful. Plants of the Early London and Early Dwarf Erfurt are being pricked out into cold frames or into temporary made up beds, where they can get a little protection if a sudden change of weather should come.

CABBAGES from midsummer plantings are now in fine condition for market, and are being cleared off rapidly. Putting out autumn plants for late spring crops still proceeds briskly, but a change to colder weather would necessitate the plants being left in seed beds until February.

SEAKALE and RHUBARB roots are now being lifted in quantity and placed in position for forcing, usually on the ground floor of Mushroom houses. The roots are packed closely together and kept quite dark. Those who do not go in for Mushroom culture generally, have arched compartments under the stages of houses used for forcing, and in these Rhubarb and Seakale can be successfully grown.

FRUIT TREES and BUSHES are now claiming attention. In mixed orchards where there is a top crop of standard trees at wide intervals with bush fruits between, the trees are having their centres cleared of all useless spray and the long straggling shoots shortened back. Any trees that are infested with insect pests are scraped and cleared of any parasitical growth likely to shelter the insects, and a good washing with some insecticide given. The bush fruits are then pruned and the Raspberries staked and tied, and all is ready for manuring, which is usually left for frosty weather. The planting of young trees and bushes

is going on briskly, and seldom has a more favourable season been known for the work.

HARDY FLOWERS have been plentiful this autumn, the Violet beds being especially prolific, while Chrysanthemums that are grown in large masses for bunching have been unusually fine and bright. The small-flowered kinds of pompons and a few of the hardest reflexed and Japanese sorts appear to be in greatest favour, as they withstand the wet and early frosts better than choicer kinds. These are grown largely in pots, especially for late supply, and housed at the first indication of frost. This has been a remarkable season for outdoor flowers, but the price is very low, and many who have large stocks of flowers under glass would hail a good sharp frost to cut off the outdoor supply, as there is no chance of prices improving while there is such abundance in the open air. JAMES GROOM.

Gosport.

FERNS.

W. H. GOWER.

FILMY FERNS FROM JAMAICA.

"A. J." makes some reference to these plants and asks for some advice about several species. I hope that as "A. J." has the opportunity of getting these plants from the highlands of Jamaica, he will make good use of his opportunities and get as many as he can, as but little trouble will be found in their cultivation. Large quantities of these plants are found in the island of Jamaica, and under cultivation they take but little space, and being mountain plants they for the most part do not require great heat. The chief requirement of Hymenophyllums and Trichomanes is an abundant supply of fresh and clean water, and this should be soft and free from any particles of lime. I have frequently pointed this fact out to friends having the charge of these plants. There can be little doubt that the best system of watering these plants is by condensation, and no system of watering is at all comparable to this, and should in all cases be followed out when possible; especially is this necessary in the case of those kinds with hirsute or woolly fronds. For the creeping kinds the very best material is a block of sandstone, and for the tufted kinds I prefer a mixture of loam and peat and pieces of sandstone. When the creeping kinds are first put upon the sandstone a little loam and peat should be used. These plants thrive well in places where few other things will grow, or in the case of flowering plants where no flowers will be produced, but they enjoy an abundance of light. The sun's rays must, however, never reach them. Some few species enjoy heavy shade, but such is not the case with the majority of the kinds. In the treatment of these Ferns a high temperature should be avoided, and the plants should not be allowed to become dry when they are cold. I well remember having a frameful of a few species which were frozen, and by some mischance a *Todea superba* was frozen nearly dry and it died, whilst the others when the frost was gone appeared fresher than ever, and I have proved this upon several occasions, and always found the plants that were frozen when dry suffered considerably, if they did not die entirely.

T. radicans, which "A. J." says he has, is a very widely distributed plant, and I have now before me dried specimens from Rockingham Bay, Queensland; from Central America, a very fine form collected by Blunt in Brazil, a form collected by Birschall in Venezuela; a very pretty form from the mountains in Fernando Po, West Africa; a splendid form from Ocana, in New Grenada, at 5000 feet elevation, with fronds 1 foot high and 5 inches across; a form

from the island of Samoa, which looks much like this species; and, last of all, a form from Jamaica, collected by Wilson. This last has fronds 9 inches high, very finely cut, and is nearest in form to the Ocana specimens, and very pretty. This is, no doubt, the form that "A. J." has. It is a beautifully tufted plant, with somewhat triangular fronds, three or four times divided, segments fine, and very deep green. I have found this a somewhat difficult plant to establish, but I think this has arisen through keeping it too warm, although I do not think it should be allowed to feel a much lower temperature than 60° at any time, which brings it into the stove set. *T. crispum* is a very handsome plant, but variable in the density of its fronds; it forms tufts of fronds which vary from 6 inches to 18 inches in height; these are simply pinnate, the pinnae being blunt at the ends, crisp on the margins, and fertile on the blunt points, the colour being of a beautiful sea green. *T. Bancrofti* is another pretty smaller growing species, seldom exceeding 6 inches in height, and frequently less; the fronds are once or twice divided, broadly winged to the base, and very crisp. The above are all plants which require about the temperature already quoted, but *Hymenophyllum asplenoides* may be kept in a much lower heat, which should not, however, fall below 45° in winter. *H. asplenoides* is a pendent-fronded plant, with very slender wiry stems and narrow deeply-lobed fronds of a deep green; it will succeed admirably on a block of sandstone, and thus forms a very pretty ornament. Naturally it grows upon the trunks of trees, but as they are living examples, they do not decay, as a block of wood does under cultivation, and hence I do not recommend it to be so grown. The other kinds which you say you have and do not know, I will, if you send me specimens, be pleased to name.

Adiantum bellum (J. M.).—This is the name of the frond sent for a name. The plant forms dense tufts, and from their size are very useful for cutting. It was introduced to cultivation some ten years ago or more, from the island of Bermuda, by Mr. Bull, of Chelsea, and it deserves more attention at the hands of Fern growers than has been hitherto accorded it. Its elegant little fronds are very useful for cutting and stand well. It will be found very useful for a Wardian case, as it seldom exceeds 6 inches or 7 inches in height and is frequently less.

Hart's-tongue Fern (*Scolopendrium*).—Of the numerous varieties of *Scolopendrium vulgare*, *S. v. Morgani* is one of the most desirable; it is dwarf and compact in habit, and the short, much-branched, and densely crested fronds grow only a few inches high. In a large batch of seedlings very little variation is seen. About 100 first-class certificates have been awarded by the committee of the Royal Horticultural Society for different varieties of this Fern, the above being one of the first to obtain that distinction. It would be interesting to know how many of those varieties are now cultivated and how many are really distinct. It was from 1866 to 1873 that most of these awards were made; therefore it would appear that hardy Ferns were very popular during that period. The committee was evidently not much opposed to long Latin names being given to varieties, for nearly all the varieties had enormous names. Fancy such names as *Scolopendrium vulgare marginato-undulatum* and *Scolopendrium vulgare obtusidentatum costate* having to be written on a small label! Of the Lady Fern (*Athyrium Filix-fœmina*) there are also many varieties, over 100 first-class certificates having been awarded. Of these eighteen were awarded during the year 1871.—F. H.

Todea superba.—A fine healthy plant of this has been growing for six years in a shady sheltered spot in the open air at Drinkstone. A small barrel-like

structure was built up, filled with soil, and a turf of peat placed on the top. The plant was secured to the peat turf, into which it has rooted. A glass case about the size of an ordinary handlight was placed over the plant, whilst a piece of perforated zinc let in at the top supplies what ventilation is needed. The plant is watered and syringed when necessary, and a little protection given in very severe weather, and it has grown into a nice healthy specimen.—A. H.

RENOVATION OF OLD AND FORMATION OF NEW ORCHARDS IN THE WEST MIDLANDS.*

FIVE years having passed since the Royal Horticultural Society inaugurated the first comprehensive Apple Conference, the present council has wisely decided upon testing the result of that important step by again calling together the friends of Pomona. A small minority in 1883 thought the exhibition of thousands of plates of Apples would not benefit the growers, but overlooked the fact that these exhibits would bring together not only the growers, but the consumers also. Since that time the growers' prospects have not improved, owing, they say, to the prevalence of low prices brought about by gluts and foreign competition. Buyers, on the other hand, say the supply is unevenly and irregularly distributed, and the price is too high when they purchase from the retailer. Growers say fruit culture will not pay until the land each man holds or occupies is as good as his own, or let to him on a very long lease indeed; but the present owners of the soil somehow do not seem to see the force of their argument; consequently the most important work the present gathering has before it is the framing of a scheme of open markets in which consumers can buy first hand at fair remunerative prices. This is all very well, but supposing each householder is in a position to buy Apples, say, from day to day, where are those Apples to come from? Why, we must import them. Actually, we must trust to the colonies for the produce of a tree which is indigenous to our soil, while thousands of acres of land capable of producing the finest fruit are going out of cultivation. To the Royal Horticultural Society should attach the honour of taking the initiative in working out this problem, but before the body can move, we must learn from reliable men the progress which has been made in the great fruit-growing districts. Living as I do in the county of Hereford, boasting its 27,000 acres of orcharding, where, in days gone by, thousands of tons of good fruit were lost, wasted, or converted into indifferent cider, I am able to form a pretty correct opinion of our own progress, and although less rapid than I could wish, I may say it is fairly satisfactory. Cider drinking amongst the working classes since I first knew the county has gradually decreased; consequently small parcels of the rosy Tom Putt and other useful Apples, alike good for cooking or vintage, are now stored for daily use by all the members of the grower's family. If not wanted, then they are sold to dealers, who make a profit, for conveyance to retailers, who also make another profit, and that a heavy one, from their customers. Although a slight step forward, this state of the case is not quite satisfactory, neither will it be until a powerful fruit growers' association, which should be the outcome of this conference, has established a network of markets in all provincial towns as well as in London—markets in which producers, as in all parts of Paris, can meet face to face with consumers without the aid of so many middlemen. In fruit-growing counties like Hereford, Worcester, Gloucester, Kent, Devon, and Somerset, these local markets should be well supported, as we gather from statistics that three-quarters of a million of money is sent out of England annually for Apples alone. If landowners, hitherto blind to their own interests, and legislators now take up the matter, I see no reason why growers should not go forth to the production of an article which the public must and will have, and so keep the money at home. Our climate is all that can be desired for the growth of fresh, crisp fruit, not quite so highly coloured nor so large as picked samples from the colonies, but

large enough to command top prices when well grown and packed, and properly marketed. There must be no shaking from the trees, but the cream of the crop must be hand-picked, and honestly packed as firsts and seconds. The residue or refuse, which added to the best would increase expenses and pull down prices, would then remain at home for various purposes.

Mr. Knight, the great physiologist and hybridist, who worked so much in Hereford and Salop, proved by analysis that some soils, even in these favoured counties, were preferable to others for producing Apples of dense gravity and full of saccharine matter. The late Dr. Bull, of whom Hereford should be proud, following in his wake, corroborated all that Knight had said, proving, I think satisfactorily, what past generations of shrewd men had found out for themselves, both as regards the quality of the fruit and the constituents of the soil which should be chosen for Apples, also for Pears. The conclusions at which they arrived were these: The light thin soils will not grow the best Apples; therefore, those who would plant a successful orchard must choose a deep stiff sandstone loam if they have the opportunity of doing so. All the orchard land in this county is not alike good; indeed, some is very bad, but the soil here, as in Devonshire, which produces the best fruit, owes its fertility to the plentiful supply of lime from the marl or cormstone, to its great depth and sustaining nature. Scientists who will may peruse the first part of the "Herefordshire Pomona," or they may follow Mr. Rivers through his exhaustive address delivered at the Crystal Palace, but my remarks, necessarily brief, will guide plain practical planters to the best spots for new plantations.

Having been honoured by an invitation to contribute a short paper upon the Apple, I have determined to confine myself to the West Midland orchards, in which, I am pleased to repeat, some progress has been made since the first conference was held in 1883. Draining, grubbing, grafting, and planting are still going on, but much remains to be done before we can invite inspection. Although the Apple is a long-lived tree, and perfectly hardy in all its parts save its flowers, the occupants of many of our oldest orchards, crippled by age, bad usage, and neglect, are past recovery, and should be cleared away, but the ground they occupy should not be replanted if better or equally good sites can be found for new plantations. Other orchards, again, containing thoroughly sound young trees, although of inferior sorts, after the grubber's axe has passed over the land, may be converted by grafting and resuscitated by draining and top-dressing. Some of our oldest orchards, which date back to the Wars of the Roses, contain a great number of wildings or kernel fruits of no value to the owners even, while younger plantations are crowded with healthy, vigorous trees, at one time supposed to be Norman, but now proved to be English seedlings, no better than the stocks used in large nurseries. Upon the first I would not spend money, as they are too old for grafting, too old to pay rent, too old for anything save loss and disappointment. The second I would behead and regraft with choice varieties which have been proved in the locality. Confining myself to old orchards now existing or languishing in the western counties, I may close my remarks upon this head by saying: Cut down all useless trees, thin out the heads of those worth keeping; cleanse the branches and stems from Moss and insects; regraft sound, healthy trees with good market sorts, and see that the drainage is satisfactory. I will not presume to inform practical men who may deign to read my remarks that sound, deep, naturally-drained orchards are better than others which require artificial treatment, and that a certain quantity of moisture in the soil is absolutely necessary, but on no account must it be stagnant. All gardeners are well acquainted with the fact that soils too dry produce fruit that is small and mealy, whilst water-logged soils are several degrees colder than others of similar texture that are free from this root-chilling poison. They know, moreover, that warm summer rains run off the surface, whilst the sun acts very

slowly in raising the temperature of the wet sub-soil, in which deeply-seated roots soon perish, and those nearest the surface are little better off, as they do not commence fresh action much before mid-summer. Drainage, all good cultivators assert, is the first essential in the preparation of new orchards or in the renovation of old ones, and why? Well, simply because the removal of stagnant, if not putrid water and the introduction of fresh air raise the temperature of the soil from three to five degrees, a condition which not infrequently forms the dividing line between success and failure.

So far my remarks have been confined to old orchards, planted haphazard upon all sorts and conditions of badly prepared land, as well as in unfavourable situations. The best of these may be retained for a time, upon the principle that half a loaf is better than no bread; but the majority of them must go, and young ones must spring up before we can hope to realise an average of £10 an acre, or compete with the colonists in our own markets. Some years, as many present know, have passed since horticulturists commenced agitating, but the good seed which was intended to put three-quarters of a million of money into the British farmers' pocket for a long time fell upon stony ground. Some recently has taken root, and far-seeing landowners are now putting our theory into practice by offering land upon conditions that will induce capitalists to invest in fruit culture precisely as they do in coal and iron. In this and the adjoining counties good landlords are raising and distributing to their tenantry Apple and Pear trees by thousands. These mostly are standards on free stocks, the only class of tree suited to pasture and arable land. Nurserymen, again, who have brought propagation up to a fine art, are producing standards and dwarfs by the million, and these surely in a few years should make their mark. Meantime, a complete network of markets, I insist, must be created throughout the kingdom.

From the preceding remarks those who run may gather the fact that I do not set much value on the thousands of acres of ragged, decrepit, Moss and Lichen-laden trees, but until the new plantations come into bearing we must make the best of them. Then, with Gladstonian vigour, we may hew them down, and let the Apple-sick sites go back to Hops, corn, and pasture. Upon this principle change of site may be worked precisely as gardeners now manage their Strawberry plantations, and with similar results. And I venture to say, one acre of modern orcharding will beat ten of the old—at least, in the west midland counties.

Already I am afraid my paper is too long, but having warned to my subject, I should now like to say a few words upon the formation of a modern orchard. I might divide them into several parts, such as aspect, site, soil, preparation, planting, the best style of tree, manuring, mulching, pruning and protection, gathering, storing, packing and marketing, but, my time being limited, my words must be brief and general.

Aspect and site being so closely dovetailed together, these I will not attempt to separate. All gardeners, I believe, are pretty well agreed that a south aspect is best, as trees in this position ripen their wood well, and produce fruit of the highest colour and quality. The Apple, however, being perfectly hardy, the quality of the soil must not be lost sight of; neither must altitude and shelter from north and east winds be repudiated. Under these circumstances, the soil being deep sandstone loam resting on marl, and naturally drained, I should not object to a point east, or any other aspect round with the sun to full west. The latter, however, I should prefer, and for these reasons: although western gales in this part of the country do some damage, it is well known that if plants are exposed to the first rays of the morning sun when they are frozen they will suffer, but if they are shaded until they are gradually thawed by the rising temperature of the air, they will stand a few degrees with impunity. An orchard open to the east or south-east is almost sure to suffer after an attack of spring frost when in full flower or setting, whereas one with a western aspect, which does not

* Paper read by Mr. Coleman, Eastnor Castle Gardens, at the Apple and Pear Conference at Chiswick, October 17, 1888.

receive the sun until the temperature has risen and dispelled the frost, often sets and carries full crops to maturity. Hardly a year passes in which the gardener does not find early crops of all kinds are safer and finer upon west borders than upon others; therefore I think few will deny that his experience is of great value to the planter. The site, I may say, should be above the line of fog, and it should not be too near or on a level with water. If naturally drained, much time and expense will be saved, otherwise this operation must be carried out as a preliminary preparation. This may be performed in two ways, viz., by trenching two spits deep for pyramids or bushes, or by taking out large circular stations on Grass or arable land for standards. If trenching is decided upon, the bottom spit, if heavy and inferior, should not be brought to the surface, but it may be ameliorated by the addition of burnt clay from the drains, by road scrapings, or any other fresh friable material short of rich animal manure. This, unless the staple be very poor, I would keep back for use as a mulch after the trees are planted. On all ordinary loams young trees grow fast enough at first, but the time comes when they must be fed, otherwise they cannot be expected to yield year after year fruit of the finest quality.

In the preparation of stations for standards on Grass or tillage ground, I would throw off the top spit 9 feet in diameter, break up the bottom, and throw out clay or bad material to be carted away or burned. If cold and at all unfavourable to root growth, exposure of the soil for a few weeks or months would greatly improve its quality. Otherwise, after correcting the bottom spit, that thrown off first, turf included, with anything in the way of road scrapings or old lime rubble added, may be chopped in until the hole is quite full, or a little above the general ground level. A stout stake should then be driven down to the solid bottom as a support for the tree when planted.

Planting may be performed at any time from the beginning of October up to the end of April. Autumn, however, is best, as the roots at once take to the soil, and the trees make a fair growth the following summer. October and November undoubtedly are the best months, that is, provided the land is in perfect condition and the weather favourable; but so important is getting the trees into the ground when it is fairly warm and dry, that I would rather defer planting until April than risk placing the roots in a pasty medium. Trees of home growth—that is, from one's own nursery, which every fruit grower should have—may be planted much earlier than others brought in direct from a distance. All trees should be carefully divested of faulty or injured roots by a clean cut with a sharp knife; they should never be allowed to become dry, and each root and fibre should be spread out in a horizontal position, lightly covered, and watered home.

In the arrangement of trees, the rows, if convenient, should run from north to south or north-east to south-west, as three out of the four sides then receive an equal share of sun and light. The old fault of planting them too close should be carefully guarded against, as good fruit cannot be expected when the heads grow into each other and the roots are constantly shaded. Standards of upright-growing varieties may be placed 30 feet apart each way, whilst 40 feet will not be found too much for spreading trees like Flanders Pippin and Blenheim Orange. Trees, again, of one variety, or a similar habit of growth, and which ripen their fruit at the same time, should be kept together, or in rows, alternating with others of a spreading or upright character. By observing this rule at the outset the general and orderly appearance of the nursery will be greatly improved, and much time and labour will be saved when gathering the fruit. The same rule applies also to pyramids and bushes, which, by the way, should have plenty of room for extension in every direction, as no extensive planter can afford to prune close home upon villa garden principles, especially when the best of the fruit is cut away by the process. Thinning the shoots and branches an-

nually, of course, is necessary, but beyond this and maintaining the balance by tipping a gross shoot, I should let each tree go. The distance apart will depend upon the kind of stock, as trees on the French Paradise may be grown for years at distances of 4 feet to 6 feet apart each way. On the English Paradise or Doucin, which I like best, they grow stronger; consequently more room is required. Twelve feet from row to row, and 6 feet from tree to tree, will give them room for a long time, but eventually it may be necessary to transplant every alternate tree, when those left will stand equi-distant, viz., 12 feet from stem to stem. Some I know plant much closer, but when it is borne in mind that a well-developed head turns off not only more, but better fruit than a small one, abundance of room is a decided advantage. Moreover, plenty of space favours a spreading growth, which keeps the heads nearer the ground, safe from wind and easy of access for pruning, manipulating, and gathering. When standards are planted they should be well secured to the stakes previously driven, but in a way that will allow them to settle with the subsiding soil, otherwise the roots will drag and strangle. If on pasture land, they should be well protected from sheep and cattle, and the orchard itself must be fenced and wired round to keep out hares and rabbits.

VARIETIES.—The only point I must now venture to touch upon is the selection of varieties for special soils, situations, and purposes. A few years ago we planted very early sorts for coming in before the American importations, but this is now over, as the quick run across, and summers hotter than our own combined, enable our friends to be abreast of us at the beginning, as for a long time they have been at the end of the season. Our only way out of this dilemma, as I have before observed, is high cultivation. We have a climate which ripens fruit crisp, tender, and juicy, not quite so highly coloured, perhaps, but in my opinion superior to the general run of American. We have the soil, which, thanks to yearly tenancies, nobody cares to till, and we have the ability. All we want is quality, then it matters little whether we market early or late, always provided we confine ourselves to a few of the best sorts which do well in the locality. This hackneyed phrase for a long time puzzled would-be growers, who said, Where must we look for anything better than a Suffield or a Blenheim? Well, I am not sure that anyone requires anything better, but if they do, they must just look into any of the great well-known nurseries about the end of September, and there they will find thousands of trees of all the leading kinds carrying fruit of the highest quality. Some of these on dwarfing stocks—just the thing for the garden or home nursery—will be loaded with large, bright fruit, of which at the present time we ought to have one hundred thousand tons ready for storing. They will find also standards on free stocks specially prepared for planting on pasture and arable land. From these they may select scores or hundreds of trees of one sort, and so on of another, but on no account must they select one or two trees each of a hundred sorts, as this plurality is a great drawback in commercial culture. Very early sorts generally go direct from the trees to the market; medium and late sorts must be stored in dark, cool fruit-rooms or dry cellars, and this accommodation, or the want of it, must be the guide in making a selection.

Gathering, storing and marketing hitherto in the western counties have not received proper attention; but a great improvement is now taking place, and the day, I hope, is not far distant when ruthlessly shaking the boughs will be looked upon as a barbarous custom of the past. Apples worth growing are worth hand-picking, and when hand-picked they are worth sizing—that is, dividing into two classes before they are stored or sent to market. The best only should be sent away; seconds may be retained for home use, or consumption in the neighbourhood. There should be no mixing of sorts, or good and bad together, but one uniform quality should prevail. Buyers in this part of the country still stick to their pots. I do not mean

earthenware, but wicker, which hold from five to seven pecks each; but invariably they sell by weight, and this, I think, is the fairest way, as anyone can compute the value of a ton of Apples. Before Apples are hand-picked for storing they should be ripe, that is to say, the kernels should be brown and somewhat loose in their cells. The fruit, moreover, should be perfectly dry and free from spot or blemish, as one black sheep soon demoralises the flock. Once put away, the less they are turned or handled the better, especially when sweating or during frosty weather.

If the store-room is fitted with lath shelves, the choice varieties should be placed one, or at most two layers thick, but late sorts grown in great quantities may be laid upon dry floors in greater bulk. They may be stored also in dry flour-barrels, which should be labelled and put away in a low even temperature for the winter. Good aristocratic store-rooms are rather expensive; but a cutting driven into a dry bank and covered with thatch, with double doors at one end, will make a store equal to the best and most elaborate in the kingdom. Resinous wood should never be used in the manufacture of shelves. Neither should hay nor straw be admitted within the walls, as all these materials impart a disagreeable flavour. Dry Fern, on the other hand, may be used for covering purposes, but very little of this will suffice where frost and, more especially, heat-proof stores are properly constructed.

SOCIETIES AND EXHIBITIONS.

THE CHRYSANTHEMUM CENTENARY SHOW AT GHENT.

In spite of all predictions to the contrary, the grand International Centenary Show at Ghent has been an unqualified success. Upon entering the large concert hall belonging to the Casino on the first morning of the show the English visitors could only look at each other in mute surprise at the unexpected display that was presented to their view. The arrangements to our idea were so novel, that in the first place a close inspection of the hall was necessary to become even slightly acquainted with the details. No long lines of tables running from end to end of the building were to be seen. No rigidly trained standards, flats, or distorted objects known as pyramids were in the building, but in their place were groups of many designs filled with plants, mostly grown in bush form or as natural standards without the usual accompaniment of the umbrella-shaped wire, which always at an English show gives us the idea of those mysterious imitations of the vegetable kingdom called trees, in which we used to delight as children when presented with a box of toys. The ground plan of the show in the hall was capitally designed. The groups were arranged in circles, ovals, semi-circles, and segments, all fitting in with such perfection, that the paths between the various exhibits were in the form of winding serpentine alleys gracefully curving in all directions. Around the walls of the building large specimens of Palms and foliage plants were arranged, and in front of these some gigantic groups were staged. In the centre of the hall were traced some smaller ones, but throughout the show the winding paths were all clearly defined by an edging of turf about a foot in width. Altogether the display was a striking contrast to the usual run of English shows. Large Palms were placed at intervals throughout the building, their graceful branches lending a pretty effect to the groups immediately beneath. In all there were twenty-nine large groups of flowering Chrysanthemums, to say nothing about small collections also occupying a portion of the space. Here and there were to be seen handsome arrangements consisting of Palms, Camellias, Conifers, and other kindred subjects, the verdant foliage of which lent an indescribable charm to the display when brought, as it was in every case, into juxtaposition with some broad sheet of bright-coloured Chrysanthemums.

Before the jury were called upon to perform their duties they were required to sign the *livre d'or*

of the society. The book, a handsome work, dating back to 1814, contains the names of many horticultural celebrities who have assisted at the exhibitions of the society. Among the distinguished names we noted Queen Victoria and Prince Albert's signatures in 1843. On the occasion of this show, as is the custom, a new design was specially prepared by the artist employed by the society for the page on which the members of the jury were to sign their names. It was a beautiful piece of work richly carried out on a deep blue ground, with powderings of the Kiku or Chrysanthemum crest in light blue. At the top left-hand corner was the drawing of a Japanese fan, upon which an allegorical figure of Japan offering to Europa a plant of the Chrysanthemum was drawn, while in a boat rowed by two native Japanese oarsmen was a large collection of Chrysanthemums in flower. The crest of the late Shogunate, the Tokugawa family, unmistakable by its three Mallow leaves, with the points turned inwards, surrounded by a circle, was also figured, and along the left-hand side of the page blooms of the Japanese and incurved types with foliage adorned the work and added fresh lustre to the artist's skill. The signatures of the twenty members of the jury were enclosed on two sides by the entire design.

The duties of the jury were somewhat arduous, and in many cases close inspection was necessary before the awards could be finally determined upon. Nearly eighty exhibitors competed for the prizes offered, and the number of distinct entries amounted to 259. The schedule contained in the aggregate 123 classes, and they were mostly well filled.

Without making comparisons, it may be permissible to say that, so far as extent and general effect are concerned, nothing has yet been seen in England like the display of groups of plants in plants at the Ghent Centenary Show. Cut blooms were few and far between, and of course, from an English exhibitor's point of view, were below the ordinary standard. These were all staged together in a large ball-room upstairs. The names of the principal prize-winners will, in many cases, not be familiar to the readers of THE GARDEN, although they comprise local celebrities of great repute. M. O. de Meulenaere exhibited in the centre of the hall a splendid oval-shaped group of large-flowered varieties, for which he received the gold medal of the society. In this exhibit all the incurved were finely developed and the reflexed and Japanese sorts well cultivated. The best of M. Meulenaere's flowers were Barbara, King of Crimsons, Sunflower, Miss M. A. Haggas, Middle Temple (grand), Princess of Wales, Sabine, Mr. Garnar (good), Sarah Owen, Mrs. Rundle, Mrs. Dixon, Edwin Molyneux, Baron Beust, Ethel, Harman Payne (Lacroix), Mme. Clemence Audiguier. The last named plant had fewer blooms than some of the others, there being about thirty in all on the plant. Of these we counted seven that might have been cut and exhibited in any ordinary class for cut blooms at an English exhibition, being splendid specimens. In all there were 125 plants in M. Meulenaere's group; it was 16 yards long and 6 yards in width across the centre of the oval. It is needless to add that it was much admired by the visitors. The second prize in the same class was also a gold medal, and was awarded to M. Alexis Callier, who staged his group opposite to his opponent's, but in a different style, choosing a large semi-circular form. He had a very choice display, but the flowers bore evidence of less capable cultivation than those of his rival. Japanese, incurved, reflexed, and Anemones were all fairly represented in this group, amongst the finest varieties being Le Tonkin, Mme. Chrysanthe, l'Adorable, Fantaisie, Le Reveil, Nuit d'Hiver, Mlle. Melanie Fabre, Wm. Robinson, Eve, Prince of Wales, Lord Alcester, Golden Christine, Golden Empress, Guernsey Nugget, Emily Dale, Pink Christine, Marguerite Solleville, Nelson, Timbale d'Argent, and Lady Margaret. Pompons were not exhibited in either of these lots.

Some pretty groups of medium-sized flowers were sent by the Epernay Horticultural Society, and as an idea of their number we may add that these

plants filled three railway trucks; but nearly all the French exhibits were behind the Belgian ones in quality from an exhibition point of view.

The collections of pot plants of Chrysanthemums staged by the Louis van Houtte establishment were of first merit. Four splendid groups, occupying a large portion of one side of the spacious concert hall, were set up by this firm. Many nice flowers were comprised in the collection, the best being Barbara, Duchess of Manchester, Lord Derby, Cullingfordi, Cocardeau, Mme. John Laing, Fée Rageuse, M. Freeman, M. Cochet, Amarantina, La Triomphante, Beauté des Jardins, M. Frederic Marrou, Gloriosum, Source Japonaise, and Edouard Audiguier.

The Comtesse de Kerchove also sent a charming collection of finely-grown plants, very closely flowered and compactly staged. M. Remens produced another arranged in semi-circular form, in which all the principal varieties were well represented. A very handsome circular group, or, more properly speaking, cone-shaped group, was staged by M. Rigouts, comprising all the modern Japanese and a few of the well-known incurved varieties, but the effect was marred by the names of the varieties being written on tickets of rather too large a size. The awards in the group classes were briefly as follows: Gold medals to M. Albert Rigouts, the Horticultural Society of Epernay, M. Louis van Houtte, M. Vriesere-Remens, M. A. L. Rosseel, M. O. de Meulenaere, M. A. de Beer-Dumoulin, M. A. Callier, and M. G. de Saegher. Silver-gilt medals to the Epernay Horticultural Society, M. Leopold de Bock, Dubois et Cie, the Comtesse de Kerchove de Denterghem, M. Fierens, M. O. de Meulenaere, and others.

Cut blooms and miscellaneous objects were exhibited in the ball-room upstairs. M. O. de Meulenaere had a pretty collection of seedlings not yet in commerce raised from seed imported from Japan. Chief among these were Clara, a Japanese flower with broad petals, tubular half the length, colour white, slightly tinted sulphur. Tirin, another Japanese that was much admired. It is a compact reflexing flower, straw-yellow, with a cinnamon centre, petals rather short, but very full and pointed. W. R. J. Hamill, a very long-petalled Japanese kind, salmon-red with light reverse, broad, flat florets, much twisted. This looks like making a good flower for show. Lizzy, lemon-yellow Japanese, petals lighter on the reverse, tips notched. M. Louis Lacroix also showed a lot of new seedlings to be distributed next year, for which he was awarded a second class silver medal, but the flowers were not presented in such a condition as to enable a proper opinion to be formed of their merits. The same exhibitor also received a first-class silver medal for a general collection of Chrysanthemums shown in bottles in bunches of threes and fours, with the names written on wooden tallies, the strings being too short in most cases, and this method we strongly advise our French friends to discontinue, for it is by no means an agreeable or convenient one.

M. de Reydellet showed a collection of unnamed seedlings which were only distinguishable by numbers. No. 919 looks like a promising flower. It has thin thread-like florets and a bright golden reverse, but the colour is a rather indifferent crimson. No. 920 is a tubular petalled flower of a colour never yet obtained in Chrysanthemums, and we may venture to hope never will again. It is one of the Gloire Rayonnante species, and is of a dirty, undecided, raw umber colour.

Messrs. Mercier had a comprehensive collection, but Wilhelmine is beyond doubt our old favourite, Mrs. Shipman. In the same exhibit Commandant Testar struck us as being a pretty large Anemone of a deep shade of mauve. Souvenir de Mme. Bredy, an incurved, round as a ball, of a deep purple-amaranth, looks like a good flower. Another incurved called John Crossfield, but which was unknown to us as shown, looked like a nice bloom if properly grown. It was very deep rosy-purple with yellow shaded centre, having broad grooved cupped petals, the whole flower being very globular. M. Duboul was also considered a good

thing by some, but the incurving petals were quite flat, and therefore not promising as a purely florist's type of an incurved show flower.

M. O. de Meulenaere occupied the premier position in the class for 300 cut blooms of different varieties, the jury unanimously awarding him the gold medal, the second prize in the same class being carried off by the French nursery firm of Mercier et fils. M. Fred Burvenich père showed 150 cut flowers of all kinds, distinct varieties, receiving second prize in that class.

Bouquets, crowns, vases of Chrysanthemums, table decorations, and other similar exhibits received their fair amount of representation, and there was severe competition in several cases. Messrs. van H. Ken, H. Schmitz, A. van der Heede, Leopold de Bock, Mlle. Marie de Bock, Mlle. Marie de Vriesere were the leading competitors in these classes. M. Verleysen-Nyssens, of Brussels, contributed a fine collection of drawings of Japanese Chrysanthemums and pottery, porcelain screens, and other objects of Chinese and Japanese art. Pottery and bronzes decorated with Chrysanthemums were also shown by M. van Crombrughe-Coryn and M. Dangotte fils. Mr. Mountain, 211, Clapham Road, exhibited a photograph of the Chiswick centenary show.

Apart from Chrysanthemums, there were some interesting lots of Palms, shrubs, Conifers, Oranges, Camellias in good condition, which formed an attractive feature of the show, and such objects were not confined either to one hall or the other. The leading exhibits of this sort were sent by Messrs. de Smet, Spae, Menten, Wallem, Aug. van Geert, L. van Houtte, Fierens, Pynaert van Geert, Fred. Burvenich, Adolphe Rosseel, the Comtesse de Kerchove, and many other leading horticulturists and members of the Ghent Society.

There were a large number of exhibitors *hors concours*, twenty-four awards being made of this description. Two handsome works of art were specially offered by the society for those exhibitors who contributed most to the beauty of the show. The first of these, a large porcelain vase beautifully decorated with flowers of Chrysanthemums, was deservedly awarded to M. O. de Meulenaere as the amateur who occupied that proud position, he having staged exhibits in nine classes altogether. The winner of the prix d'honneur in the nurserymen's category was the Louis van Houtte establishment, to whom was awarded a charming piece of bronze, representing a fisherman casting a net, a very important contribution from this house being a fine collection of shrubs indigenous to China and Japan.

Miscellaneous works of art were shown in rooms at each end of the large ball-room, and in the collection of oil paintings of Chrysanthemums were some striking pictures by Mr. Bellis, who contributed five in all. Other talented artists produced equally meritorious works, among the most interesting being those by Mme. Amerlinck-Claes, Mlle. Alice Walton, Mlle. Gabrielle Stas, and Mlle. J. Vandermeersch.

In the Japanese art department, screens, paintings and drawings were exhibited in great variety. One set comprised twenty-two varieties of Japanese Chrysanthemums on card and painted in water colours with great accuracy. It was curious to note that almost all of the flowers depicted were of the Edwin Molyneux type, having yellow backed florets with crimson inside; but each flower differed from the others in form of petal or general outline of the bloom. The remainder of the collection represented Chrysanthemums of the same type, but mostly white coloured ones. There was also a collection on rice paper, to which the foregoing observations are also applicable. English exhibitors were not wanting, although they were few in number. Messrs. John Laing and Sons, of Forest Hill, had a capital display of about 30 feet in length by 4 feet in width. There was a large number of exhibition and decorative Chrysanthemums of all sections. Cyclamens also formed a prominent feature in the exhibit, and an excellent collection of Apples added novelty to the display,

among the principal varieties being the well-known Ribston Pippin, Mère de Ménage, and Peasgood's Nonsuch. The Forest Hill Chrysanthemums excited very much admiration, and large numbers of visitors were crowding around the tables to get a glimpse of the famous English-grown Chrysanthemums, which were really meritorious by reason of their excellence and finish. Altogether there were eight show boards of twelve, a large number of blooms shown in the Continental way, namely, in bottles, and in rear of the boards were bunches of the principal large Anemone and pompon varieties. The lot was very effectively arranged, and amongst the finest and most admired flowers in the collection were Mme. Baco, Mme. J. Laing, Sunflower, M. Bernard, Anatole Cordonnier, Edwin Molyneux, Stanstead White, Stanstead Surprise, Mrs. F. Thompson, Mrs. Alpheus Hardy, D. B. Chapman, Sarah Owen, and others. For the general excellency of the entire group the jury made a special award *hors concours* to Messrs. Laing and Son of the society's gold medal of the value of £4, and for the Chrysanthemums they also received a silver-gilt medal.

Messrs. Pitcher and Manda set up a neat box of six medium-sized blooms of their novelty Mrs. Alpheus Hardy, for which a silver-gilt medal was given.

Mr. Edwin Molyneux, gardener to Mr. W. H. Myers, of Swanmore Park Gardens, staged some immensely solid blooms of the popular variety Etoile de Lyon, which were much more highly coloured than many seen this season at the metropolitan shows. A first-class silver medal was awarded to Mr. Molyneux for his blooms.

Mr. C. Harman Payne, foreign secretary of the National Chrysanthemum Society, who was attending the show in the triple capacity of member of the jury, delegate from the National Society and exhibitor, was awarded the first-class medal for his collection of coloured engravings of Chrysanthemums, some Japanese drawings of the flower on silk, and an Oriental fan with blue Chrysanthemums painted on it.

It may be useful to mention that the governing body of the Ghent Society took time by the forelock in this centenary business, a fact of the greatest significance. The schedule was issued nearly twelve months ago, and thus intending exhibitors were able to get ready for the specially interesting event in time, and this precaution and forethought on the part of the society contributed really to the success of the exhibition. To show the way in which the society do the work in hand, it will suffice to say that a sliding scale of admission fees has been adopted, as the exhibition is to remain open for a week. The price for the first two days was 3 francs, the second two days 2 francs, then two days at 1 franc, the sixth at 50 centimes, and the closing day, which will be Sunday next, only 20 centimes will be charged.

On the afternoon of the day when the judging was done a banquet was given to the members of the jury. It well deserved the title of International, for there were gentlemen of English, Scotch, French and Belgian nationalities among its members. The Count Kerchov de Denterghem occupied the chair, and after proposing the health of King Leopold II. in felicitous terms and making some complimentary allusions to the labours of Mr. Payne in the Chrysanthemum cause, and to the pleasure they all experienced at his presence as delegate from the National Chrysanthemum Society, the Count presented to Mr. Payne a gold medal of the Ghent Society in recognition of the official co-operation by the National Chrysanthemum Society with them in this centenary festival.

A representative from the Epernay Horticultural Society, the Baron Chandon de Briailles, was also the recipient, on behalf of his society, of a similar presentation.

Mr. Harman Payne replied, as also did the Baron de Chandon, expressing great pleasure at the honour done to their respective societies.

NATIONAL CHRYSANTHEMUM SOCIETY'S EXHIBITION, HULL.

NOVEMBER 21.

THE second exhibition of this society in the provinces was held in connection with the Hull and East Riding Chrysanthemum Society in that town, and was decidedly a success, the competition being good and the exhibits of quite average quality. Over 2000 blooms were staged in all classes, all sections being represented. In the leading class for forty-eight blooms there were but four competitors for the handsome challenge cup and £15 in cash. This was to be regretted, as the conditions are the most easy to comply with in a large class of any we have seen. No doubt the late date at which the show was held, and it being rather an early season prevented others from competing. The first prize stand from Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, made up in quality what was lacking in quantity, the exhibit being of the highest order of merit. Mr. D. Heaney, gardener to Mr. H. G. Schintz, Mossley Hill, Liverpool, the winner of the cup last year, was this time placed second, with a lot in which the Japanese were rather weak, being uneven in size. Etoile de Lyon was represented in its true character, a deep rosy lilac, very different from the washy appearance it presented in the first prize stand.

For twenty-four, substantial prizes were provided, as many as five valuable silver cups being offered in addition to good money prizes. Mr. Blair also won one of these (that presented by the Mayor of Hull). Large Anemone varieties were capitally represented. Special attractions were made for a good display of these by Mr. C. Jukes, who offered a silver cup, for which six competitors came forward. The first prize stand from F. W. Jameson, Hessele, Hull, contained splendid flowers.

Pompons were staged, as they ought to be, of medium size only, so as to retain the true character of each variety, which is not always the case when the plants are subjected to high treatment to obtain mere size. Single varieties were neatly staged; the blooms were of fair quality, not too large. Mrs. G. Rundle family of small-flowered kinds of incurved was encouraged by the offering here of prizes, the blooms of this variety and its sports, Mrs. Dixon and George Glenny, to be shown in bunches of three blooms to each bunch. This method afforded an opportunity of making a change from the stereotyped style now so common at all exhibitions. In this case there was a decided tendency to cut the blooms with too short a stalk, the consequence being that the blooms were too near the board. At this show classes are provided for scented varieties, which appear to be much appreciated, judging from the number of entries—seven. Progne appears to be the variety mostly grown for this purpose, although the single variety Mrs. Langtry was awarded the first prize. Owing to the room being cold in which the blooms were staged, they had lost their scent in the case of Progne. Here is another case of an improvement in the staging being needed. If instead of placing twelve blooms, each one not more than from 2 inches to 3 inches in diameter on a stand 2 feet long and 1 foot 6 inches wide, where they are completely lost, and are much worse when no foliage is employed with them, they had been put up in bunches of three or four blooms with the foliage, a pretty feature would have been obtained. Plants were numerous exhibited.

A full prize list is given in our advertising columns.

NATIONAL CHRYSANTHEMUM.

A SMALL, but interesting meeting of the above society was held at the Royal Aquarium, Westminster, on Wednesday last.

A FIRST-CLASS CERTIFICATE was given to the following:—

VOLUNTEER.—This is a type of Japanese flower we admire. It has the ruggedness characteristic of its section, the narrow florets interlacing and irregularly disposed, and forming a full, dense, but not formal bloom of a lovely shade of pink. Such

a style of flower as this should be encouraged rather than the big, bulky blooms unfortunately considered the acme of perfection. From Mr. Becket, Aldenham House Gardens, Elstree.

Mr. Owen, of Maidenhead, exhibited an excellent collection of novelties. E. C. Jukes is a good type of an Anemone-flowered variety, the centre yellow and the guard florets rich red; John Lambert is a distinct improvement on Emily Dale, and described as a sport from Lord Alcester. The flower, as far as we could see in the wretched light, is of a bronzy-buff tint with the petal of Lord Alcester. It would be unsafe to show Emily Dale or Lord Alcester in the same stand as this for distinct blooms, but it will possibly supplant the first named, as it is undoubtedly an improvement. W. W. Coules is a beautiful Japanese flower, not unduly large, but of a similar colour to the orange-red Val d'Andorre; the florets, however, are broader and more massive; it is a promising kind. Mrs. Charles Pratt is a good white Anemone-flowered variety; it might be called a Japanese Anemone by some, but there are many varieties intermediate between the two sections, so that it is hard to determine their proper class. Condor, a white Japanese variety, loose and with broad petals, was exhibited; also Ada Spaulding, the new American incurved variety, and a kind of single flower called The Sweep, from the resemblance of its flower to a sweep's brush; it is not pretty or useful. Sunset is a good Japanese variety, orange-red in colour.

Messrs. H. Cannell and Sons, Swanley, exhibited flowers of their single Chinese Primulas, and blooms of the Japanese Anemone-flowered Caesar, a well-shaped variety, the centre yellow, and the guard florets rich purple-red. Mr. C. Deane, gardener to the Earl of Essex, Cassiobury Park, showed blooms of Etoile de Lyon, that would more than have covered an ordinary dishplate, fuller than we have ever seen them before. Usually this variety is of a flattish shape. We were pleased to see that no award was given for culture. The same exhibitor had the Japanese variety George Maclure, shown last year; the flowers are of a rich lake-crimson colour, the reverse of the florets bronzy yellow. Mr. W. G. P. Clarke, Hitchin, showed a variety called Miss Mary Ransom. We should not like to stage it in the same stand as the variety Mr. H. Cannell. From Messrs. J. Carter and Co., High Holborn, came Holborn Nugget, a variety introduced from Japan in 1888. Both in form and colour the flower is not unlike that of the Japanese Ralph Brocklebank. The same firm also had a kind named Mabel Carter, a flower of average size, and with white, narrow, thread-like florets. It is interesting. Mr. Becket exhibited John Thorpe, a loose, flimsy Japanese flower, but remarkable for its rich crimson colour. It is worthy of culture for its colour alone. Singlerley belongs to the same section; it forms a round ball, the florets very short and dense, but prettily coloured with pink. Mrs. Sunnett, a pink Japanese, and Charles Sharman, deep red, also a Japanese variety, are both useful.

A plant of *Lælia Tresederiana*, described as a hybrid between *L. Loddigesi* and *L. crispa*, came from Messrs. Heath and Son, Cheltenham. It has no merit.

Labelling plants.—A double system of identifying plants in a nursery may be well for the nurseryman, but it is a nuisance to his customers when he sends them out with numbers only, as some of the Continental nurserymen do!

WE learn of the death of Mr. John Simpson Tyerman at Penlee, Tregony, Cornwall, on Nov. 24, at the age of 58. He was formerly curator of the Botanic Gardens, Liverpool.

Death of Henry Curtis.—We regret to hear of the death of Mr. Henry Curtis, head of the firm of Curtis, Sanford, and Co., Devon Rosery, Torquay, and which occurred suddenly on Nov. 26, in his 70th year. The deceased nurseryman was grandson of William Curtis, author and originator of the *Botanical Magazine* and "*Flora Londinensis*," and is known as one of our most successful Rose growers. He was author of the "*Beauties of the Rose*."

WOODS & FORESTS.

THE FORESTS OF THE PROVINCE OF BELLUNO, ITALY.

FROM a very elaborate report to the Foreign Office on the Forests of the Province of Belluno, in Italy, it seems that the Birch, Spruce and Silver Firs, Larch, Beech, Scotch Fir, Walnut, Maple, Ash, Austrian and Swiss Pine flourish at an elevation of from 2000 feet to 6500 feet, while the Mugho Pine, or *Pinus Mughus*, goes up to 8000 feet. In the district of Belluno, Feltre, and Fonzaso, the Hornbeam, Ash, Oak, Elm, Alder and Robinia flourish up to 2000 feet and the Chestnut up to 3000 feet.

The climatic and mountainous conditions of the province render the maintenance of the forests a necessity for the support of the population. Unfortunately, it seems that owing to long neglect, partly wilful and partly ignorant, to irregular cuttings, induced by a too eager desire for immediate gain, as well as to other causes, the forests have become deteriorated in many parts of the province. While, however, some mountain slopes have become barren, the actual extent of the wooded area has increased since the sixteenth century, and in the last forty years there has been a progressive natural reforestation.

The following are the principal timber trees of the province:—

NORWAY SPRUCE (*Picea excelsa*).—This tree grows to a height of 80 feet to 100 feet, with a diameter at base of from 1½ feet to 3 feet. It prefers a calcareous clayey soil with a north exposure, and flourishes up to the height of 8000 feet above the level of the Adriatic. It attains its greatest development at from 100 to 120 years, and lives 150 years or more. The timber is known as white deal. It is used in house-building and for many other works. In beams and planks it forms the principal article of the timber trade of the province of Belluno. It is largely used, and especially the timber of the forest of Somadida, for masts and spars. From the wood of this tree violins, double basses, guitars, and other instruments are made. The bark is used in tanning, and serves as a temporary roof for wood-cutters' huts. The tree yields burgundy and black pitch; the charcoal is used in foundries.

SILVER FIR (*Abies pectinata*).—This tree is found specially in the valley of Comelico and in the State forest of Cajada. It is also scattered sparsely in the other woods of the province. It attains the height of from 65 feet to 80 feet. Its diameter at the base is from 1½ feet to 3 feet, and it grows up to a height of 5000 feet above the level of the Adriatic. The Silver Fir prefers a fresh substantial soil and a shaded exposure. It reaches its maximum development in from 100 to 130 years, living under favourable circumstances to 180 years or more. The wood is of a whitish colour, solid, very elastic, with a fine straight fibre. It is said, to be very durable in both wet or dry situations, and is used like the Spruce for building and other purposes. It is, however, less sought after than the Spruce, as the planks if kept too dry are apt in a short time to blacken and crack. It is not much appreciated for fire-wood. The tree is resinous and furnishes Strasburg turpentine, which is collected by puncturing the receptacles in the bark with a sharp-pointed hook, and receiving the turpentine in bottles. This is now seldom used in medicine, but is sometimes used in the manufacture of varnish.

LARCH (*Larix europæa*).—This tree attains the height of from 65 feet to 130 feet, and a diameter at the base of about 3 feet. It grows up to the height of 8000 feet above the level of the Adriatic, and prefers a deep calcareous soil, soft and fresh, with a northern exposure. It reaches its maximum development in about 100 years to 120 years, living generally to 150 years, and in the neighbourhood of the glaciers even over 300 years. The timber, which is of a reddish-yellow colour, is compact and elastic.

From its lightness it is preferred to Oak for building. It is useful for underground and subaqueous works, as it does not suffer either from humidity or dryness. It is used in naval constructions, and is also in request by coopers and carpenters generally. The bark contains tannin, and is used for tanning leather, while from the trunk Venice turpentine is obtained by boring a hole into it, the aperture of which is stopped up and again opened some months after when the turpentine that has collected is scooped out with a spoon. During the summer the leaves exude manna known as manna of Briançon.

SCOTCH FIR (*Pinus sylvestris*).—This important timber tree grows to a height of from 65 feet to 80 feet, with a diameter at the base of from 2 feet to 3 feet. It prefers a dry calcareous soil and a southern aspect, and grows up to a height of 5000 feet above the level of the Adriatic. It reaches its maximum development in from 100 to 120 years, and lives from 150 to 200 years. The wood is tenacious, solid and resinous, of a yellowish-white colour, gradually becoming of a reddish tint in the centre. It is used in hydraulic and underground work, for piles, water pipes, &c., and in some naval constructions, and makes good fire-wood. It is the Dantsic or Riga Fir and yellow deal of English commerce. The bark is used in tanning, and the macerated leaves yield a kind of vegetable wool said to have anti-rheumatic properties. The tree yields turpentine, pitch, and tar.

MUGHO PINE (*Pinus Mughus*).—A small tree, 10 feet to 16 feet in height, with a diameter at the base of from 8 inches to 12 inches. It flourishes at an elevation of 8200 feet above the sea in all soils, wet or dry, and in all situations, exposed or otherwise. The wood, which is heavy, solid, and tenacious, and of a yellowish colour, makes good fuel, and the branches are suitable for hoops. It contains a considerable quantity of illuminating gas, and pitch is prepared from its abundant resin.

SWISS STONE PINE (*Pinus cembra*).—This useful Pine grows to a height of from 45 feet to 60 feet and a diameter at the base of 18 inches to 2 feet 6 inches. It has become rare in the province of Belluno, and is only found in the Val Misurina, in the district of Auronzo, and on Mount Cingani di Falcade, in the district of Agordo, at an elevation of 6500 feet above the level of the Adriatic. It prefers a calcareous soil and a southern exposure, and attains its greatest development in from 100 to 150 years and lives several centuries. The wood is tenacious, elastic, easily cut and worked, whitish when fresh, reddish when dry. It is little valued for fuel, but is mostly used for wood carving, for lining rooms in Alpine cottages, and for some minor rural purposes. The bark is used for tanning, and yields, when prepared, a dye for tissues and for colouring spirits. The seeds are eaten, being both nutritive and of a pleasant flavour; they also yield a quantity of oil by pressure. A resinous fluid is obtained from the trunk and branches, which is known as Carpathian balsam.

BEECH (*Fagus sylvatica*).—This valuable tree grows to a height of 60 feet to 80 feet, and measures at the base from 3 feet to 5 feet in diameter. It is found up to an altitude of 5500 feet. It prefers a fresh clayey, quartzose soil and a western or northern exposure. It reaches its maximum development in 140 to 150 years, living generally to 200 years, and under favourable circumstances even to 300. The wood is of a reddish colour, hard, solid, heavy, and flexible, not uniform in texture; it suffers from alternations of humidity and dryness. It is only used in buildings for floorings which are kept dry and for kitchen beams in country cottages. It is especially employed for making hoops for casks, spoons, platters, boxes, and a variety of domestic utensils and tools. It makes excellent fuel and is in great demand by manufacturers of pottery. The nuts are used for fattening pigs and turkeys, and a clear oil is also extracted from them.

WALNUT (*Juglans regia*).—This tree is found scattered over the whole province of Belluno up to

an elevation of 3600 feet above the level of the Adriatic. It grows to a height of from 30 feet to 45 feet, and has a diameter at the base of from 3 feet to 6 feet. It prefers a light and deep calcareous soil with a southern exposure, and arrives at its maximum growth in about 100 years, living for about 200 years. Walnut wood is hard, strong, and durable, with straight veins and of a variegated brown colour. It is used by carpenters and cabinet-makers, turners, armourers, carriage makers, &c., and sometimes in naval constructions. The root and burrs also give a fine wood, which is much valued for first-class furniture. Lately the wood has been very much in demand and almost all the larger trees have been utilised.

It will be noticed in the foregoing notes that the uses of several of these well-known woods are very different in Italy from those of our own country. Amongst forest industries it appears that an Osier plantation is being laid out at Government expense in the district of Feltre with the view of introducing the industry of basket-making, and that a company has also been formed for the manufacture of vegetable wool, broomsticks, matchsticks, and for reducing wood into cellulose for the manufacture of paper. J.

Destroying stumps of copsewood.—“S. A. M.” in GARDEN, Nov. 16 (p. 470) says: “I am cutting down some copsewood, and should like the stumps preserved for the growth of Ferns, &c.” Remove the bark around the margins of the stumps to prevent the growth of young suckers, when the sap wood will then gradually decay and form a suitable pabulum for the spores of Ferns to root and grow. The matured heart wood in the centre of the stump will keep fresh and sound for an indefinite length of time.—J. B. W.

Hedges for damp situations.—I think the best plants that “B.” (GARDEN, Nov. 23, p. 492) could use for a boundary hedge would be Whitethorn (*Crategus Oxyacantha*) or Blackthorn (*Prunus spinosa*), as they grow in almost any soil or situation, and a good hedge of either is practically impassable. Plant in double rows on a slight bank if possible, cut well down when planting, and trim over twice through the summer. Whitethorn and Beech (*Fagus sylvatica* and varieties) planted together make a very strong hedge, but the Beech prefers a light soil. The Holly makes a good and permanent hedge, its only drawback being that it is slow growing. The beginning of May is a good time to plant, and clipping is best done in September or April. Privet makes a splendid garden hedge. It grows rapidly in any soil or situation, but it is not suitable for boundary hedges, as it is soon broken through by cattle.—D. APPLETON.

Conservation of forests.—This is unquestionably a subject of great importance. The physical history of every country proves incontestably that a moderate extent of forests, especially on mountain slopes and elevated rocky ground, where tillage is impracticable, promotes in a high degree both the agricultural and manufacturing interests of individuals, as well as the physical soundness and productive resources of extensive countries. It appears that the influence of forests from a physical, economical, and hygienic point of view is deserving of a more complete investigation than it has yet received. By felling trees which cover the tops and sides of mountains, men in every climate prepare, at once, two calamities for future generations—the want of fuel and scarcity of water.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

FLOWER GARDEN.

ON TASTE IN GARDENS.

For a good many years the motto at the head of the pages of this journal has had a silently beneficial influence, by sinking into the minds of tens of thousands of readers. Our art should be "Nature," mended a little it may be, but not in vanity or distortion, or so that the proper character of a tree, or a plant, or a scene should be lost. And when we have done our best, what unprofitable servants we are of that supreme Gardener, who paints our meadows with delight, for those who will but regard them, and makes our wildernesses to blossom with all the wealth of golden Furze or Broom, or all the purple glory of the Heather. With all our art we cannot produce an effect like that of our humblest flowers—the Buttercup and Daisy, growing in their myriads in their native fields. Still less can we emulate the glory of mountain flowers spread over a wide hillside. But we can humbly learn the lessons of Nature, and can, at any rate, not disfigure this fair earth.

Of the improved public taste in gardening there is happily no doubt. Glaring bedding out is dead, or is relegated to the front gardens of villa residences—where the faults of a past generation are aped, just as the fashionable dress of one season may descend to the back of a beggar a year or two later. A sympathetic audience may also now be found willing to study further steps that may be suggested, and it is here proposed to consider some distortions to which we are more or less accustomed, but which a better feeling for natural form and character would reject.

There are three things that we may chiefly admire in a flower grown to give us pleasure—its beauty, its scent, and its associations. It is not all plants that possess all these three attributes in perfection, or that possess them in a form that is suited to the garden. Much of the beauty of many flowers cannot be enjoyed away from their natural surroundings, in which they have been developed through untold ages, till they and their accompaniments form a picture of harmony and delight. Again, the sweetly-scented flower is often of the humble aspect, and our pleasurable memories may be with anything but the more conspicuous denizens of the parterre. But certainly loveliness, sweet smells, and happy associations should be what we should seek if the garden is again to be a pleasance.

Floriculture, like all the other useful arts, must be pursued for gain, and those who live by it very naturally strive always to produce something that their neighbours have not got, something new or strange. But a greater latitude is allowed us in our gardens than

used to be the case. The great nurserymen and florists have not all bowed the knee to Baal, but are themselves men of great refinement and taste, only too glad when they see a demand for better things. The public, too, have in reality begun to study the Lilies of the field, and to consider how they grow. They see that every plant has some special form or colour bestowed upon it, and that for it to lose that is like a man losing his own soul. The first canon of taste, therefore, in floriculture is that a plant shall not be distorted by artificial cultivation and selection in such a way as to lose the special character bestowed on it by Nature. We will now consider some prominent cases in which this rule is overlooked or disobeyed.

There has latterly been a marked and growing objection to double flowers, and in the majority of cases the objection is a good one, on the grounds of the sacrifice both of natural character and of beauty. The pistils and stamens of a flower are not only necessary to its perfection, but there can be no question of the beauty they impart. Doubling either removes them altogether, or covers them up with petals which Nature finds to be redundant. The doubling of a flower, too, deprives it of its associations in many cases. Take the case of the double Pansy. The thing is simply hideous, and would Ophelia have given it "for thoughts?" or would past happy generations have called it "Heartsease" or "Love in Idleness?" Would Oberon have used it for a love unguent "on sleeping eyelids laid?" Would Herrick have said of double Pansies—

*Frolic virgins once these were,
Over loving living here.*

*Love, in pity of their tears,
And their loss in blooming years,
For their restless here-spent hours,
Gave them Heartsease, turned to flowers.*

Apart from the poets, where would be the delight of children in the fat, friendly open faces and sweet colours of the Pansy if a double abortion were substituted for it?

We all know the green and white inverted cup of that sweet harbinger of spring, the Snowdrop. Yet some wretched florist has degraded this lovely canopy for the bee—or for Oberon himself or for Ariel—into a sort of frilled double petticoat, ugly to behold. Surely of all flowers the Snowdrop might have been left alone. Then we come to the Violet, and here the result of doubling it must be confessed is not so hideous as with the Pansy or the Snowdrop. Still the whole character of the blossom is lost in the alteration, and the graceful, modest Violet becomes a brazen-faced, shapeless flower.

Then comes the Tulip. What can be more splendid than a single Tulip? Truly the bridegroom of heaven, the sun himself, when rejoiced to have run his course, could not find more gorgeous colours for his tent. Yet the florist must give us a double, formless object in which all this splendour and glory are lost, and replaced by a flat, messy lump that the frosts oppress and the rain, happily, soon beats to the ground, after choking its petals with

mud, as it deserves. A garden Hyacinth, till it has run wild again by being left alone for a year or two, is too stiff to be a really very beautiful flower, but it is simply ugly in its double form. Then we come to Daffodils, and here the offenders—Codlins and Cream, Eggs and Bacon, and the like—are old ones, as is evident from their names. Still they are neither things of beauty, nor are they joys for ever, for the first rain remorselessly levels them. The Pheasant's-eye Narcissus is certainly one of our loveliest flowers. Why, then, destroy it by turning it into a sham outdoor Gardenia, which in many gardens comes up blind year after year?

One of our revived old flowers is the Columbine, and most people delight their children by showing them the two doves in the nectaries, in which the name originates. Yet someone has set to work to destroy, by doubling, this peculiarity of the flower, and with it its beauty. The flower is no longer the "Columbine commendable," that fit companion of the "Jelofer Amyable," but a thing like ill-made dolls' underclothes. Many other outdoor flowers might be named did space permit, and among indoor plants there is no doubt that doubling spoils Begonias, Primulas, Cinerarias, Fuchsias, Bouvardias, and Geraniums. Also there are many heretics who prefer the single Camellia.

This tirade against double flowers must not, however, be supposed to extend to all of them. The Rose in its double form has been the queen of our gardens for generations. We can now, however, find a space for and admire the single Rose also, or if we cannot, we can see that a spray of our native wild hedge Rose is one of the loveliest objects in Nature. There has up to the present been still a certain free grace left to the double Rose, but if flowers like Baroness Rothschild are to be the new race, the line will have to be drawn. We do not want Roses of the form of the Savoy Cabbage, and that under no name could smell sweet, because they are devoid of odour. The double Thorn, too, which we see so much of in our suburbs, is quite scentless, and that sweet "slug-a-bed," Corinna, would continue her slumbers, charmed her Herrick never so sweetly, rather than go a-Maying after such a plant.

Another point opposed to the best taste is the mutilation of plants by cutting off leaves or buds or branches, with the view to the development of a few abnormally large or conspicuous flowers. For instance, take the Rose; how much of its grace and beauty are sacrificed, first by excessive pruning, which prevents the proper habit of the bush from being seen, and then by picking off all but the central bud on a branch, so that a single immense flower may be shown. Such monsters, too, are not nurtured by the natural soil, but require an annual mass of rank stable manure, which makes the garden hideous and noisome for months, while the less said about the nauseous slops that are required in the growing season the better. Then the ardent amateur may be found suspending little umbrellas, or other sun screens, over his favourite muck heap, with its

few distorted Rose bushes. All this is a curious perversion of the true object of gardening, till people wish to wear Roses as big as soup plates in their button-holes, or are contented with a bouquet consisting of one single blossom.

In short, size in flowers is incompatible with refinement and beauty, when that size is carried beyond a degree suited to the natural capacity of the plant. In this connection a new class might be suggested in Rose shows—a natural branch, not less than a foot long, with all its buds and blossoms upon it; and a similar departure might be made in the case of Chrysanthemums, which, however, need not be gone into here, having been separately dealt with on page 471.

In the Thames Embankment Gardens just now a sad destruction of beauty of form is going on. The Irises are all having their spears cut off, so as to reduce them to the appearance of Shallots, ready for the salad bowl. The shrubs in many a garden are being deprived of their natural character and pruned into round tuffets, which no well-minded Miss Muffett would approach. The Privet, never lovely at the best, and a plant that gives a deadly monotony to our town gardens, is being made uglier still by being drilled into line. At this time, also, we can best appreciate the ugliness of wire arches in the garden. They are never suited to the proper growth of climbers, and in winter they turn our places into the semblance of ironmongers' yards.

Among other outdoor errors of taste may be placed the abuse of variegated leaves. The *Amaranthus* truly deserves the second melancholy epithet in its long name, and its leaves have the sweet odour of a denizen of the sea-side bed chintzes. The *Alternanthera* looks like rows of pickled Cabbage. The *Aucuba* is a cheerful plant in itself, but you may have too much of it. The variegated Maple is apt to destroy all look of repose where it is planted. The opposite fault, perhaps, is the incessant gloom produced by the growth on so many houses of the Irish Ivy. It is a splendid plant in itself, but there are other creepers. Akin to the dislike to double flowers, we hope to see the use of crested and tasselled hardy Ferns much decreased or stopped. The monstrous growths destroy all the beauty of the fronds.

The scent of flowers is too long a subject to deal with at the end of an article, but Musk is a plant that should be banished from the garden. Turning, in conclusion, indoors again, the growth of indoor Auriculas may surely be given up. Let us have as many hardy border ones as we can, but no more puny greenhouse abortions. In the same way let us give up the training of indoor Azaleas into tasteless pyramids, and the plentiful staking of show plants like Achimenes into the semblance of a bundle of firewood. In short, whether in the open garden or in the glasshouse, let us study Nature and appropriateness, and avoid monstrosity and needless expense. J. I. R.

FLOWER GARDEN NOTES.

CULTIVATION AND ARRANGEMENT OF HARDY PERENNIALS.—These plants have an interest peculiarly their own. The process of conversion was slow, and what wonder, considering the hold that the various phases of bedding out had taken, I was going to say, of every idea of flower gardening except that to be had by bedding out. There is, however, room for both, but if one phase of flower gardening only must be followed, then I unhesitatingly say let it be that of hardy flowers. Some may ask, Why this preference? To which I reply, That the plants are hardier, require no house room, no fire-heat, and give an endless season of flowers. There is also less labour attached to their cultivation. The cultivation of the plants may be summed up in a very few words, namely, well drain the land, trench deeply, and manure well. The question of arrangement is not quite so easily settled, that is, whether the plants shall be in beds by themselves, or grouped, or planted singly in borders. The real question is, in what form are the plants most effective? Personally, I give preference to the mixed border, but not that of a promiscuous or haphazard mixture, but a mixture founded on a good knowledge of the plants, their height, and season of flowering. The various species can then be grouped in numbers of each proportionate to the width and length of border. As, for instance, supposing the border to be 8 feet wide and 30 feet or 40 feet in length, this would admit of good bold groups of each species being planted, beginning with the tallest at the back. I would have three *Delphiniums* in a group, five tall-growing *Asters*, three *Helianthus rigidus*, six tall *Phloxes*, and so on throughout the hindmost line, not rows, as straight lines are to be avoided, and also anything approaching uniformity. Moreover, due thought must be paid to so placing the plants, that as nearly as possible there shall be no equality of bloom over the entire border throughout the flowering season. To continue the planting, the second line of plants being somewhat dwarfer, larger groups of the various species may be planted. I name a few that may follow in rotation; they are *Bocconia cordata*, *Galega officinalis*, *Acanthus mollis*, *Helianthus multiflorus plenus*, *Anemone japonica*, *Phloxes*, *Monarda didyma*, *Spiræa Aruncus*, *Veratrum nigrum*, *Tritoma Uvaria* and *Michaelmas* Daisies of moderate height. The other lines being again dwarfer, still larger groups of each should be planted, and the distance from group to group must of course be decided by the spread of plants when fully grown. I may add that prominent positions should be given to *Pæonies*, *Lilies*, *Gladioli*, and *Pyrethrums*; as each flower at different seasons, a greater degree of gaiety is thereby assured.

Next to the mixed border form of arrangement, large beds on turf are, I think, most suitable for herbaceous plants, and the grouping should be done on the same lines, of course beginning with the tall growers at the centre, and finishing with the tufty growing *Saxifrages*, *Sedums*, *Thriffs*, *Thymes*, *Veronicas*, &c., that should form the marginal line next the turf. There are a few species that are exceedingly effective when planted in groups on the turf, such as a sheltered nook between two shrubberies, in the recess of a dell, or the rock garden. The following are amongst the best for this purpose: *Melanthus major*, *Bocconia cordata*, *Acanthus lusitanicus*, *Bambusa Metake*, *Tree Pæonies*, and *Tritoma Uvaria*. I have left what by some will be thought the best phase of my subject till the last, namely, that of hardy early spring-flowering plants. Many of them are, unfortunately, considered so common as to be unworthy of cultivation. The fact is their cultivation is too easy; hence their neglect hitherto. I need only quote the *Narcissus* as an instance of the progress we are making in respect of spring flowers. Everyone seems bent on having *Daffodils*, whilst *Primroses*, *Polyanthuses*, double and single *Wallflowers*, *Iberises*, double and single *Rockets*, *Violas*, *Daisies*, *Aubrietias*, prostrate-growing *Phloxes*, and bulbs of many kinds are now grown in all good gardens. Of spring gardening in the strict sense of that

term we have none, and wish for none, because the various plants named do greater service intermixed as we have them in the hardy flower borders, their beauty being, if I may so put it, spread over a greater amount of space than is possible in the restricted plots that are usually devoted to spring flowers, and that more often than not have to be removed whilst yet in full bloom to make room for the summer bedders. W. WILDSMITH.

OUTDOOR CARNATIONS FLOWERING AT CHRISTMAS.

"W. P.'s" assumption, that "it is questionable if in such a soil as that referred to well-rooted layers would survive a hard winter," is quite unwarranted, as the successful practice has extended not over one, but several winters. It was during the Christmas of 1887 that I first saw flowers of this Carnation. There had been snow, and frost was still very hard, but instead of a stray bud partly expanding, as "W. P." says might possibly be, hundreds of buds had expanded into fresh good flowers, bunches of which, as large as could conveniently be held in one hand, were cut.

"W. P." asks, "Is it likely that Carnation cuttings put in in heavy wet soil in November will remain fresh till April and then root?" Mr. Hatlo has hundreds of plants, but only five kinds, all of his own raising, and all his stock has been propagated by this means alone.

I grant "W. P." that if first-rate Carnations are wanted in winter we must resort to pot culture, and such a fine flower is desirable and welcome at all seasons, no matter what the mode of culture be; but, nevertheless, "W. P." need hardly have thrown cold water on Mr. Hatlo's practice, because in its results it has an important bearing upon open-air Carnation culture, and it is well to remember that for the one who has all modern appliances for growing, wintering or flowering Carnations under glass in winter, there are many who have no convenience of this kind. Such a one is Mr. Hatlo, and he having found a means by which he can have and enjoy Carnations in winter in an average season, he has gained something, a knowledge of which might benefit others situated as he is. Everybody who knows anything about the Carnation knows the treatment advised by "W. P." about layering and potting up the layers and keeping them in a frame, but there has been too much Carnation coddling, and for one garden where the potting up is an absolute necessity, there are a hundred where a well-rooted layer planted early will pass as safely through the winter as a Cabbage plant. Only to-day I was looking at 2000 layers put out last September, and grand they look, whilst in this fine open weather they are making a root growth which will preclude all possible harm from the lifting action of the frost. The Carnation is not a greenhouse plant we are trying to acclimatise or make amenable to outdoor cultivation. Hardy in a wild state, and eking out a living upon old walls, its hardiness has not been entirely lost through all the stages of development through which it has passed; although, it must be admitted, some kinds are much harder than others. Lastly, in the old way the Carnation season out of doors was generally a short one, lasting over a few weeks of the summer months, but between July and November, when severe frosts rarely come, there is a great blank, and deductions drawn from what Mr. Hatlo and others have done tend to prove that we can fill that blank, and by early and late kinds considerably prolong the Carnation season.

A. H.

Primula Poissoni.—At a recent *séance* of the National Horticultural Society of France, M. M. Cornu exhibited one of the many plants which have been introduced from China by the Abbé Delavay, and which have been determined and named by M. Franchet. This new species (*Primula Poissoni*), which bears a considerable resemblance to *P. japonica*, is perennial, and is found in the wild state on the mountains of Southern China, whence seeds of it were sent to France along with seeds of several

other kinds of Primulas. Amongst the plants raised in the gardens of the Muséum from the seeds of these Chinese Primulas, *P. Poissoni* is the only one which has as yet flowered. The corolla is undulated and denticulated at the margin, and has a golden-yellow throat. Some of the seedlings, which were planted out in the open ground, passed the winter in perfect safety under a bell-glass and their stems have since attained a height of upwards of 2½ feet. Others of the plants which were kept in a frame came into bloom in June.—*Revue Horticole*.

ROSE GARDEN.

STANDARD ROSES.

THESE are said to be becoming very scarce in the trade. I suppose the reason is not far to seek. Two or three years ago there was a great glut of standard Roses, the probability being that persons who grow Roses prefer to plant dwarfs instead of standards. They were therefore not in demand, and nurserymen ceased to work so many, and the stocks are being run out, and they are therefore becoming scarce. But notwithstanding what may be said against the formal character of standard Roses, they are yet well adapted for forecourt gardens, where they are mostly employed. They line the walk leading to the main door of the house; they occupy places in the beds, on the Grass plots, and in the border, which usually bounds a forecourt garden. The advantage of standard Roses in a small garden of this character is that plants can be placed in the beds below them, and though the occasional digging of the soil in the beds may endanger the Roses, yet when done with care, little or no injury results. In my own neighbourhood, where we have a good loam resting upon gravel and in some cases clay in the place of the gravel, standard Roses do remarkably well, make a vigorous growth, and carry fine heads of bloom. In my neighbourhood La France in particular makes a rare standard variety and blooms for a long period. Those who purchase standard Roses should stipulate that the varieties be vigorous growers and that they flower freely.

Standard Roses can be planted at any time during the autumn and winter, but the sooner it can be done the better. November is the best month for planting, because the Roses are likely to become established before severe frosty weather sets in. In planting, shallow, in opposition to deep planting should be followed. It is not uncommon to see standard Roses dying in forecourt gardens, and when the cause of death comes to be inquired into, it is generally found the roots are too deep in the soil. Not that they are planted deeply, but soil is heaped up in the form of little mounds about the Roses, which is a great mistake, and the roots, instead of being 3 inches or so below the soil, are found at the depth of 9 inches or more, and so death is pretty certain. The Rose is always grateful for mulching, and it can be done with great advantage in autumn and again in summer, but if the soil has accumulated too deeply, let some of it be removed before another mulching is required.

A common fault in Rose planting in forecourt gardens is to make the beds in the form of elevated mounds upon which the Roses are planted. This is a great mistake, because, although the raised position may not be without its advantages in autumn and winter, it is during a dry time in summer the plants are likely to suffer, and the evil is aggravated by the beds being planted with free-rooting bedding plants like zonal Pelargoniums, which rob the soil of a good deal of moisture. In the case of a forecourt garden on a north aspect, on which the summer's sun does not play so fiercely as it would were the Roses on the opposite side of the garden, standard Roses may be planted a little higher above the ground level, but they will require to be watered during a time of drought.

Standard Roses should be staked as soon as planted, but the way in which this is sometimes done is opposed to common sense. Stakes very

much too large are occasionally employed, and instead of being placed behind the plant from the point of view in the front of it, they are at the front or sides and show defective workmanship. They should be as far as possible of the same colour as the trees; therefore, it is best to use them with the bark on them rather than stripped off. They are frequently left with their tops sticking up among the branches; whereas, they should only come just above the point of junction of the stem with the head, and the latter be securely fastened to the stake at that point, as I have known the heads of Roses completely blown away for want of this attention. I have known standard Roses to be planted and pruned at the same time. This is not good practice. It is well to shorten back any long shoots, but pruning is far better left until the spring. The plants have a more furnished appearance during the spring, and when they are pruned at that period of the year they soon break into growth and form heads.

I have seen root-growths allowed to be thrown up from the stock or shoots from the stem and allowed to remain. These should be rubbed or cut away as soon as they put in an appearance. Some persons who are deficient in the most elementary knowledge of gardening appear to be unaware that a Rose which has been worked upon the Brier or Manetti stock, if it puts forth growths from any points, it must be the Rose that is worked upon it, and they are allowed to remain, the obvious difference in the wood notwithstanding. In such cases, the Manetti or the Rose stock will overpower the variety worked upon it, and in ignorance a bush is formed which does not supply the expected flowers.

I am writing not for rosarians, but for the large amateur class of limited knowledge who love and grow Roses sometimes in a kind of haphazard fashion. I have endeavoured to set forth a few simple rules for their guidance in the hope they might be followed with advantage. R. D.

Striking Roses.—My attention has been called to various notices in your columns as to making cuttings of Roses. The modes suggested were much at variance with theoretical views, so I tried them all with the results I anticipated, viz., failure to a great extent, and where successful, the explanation obvious. However, with all my experiments with Roses, which I have carried on for many years, it never occurred to me to try striking cuttings in phials of water (as I always struck my Fuchsias fifty or sixty years ago) till the plan was adopted by a policeman, as recorded in THE GARDEN. My *modus operandi* may be useful to others (who find amusement in such trifles, as I do) in verifying theories. Of course, I commenced by cutting out dead stems of Rose bushes and calcining them in an iron receiver; half an ounce of this white ash was then mixed in half a pint of boiling water, and the phials filled with the milky concoction, or rather solution. The phials were then hung up in the conservatory against the wall, facing southerly, so as to be exposed to the light and heat of the sun. I then cut a strong shoot of Glory of Waltham, avoiding cutting any of the parent stem (as recommended by your correspondents) and inserted it in the phial of water which had become perfectly translucent, the ash having been precipitated in the form of an impalpable powder. This was done on Oct. 29. On Nov. 12 a callus was formed; on the 25th, three or four sturdy white roots protruded, and are growing rapidly, as I expected; but I did not expect they would first make their appearance, as they did, on the side facing the light. I anticipate their rate of growth at one-tenth of an inch in twenty-four hours; but this I shall verify. Of course I left all the leaves on the cutting, as they are the organs of absorbing carb. dioxide, and decomposing it under the influence of solar light, and so forming the sap which descends by the vessels in the bark to form roots. I have only thought it necessary to state particulars with regard to one cutting, though all are interesting, and I shall continue making cuttings in this way monthly, so as to determine accurately the best time for making Rose

cuttings, as my views and those of gardeners do not accord. I should add, by-the-by, that the temperature in the conservatory has ranged from 96° to 45° on one occasion; but the average temperature is 56°.—ANON.

NOTES OF THE WEEK.

Plumbago rosea.—There is a charming display of this old favourite at Syon House, Isleworth. It is quite as beautiful in its way as *P. capensis*, which has rather overshadowed it. *P. rosea* is too good to neglect.

Blue Primulas.—We have received a few blooms of the "blue" Chinese Primula. It is hard to convince novelty-seekers that there is no such thing as a blue Primula. The flowers have no more right to the name of "blue" than the many so-called white flowers have to the name of "alba."

Odontoglossum Inseayi splendens.—An excellent form of this Orchid is in flower with Messrs. Laing & Sons, Forest Hill. The plant has a spike of five flowers, each of which are richly coloured, especially the lip. This is pure golden-yellow, heavily spotted round the margin with crimson.

Eccremocarpus scaber.—I observed this lovely creeper spoken of in THE GARDEN recently. It may be worth noting the length of time it continues in bloom. It has been in bloom here on a west wall since early in May up till the autumn. It does best in a warm dry sandy soil.—J. C., Dorset.

Cattleya exoniensis.—This is also flowering in the Forest Hill Nursery, and we cannot have too much of such a splendid hybrid, for which we are indebted to Mr. Dominy, who raised it from a cross between *C. Mossiae* and *Laelia purpurata*. The delicately-coloured flowers are welcome at this season.

Angræcum hyaloides.—A coloured plate of this pretty small-flowered *Angræcum* is given in the November number of *L'Orchidophile*. It is quite a gem amongst *Angræcums*, scarcely rising more than a few inches in height, and smothered with short racemes of pure white flowers. It is rare.

Chrysanthemum Moonlight is one of the most beautiful of late varieties. It is now at its best in several collections. This variety was introduced in 1885, and is of a very delicate primrose tint, sometimes creamy white, the flowers of the true Japanese character with the inner florets somewhat twisted. It is a tall grower, but the flowers are most acceptable.

Eucharis amazonica.—I send you an eight-petalled *Eucharis* flower. Not having seen anything like it, I venture to ask if it is an uncommon occurrence. It is certainly a most attractive flower, and, I venture to say, an improvement on the type. Doubtless it has come through extra vigour, many of the spikes carrying eight flowers.—J. RAINBOW.

Jambosa australis.—This is very handsome in the conservatory at Syon House. It is known also under the name of *Eugenia australis*, and is a synonym of *E. myrtifolia*. The plants are about 12 feet high, clothed with a luxuriant mass of leafy shoots now coloured with deep red, almost ovoid berries. One specimen was full of fruit, and in a large structure as at Syon House, such plants as this are of good service.

Winter Gladiolus (*Schizostylis coccinea*).—This was until a few days ago a mass of scarlet flowers in the Tooting Nursery of Messrs. Barr & Son. It is hardy, and the tufty, abundant leaves are in themselves ornamental. At Kew it is planted out with considerable success. We usually find it in pots in the greenhouse, but a trial should be made of it out of doors in all good gardens.

Chinese Cyclamen-leaved Poppy (*Eomecon chionantha*).—This distinct Poppy-wort, of which a coloured plate was given in THE GARDEN for January 26, 1889, was in full flower until the frosts came in Messrs. Barr & Son's nursery. It has yellowish green leaves, like those of the Cyclamen, and snow-white flowers, that remind one of those of some of the winter-flowering Begonias. It is quite new, and should make a good garden plant. A description and history of it are published in the same issue.

Calanthes at Syon House.—The prettiest show of *Calanthe Veitchi* and *C. vestita rubro-oculata* we have seen in a private garden this season is at Syon House, Isleworth. The spikes of *C. Veitchi* are each from 1 foot to 3 feet and 4 feet long, bearing flowers of bright colour and individually of excellent size, the result of good culture. The charming racemes of the deep crimson-eyed variety of *C. vestita* strengthen the rose colour. Arrayed tastefully with Ferns, such Orchids as these

make a pretty show, and their value when cut is well recognised. We are pleased to find Mr. Wythes taking a marked interest in Orchids, as there are now four houses given up to their culture.

Lasiandra macrantha.—We were pleased to find this treated properly at Syon House, Isleworth. Mr. Wythes grows it in much the same way as *Bouvardias*. The plants are in pots, and plunged out in ashes during the summer. They are placed in an intermediate temperature in September, where they keep on flowering for weeks. In this way we obtain sturdy, healthy, and well-flowered plants fit for the choicest decorations.

Lachenalia rubida.—By post to-day I send you a flower and leaf of *Lachenalia rubida*, which I believe rarely flowers in England. My wife has long cultivated *Lachenalias*, of which we have now forty-four or forty-eight varieties. *L. rubida* flowers with us every autumn.—ALFRED W. TAIT, F.L.S., Oporto, Portugal.

** An interesting *Lachenalia*. The scape sent was about 6 inches high, bearing ruby-salmon-coloured tubular flowers. It was introduced about 1803, and is rare.—ED.

Recent Bouvardias.—Old and new *Bouvardias* that have any merit are grown at Syon House, and amongst the more recent additions President Cleveland is considered by Mr. Wythes one of the best. It bears its large trusses of scarlet flowers in charming profusion, and is quite a contrast in colour to its sport, Mrs. Robert Green, which is like the parent in everything but colour, this being a soft shade of salmon-pink. A coloured plate of both varieties appeared in THE GARDEN for March 30, 1889. A good new double kind is *Triomphe de Nancy*, which has double flowers of a scarlet colour, and is a good companion to President Garfield, pink, and Alfred Neuner, white.

Pyrus domestica.—Will any of your correspondents kindly say where the true *Pyrus domestica* can be had? As the writer on page 510 truly says, *Pyrus Aria* and *terminalis* are substituted for it by both British and foreign nurserymen. The *Sambucus racemosa* (p. 510) grows most luxuriantly in W. Yorks, but its lovely coral berries are always taken by birds as they ripen, and we thus never see the fine scarlet bunches of fruit which are so conspicuous on native plants in the Ardennes, Tyrol, &c. I may add that *Chimonanthus fragrans* is now blooming on a north wall at this place.—R. MILNE-REDHEAD, Holden Clough, Clitheroe.

The Fraser and Hall Fund.—A meeting of the committee having in hand the organisation of this fund was held at Messrs. Protheroe and Morris's offices on the 29th ult., Mr. Harry J. Veitch presiding. The hon. secretary, Mr. Fred Horsman, stated that the total amount received and promised up to that date was about £410, and it was unanimously resolved that the list should be closed on December 12, by which time it is desirable that all promised subscriptions should be sent in. The committee will meet again on the 13th inst. to determine as to how the fund should be disposed of. The last list of subscriptions included a donation from Mr. A. B. Stevens of 10 guineas.

Exogonum Purga.—"H. P." (GARDEN, Nov. 9, p. 434) speaks of this as apparently flowering out of doors only "in the more favoured districts of England." It may therefore be of interest to record that it will flourish not only in the Isle of Wight and Gloucestershire, but also in the more trying climate of North-east Essex. The snowstorm of Nov. 27 put an end for the season to a specimen here which has been among the brightest things in the garden since the beginning of October. Of the hardness of the tuber, at any rate with a little protection in winter, there can, I think, be no doubt; the only difficulty is a position sufficiently sunny to tempt it into flower betimes. It is rightly described as a "robust climber," and to give mine more room I hope to shift it to a still warmer corner than it now has, where it can ramble at will over a rival in beauty and of much the same degree of hardness—*Solanum jasminoides*, another half-hardy plant supposed to flourish only in the more favoured districts, but which the snowstorm and 10° of frost have left here as brave and graceful as before, except at the tips of the most exposed shoots. May I note, too, that the mild November has brought out a few flowers of *Cyclamen Atkinsi*, and now till March we shall not be without

them, except while they are smothered in snow, from which, however, they emerge as sturdy and cheery looking as ever; then in April come *C. repandum*, and again, from August to October, *C. hederæfolium*, three distinct seasons of *Cyclamen* flowering. Yet in how few gardens do we find these gems alike of winter, spring, summer, and autumn, which, in my experience, flourish and reproduce themselves freely from seed in anything like a favourable locality. One more recommendation. In my garden almost the only autumn flower that has not yet succumbed to winter is the hardy new *Veronica salicifolia*, which is apt if left alone to grow leggy, but is easily pruned into a bush of good shape, and is still opening out its sprays of feathery white blossoms as valuable in the house as they are charming on the shrub.—H. B. R., Colchester.

Epacris at Kew.—The value of the *Epacris* for decoration is pretty well known, as its charming spikes are always popular at this season. A large group of the numerous varieties, all of which are extremely beautiful, is now flowering in the greenhouse at Kew, making quite a feature on one of the side benches. The plants are mostly grown in 5-inch or 6-inch pots, each plant having an abundance of long shoots which are well clothed with bloom. The *Epacris* is easily grown, but care should be taken never to allow the plants to get dry, as, like most plants of a similar nature, they are very sensitive to dryness at the root. After blooming is over and the plants are cut back, a few degrees warmer than an ordinary greenhouse temperature will materially assist the new shoots. If repotting is necessary it should be done as soon as the plants start into growth. *Hyacinthiflora*, *h. fulgens*, *Model*, *Eclipse*, *candidissima*, *Fireball*, and *miniata splendens* were amongst other good sorts noted at Kew.

Chrysanthemums at Chase Lodge.—The prettiest show of *Chrysanthemums* grown naturally is at Chase Lodge, Mill Hill, where Captain Fernie has a three-quarter span Peach house 8 yards long filled with *Chrysanthemums*, which are both in pots and planted out in a border, with the slender shoots nailed to the wall in the same style as ordinary climbers. It is unheated, except for a stove at one end, and contains, except for the leafless Peach trees, nothing but *Chrysanthemums*, with a few Myrtles and spreading *Castor-oil* plants here and there to relieve the mass of varied colour. At the entrance, on the wall, is a two-year-old specimen of *Elaine* bearing upwards of 300 flowers, each shoot carrying a wealth of bloom, not what the exhibitor would delight to see, but showing how beautiful the *Chrysanthemum* is when left to grow in its own way. Throughout the house *Elaine* is a favourite variety, also the pure white *Fair Maid of Guernsey*, *Bouquet Fait*, *M. Lemoine*, *Jardin des Plantes*, *White Trevena*, *Princess Teck*, the finely coloured *Jules Lagravère*, *Emily Dale*, *Mrs. G. Rundle*, and *Jeanne d'Arc*, a plant of which carried sixty well-formed flowers. The plants are only stopped once when quite young, and it is surprising to find such varieties as the old *Jardin des Plantes* carrying flowers of full form, though comparatively small. It is the Japanese kinds that are most useful for this kind of culture, but several of the leading incurved types were in excellent character. Such a feature as the house of *Chrysanthemums* at Chase Lodge should be repeated in other gardens, especially where graceful sprays of bloom for cutting are in constant request.

Winter-flowering Begonias.—A group of *B. socotrana*, first flowered in England in 1881, and flowering plants of *Adonis* and *John Heal* at Syon House, Isleworth, are reminders of a class of plants that gardeners would do well to make careful note of. Winter-flowering *Begonias*, as the useful *Knowsleyana*, *Haageana*, and such a pretty gem as *hybrida multiflora*, are, of course, always welcome, but the new race deserves to make quicker headway. The finest of this race is *John Heal*, named after its raiser, who fertilised the flowers of *B. socotrana* with pollen from a tuberous variety called *Viscountess Doneraile* and obtained one seedling, which flowered in 1885, and proved a valuable acquisition, as may be seen from a coloured

plate of it given in THE GARDEN for March 9, 1889. It branches freely and gracefully, and bears a mass of rosy carmine flowers on slender peduncles. The next arrival was *Adonis*, which has a more robust habit than *John Heal*, larger foliage, and the flowers are quite 3 inches in diameter, the colour soft rose. It is not so beautiful as the first on the list. *Winter Gem* has rich carmine flowers, and is a beautiful *Begonia*, with a more compact habit than *John Heal* and larger flowers. This was obtained by crossing *B. socotrana* with a crimson-flowered Andean variety. All the *Begonias* named are easily grown, and have quite a different character from the usual run of plants that flower in winter. To gardeners who have groups to keep bright with colour in the conservatory, such plants are of unusual value.

Iris stylosa alba.—The readers of THE GARDEN may be interested to hear of the beauty of the white variety of *Iris stylosa*. I was given a very small plant of it by a friend who had wintered at Algiers. He had it from a gardening friend there. It came to me in a little tin box by post from Marseilles, and now it has been living and flourishing in my Devonshire garden for three years, and about Nov. 15 it sent up three spikes of ivory white blooms with sufficient yellow along the petals to make the white more lovely. I think the individual flowers are rather larger than those of the lilac *stylosa*, which is also now blooming close by, and which is a sweet remembrance of sunny February days spent at Cannes.—M. SAUNDERS, Ardmore, Torquay.

** M. Saunders sends a sketch of this plant, which must be a charming addition to those who have light soils on which the pretty common form is so happy.—ED.

Nicotiana affinis.—This sweet-scented Tobacco appears to be much hardier than any other kind, judging from my own observations. During this autumn it has stood the frost uninjured when other kinds were quite killed. I could have obtained good fresh blooms of this Tobacco till the 26th of Nov. from the open garden. This Tobacco is grown and highly appreciated by some as a pot plant. When grown in a pot it needs a good soil to get the best results. I saw some plants in a garden in Hampshire in April last full of flowers. These had been raised from seed late in the previous summer, potted into large pots in autumn, and kept moving during the winter. When the days began to lengthen, they were well supplied with manure water, and proved a pleasing feature associated with *Cinerarias*, *Primulas*, &c. in the conservatory.—J. C. F.

East Anglian Horticultural Club.—A meeting, having for its object the formation of a horticultural club for East Anglia, was held at the "City Arms," Norwich, on Thursday, the 21st ult. Taking advantage of the occasion of the Norwich *Chrysanthemum* show, which was held the same day, when a large number of gardeners annually visit the city, a circular was issued convening the meeting on that date. A large and influential gathering was the result, many of the best known gardeners in the county being present. After a friendly discussion it was unanimously agreed that a club having for its aim the advancement of horticulture in the eastern counties be formed, and with that view a committee was elected to organise future procedure, Mr. Morris, of Witton, being appointed president for the ensuing year. Many members were enrolled, great hopes being expressed as to the result of the meeting.

The dwarf Furzes.—Can any reader kindly tell me if these plants (*Ulex nanus* and *U. gallicus*) are to be had in nurseries, and if so, where?—Cosm.

Clipped trees at Canons Ashby, Northampton.—In the engraving given in THE GARDEN (Nov. 23, p. 473) of a view in Canons Ashby Gardens, what a disfigurement the horrid clipped Yews present against the grand old Cedar and other trees growing naturally! It is difficult to understand how such things should now be tolerated, especially after so much has been written and said against such distortions. Such things might with advantage be destroyed with much of the masonry that disfigures many gardens at the present time.—S. D.

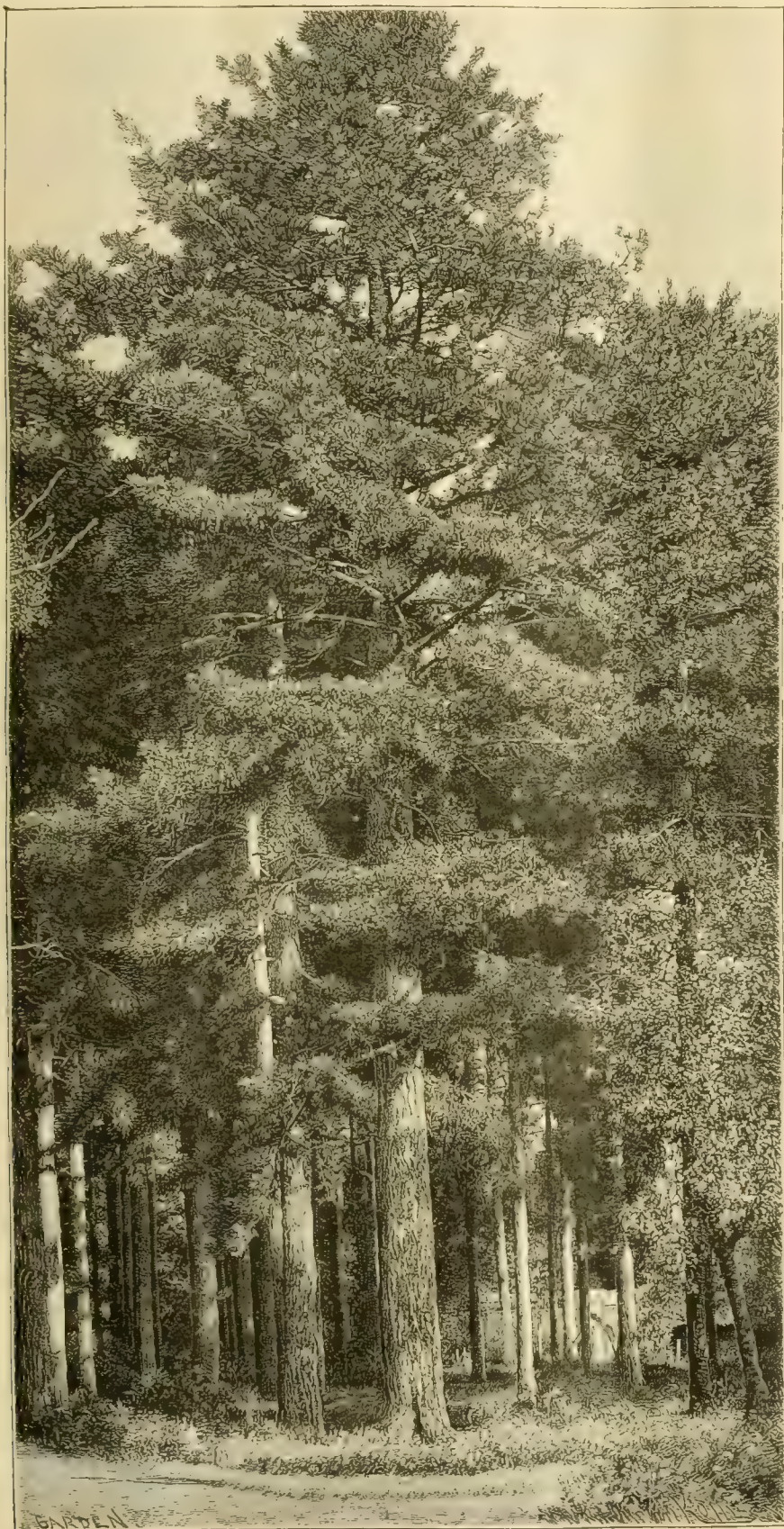
TREES AND SHRUBS.

THE CALABRIAN LARICIO.

FEW trees are more suggestive of grandeur than the noblest species of the Pine tribe.

Impressive and attractive in their everlasting beauty when seen by themselves, they call forth feelings of admiration when thousands of fully grown trees are seen growing together. Nowhere, I think, can that impression be felt

so deeply as in the forests of Conifers that clothe the lower and intermediate stages of the Sierra Nevada facing the Pacific Ocean, in California. There can be seen, growing side by side for miles, two of the grandest in the

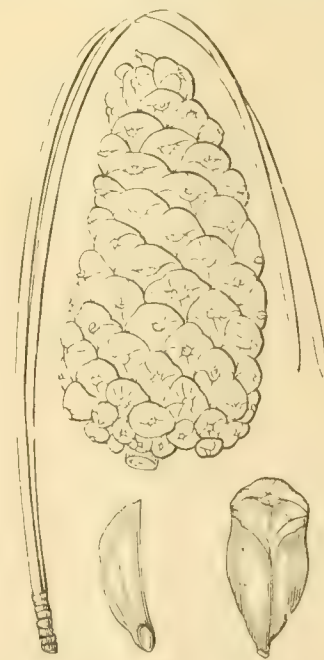


The Great Corsican Pine (*Pinus Laricio*). Engraved from a photograph sent by Maurice L. de Vilmorin.



Coning branch of Corsican Pine.

whole Pine species, viz., *P. Lambertiana* and *P. ponderosa*, rising to a height of 250 feet, and sometimes more. None of our European species can bear comparison with these two giant species; still, one of our South European forest trees can give us a rather good idea of the yellow Pine in its native beauty, and nearly rival it in the perfection of the general shape. *P. ponderosa* has a straight and powerful stem, abundance of well-branched limbs, rather long and densely pressed leaves, and a sharply conical top that creates, even in



Full-sized cone, scale, seed and leaves of Corsican Pine

old trees, an impression of great vitality. *P. Laricio* has a very straight cylindrical trunk, symmetrical, obtusely-ascending, rather long, but well ramified branches, the foliage in the best varieties being very dense. The general appearance of the best varieties is very much

like that of the yellow Pine. A great deal in fact depends upon the place where the Laricio seeds have been collected in the quality of the seedlings as decorative trees. The P. Laricio naturally grows in rather few and wide-apart stations north of the Mediterranean Sea, and in such islands as Corsica and possibly Cyprus.

The Corsican forests are among the finest in the world. The trees attain their utmost size and beauty in positions that are from 4500 feet to 6000 feet above the sea level, and in gravelly soil created by the decaying of the granitic rocks. In the Aitona forest, trees 140 feet to 150 feet high are not uncommon, their circumference at 3 feet from the soil varying from 16 feet to 18 feet. Such trees may be 400 years old, but the growth, at least in height, is feeble after the first 100 years. This is not, however, the maximum size of P. Laricio; a fine and certainly much superior variety thrives in the south of Italy, where the P. Laricio forests cover a part of the Calabrian Mountains at nearly the same altitude as in Corsica. Near Potenza and Albano di Potenza are reported to be the finest parts of those forests. It has been duly ascertained, anyhow, that some Calabrian Pines are fully 180 feet high and bigger and coarser in all their parts than the Corsican ones. Those noble trees are chiefly used for naval construction.

The Calabrian forests were little known before the first years of the present century. What had been ascertained strongly urged my grandfather, the venerable M. de Vilmorin, a member of the Société Royale d'Agriculture, to try and import some seeds of those remarkable trees. He succeeded in getting some as early as 1820, and contrived to secure a somewhat regular supply for some ten years, when the political condition of those countries prevented any further intercourse.

M. de Vilmorin advised some landed gentlemen and foresters among his acquaintances to try and plant those trees as extensively as possible. At that period originated some of the Calabrian Pine plantations that are to be found near Paris, and also the plantations M. de Vilmorin himself created on his property at Les Barres, Loiret, where 200 acres were set apart for forestry and for ascertaining the value of both native and foreign trees.

The Calabrian Pine in the foreground of the engraving grows and has been photographed at Les Barres. It was last year 6 feet 6 inches in circumference at 3 feet from the ground. Some of the soil at Les Barres is rather poor and sandy, while other parts of the plantation are dry and calcareous. Successive sowing and planting of the Calabrian Pine were made in comparison with P. Laricio, imported from the south of France, Corsica, Mount Etna, Asia Minor, and with the Austrian Pine, in both soils. In every instance the Calabrian Pine maintained a great superiority. It is very little higher than the Corsican Pine, but much better furnished with branches and bears an abundance of leaves. The trunk is far more substantial and powerful. The

Mount Etna Laricio is very near to it. The Taurian Pine (P. Laricio Pallasiana) has the same density in its branches, but is shorter stemmed.

I have made records of measurements at long enough intervals to prove that trees nearly 70 years old maintain a very active annual growth. Seedlings of the first planted Calabrian Pines have grown to a height of 40 feet at Les Barres. The timber of those trees is of very good quality, a little dark coloured and heavy in consequence of the amount of turpentine.

Let its importance be what it may for the forester, it surely deserves much attention for ornamental planting. Either isolated or planted in limited groups it will soon repay the planter, and it thrives in any soil except the peaty and marshy ones. Small, or say two-year-old seedlings can be planted. It will then be proper to have some surplus plants, as some may fail to grow. Young trees 2 feet or 3 feet high are sure to succeed if properly handled and planted at the right time, viz., September, or, still better, April.

The excessive vigour in these Pines will sometimes cause branches to incurve and become nearly vertical, thus destroying the symmetry of the trees, which will divide their stems and form two heads. That generally takes place when they are twelve to fifteen years old, and it is not difficult then to cut away the superfluous leader, when the Pine will regain and preserve its usual symmetry and figure.

MAURICE L. DE VILMORIN.

THE TRAVELLER'S JOY. (CLEMATIS VITALBA.)

MANY Kentish hedgerows and woodlands in these dull November days are rendered peculiarly bright and pleasing by the curious fluffy wreaths of this pretty native climber, with which, in not a few instances, they are so thickly draped as to be almost lost to sight. Disused chalk pits would seem to be the favoured haunts of the Traveller's Joy, for there it is seldom wanting, and grows with greatest freedom amongst the dry chalky rocks, and where hardly a particle of soil is to be seen.

Few sights are at present more cheering and summer-like than old and neglected Thorns and Guelder Roses wreathed and draped in the graceful festoons of this pretty plant, the silky, feathery carpels, which are produced in the richest profusion appearing at a short distance away like bands of some small-flowered Rose, or big growing American Bramble. The Traveller's Joy delights to creep and twine amongst the branches of the Hawthorn, and where its own slender stems can find that support of which they are ever in want. Not at all uncommon is it to see the curious silky carpels peeping out from amongst the branches of its supporting friend at fully 20 feet from the ground; but this is nothing as compared with the distance to which a plant will ramble about, for more than once have I traced the stout cable-like stems of a single plant extending to fully 20 yards from where the marginal root-stock was situated. This creeping character of the Traveller's Joy renders it a most valuable plant for covering old ruined walls, the sides of disused chalk pits, or any similar object that may be desired. It is of the easiest culture and one of the simplest to propagate, for by digging up the rooted branches and severing them from the main stem, stout plants after a year in the nursery border are readily enough procured.

Although the Traveller's Joy is usually found growing in chalky or limestone districts, yet a great quantity of either is by no means a necessity. By adding a small quantity to the soil in which it is to be planted it soon gets established and grows with great freedom, the trailing branches rooting freely wherever they come in contact with the ground. The plant thus in an incredibly short space of time soon covers a large surface of ground, and flowers with undiminished freedom from year to year. The best place to see this native Clematis to perfection, and where its full beauty and value as a creeping plant are best set forth, is in close contiguity to a group of Thorns, and into which the long and lithe branches may ramble at will. Then the graceful habit of the plant is fully developed, for the drapery of foliage and flowers as they hang in graceful masses from the branches of the Thorn are peculiarly pleasing and attractive.

An old Thorn on the lawn festooned with wreaths of the Traveller's Joy is just now an ornament to any place, and I wish that such happy and perfect combinations were seen more frequently. Our northern friends have certainly little idea of how beautiful and interesting are many of the southern hedges and waste places during the dull winter months with the floral remnants of this native climber.—A. D. W.

With reference to paragraph under this heading in THE GARDEN, Nov. 23 (491), I may say that a chalky soil is not at all a necessity to this plant. It grows very vigorously in the clayey loam of this district, and it is surprising that its beauties as a climber are not more appreciated. I suppose that if it were not so common it would be more treasured. There is a splendid show of it on the high road between Gad's Hill and Rochester. Of course, it grows on the chalk there, but I repeat that this is not a necessary ingredient in the soil.—T. D. T., *Southend*.

RETINOSPORAS.

THERE has been from time to time a considerable amount of controversy with regard to the genus Retinospora, as by some the number of species has been limited to two or three, and by others it is eliminated altogether from the list of genera, the members of it being for the most part classed under the head of Chamæcyparis. Whatever difference of opinion there may be from a botanical point of view concerning the Retinosporas, there can be none as to their beauty and great value to the planter, more especially where small gardens have to be dealt with, as most of them must be included among the small or medium growing Coniferae. Of the various plants horticulturally known as Retinosporas, by far the largest growing are R. obtusa and R. pisifera, both of which are among the principal timber trees of Japan. The first, R. obtusa, is in this country from an ornamental point of view superior to R. pisifera, more especially if the soil is somewhat light, as R. pisifera then loses much of its smaller spray and presents a rather naked appearance. R. obtusa is very variable when raised from seed, some of the plants pushing up a decided leader and assuming an almost pyramidal habit of growth, while others are of quite a rounded outline. In the arrangement of the branches there is also a considerable variation, some being rigid, while others are slender-habited and more or less drooping, in direct contrast to which are those with dense foliage and numerous branches, that overlap each other and form a massive specimen of a bluntly conical shape. The tint of the foliage also varies in a marked manner, while the texture of the branchlets differs widely. In some they are light and graceful, while in others they are very thick and massive. Varietal names have been given to some of the most strongly-marked forms, among them being compacta, nana, and pygmaea, all of whose characters are indicated by their respective names. This last is quite a curiosity, of which I have a specimen more than twenty years old that is not yet a foot high, but it continues to spread in a horizontal manner. There are a couple of golden-leaved forms, one of which, aurea, is rather more upright than the type, and

the other, *gracilis aurea*, which is of an open pyramidal habit of growth. The branches of this are somewhat spreading and drooping at the tips, while the foliage is when young of a bright yellow, which when mature changes to yellowish-green.

Three distinct forms which are often classed as separate species may be safely considered as varieties of *R. obtusa*, viz., *filioides*, *lycopodioides*, and *tetragona*. The branchlets of *filioides* are very short and stout, and nearly of an equal size, while they are of a very deep green hue. In *lycopodioides* the branches are loose and irregularly arranged, while they are much crowded at the extremities. Of *tetragona* the only form in cultivation is one in which the foliage is of a rich golden yellow, and is known as *R. tetragona aurea*. It forms a dwarf, rather spreading plant of slow growth, and is very suitable as a rockwork shrub.

R. PISIFERA, which ranks with *R. obtusa* as a timber tree, is altogether more open in habit than that is, and, as far as my observation extends, there is not so much difference among the seedlings when it is raised in quantity as there is in the case of *R. obtusa*. Thus it will be readily understood that we have only one well marked variety of *R. pisifera*, viz., *aurea*, which forms a free, much-branched, dense-growing specimen of pyramidal habit, whose foliage is of a rich golden colour when in a position thoroughly exposed to the sun. A very beautiful and distinct plant has been by some regarded as a variety of *R. pisifera*, though to an ordinary observer it is so different from the last, as to be fully entitled to specific rank. I allude to *R. plumosa*, which is one of the very best medium growing Conifers that we possess. It is seen to great advantage when from 8 feet to 12 feet in height, its usual habit then being to form a very dense pyramid, the branches of which are somewhat erect and furnished with short plume-like branchlets. In colour it is a distinct shade of rather greyish green. There is also a golden form of this (a most beautiful shrub) whose young shoots are of a light golden yellow, which gradually becomes greener towards winter. Another variety (*argentea*) has the young growth of a creamy white, but it is not so effective as the preceding. There yet remains a third variegated form of this *Retinospora* (*alba picta*) in which small portions of many of the branches are pure white, thus giving to a specimen the appearance of being sprinkled with snow. *R. squarrosa* is a low tree, or bush, of a somewhat rounded outline, and especially noticeable from the beautiful silvery hue of the foliage, in which respect it stands out quite distinct from any other Conifer. Though so different from all the rest, it can really only be regarded as a variety of *R. pisifera*, as instances have been known of branches of *R. squarrosa* reverting to those of *R. pisifera*.

R. FILIFERA (the weeping *Retinospora*) forms when young a globular bushy plant, but as it grows up, the outline of the specimen becomes more irregular. A very marked feature of this is the long, pendulous, thread-like branchlets, mostly terminated by tufts of little shoots, so different from those of any of the other *Retinosporas*, and more like those of *Biota pendula* or a variety of *Cupressus Lawsoniana* (*filifera*).

R. ERICOIDES is a dense upright shrub, seldom more than 1 yard high, with pointed leaves arranged crossways on the branches. During the summer the foliage is green, but in the autumn it changes to a purplish-brown, which tint is retained throughout the winter. It is very useful for small gardens, as the rate of progress after it attains a certain size is very slow.

The last of the *Retinosporas* to mention, and one that has given rise to a considerable amount of controversy, is *R. leptoclada*. According to Messrs. Veitch, in their "Manual of the Coniferae," it appeared among a batch of seedlings of *Cupressus thuyoides* (the White Cedar) in the nursery of M. Canchois, at Andelys, in France, though it has been generally looked upon as a native of Japan. Whatever its origin, it is a beautiful little shrub, of a strictly pyramidal shape, with short sturdy branches clothed with peculiar bluish-grey foliage.

The position best suited for most of the *Retinosporas* is where they will be somewhat sheltered from strong winds, and where the soil is loamy and moist at all seasons. On chalky or gravelly soils they are not seen to so great an advantage, but as many of them are small, should the soil be unsuitable, it can be remedied by supplying some more congenial compost immediately around the roots. The golden-leaved forms are all richer in colour where well exposed to the sun, provided always the roots are not parched up. I have seen some bright examples on the Sussex Downs, the clear atmosphere no doubt tending to bring about this result.

Propagation of the *Retinospora* is nearly always carried out by cuttings, none of them being particularly difficult to strike, while some members of the genus are among the most readily propagated of all Conifers in this manner. Those forms in which only the young foliage is developed, such as *ericoides* and *squarrosa*, are the easiest to strike, while those in which the branchlets are clothed with small scale-like leaves closely adpressed to the stem, as in *R. obtusa*, are the most difficult. This feature may be noticed in several of the allied genera, such as *Juniperus*, *Biota*, and *Thuja*, the members of which when raised from seed first produce long needle-like leaves, totally distinct from the mature foliage, which is small and scale-like. Now if cuttings are formed of these young shoots, they strike root more quickly than those clothed with the mature foliage, even though both are taken from the same plant and given the same treatment.

THE LUCOMBE OAK.

(*QUERCUS LUCOMBEANA*.)

THREE desirable qualities—graceful habit, rapidity of growth, and sub-evergreen nature—render the *Lucombe Oak* one of the most valuable trees in the section to which it belongs. Just now the differences between it and either the *Turkey* or our native *Oak* are very distinct, the latter being leafless and bare, while the former almost reminds one of a giant specimen of the favoured and valuable *Evergreen Oak* (*Q. Ilex*). Were it not for indulging in too long a name, I should have appended to the above the name *Cerris*, for the *Lucombe tree* is a seedling between the *Turkey* (*Q. Cerris*) and the *Cork Oak* (*Q. Suber*), but partaking of the nature of the former in a very marked and characteristic way. The leaves remain on the tree for the most part of the winter, indeed in not a few instances the whole winter through, and this of itself in so tall-growing and majestic an *Oak* renders it of peculiar interest and of special value.

It is a tree of unusually rapid growth, specimens of 80 feet in height and girthing from 8 feet to fully 10 feet in the stem having attained to these dimensions in little over forty years. The stem in nine cases out of ten is clean and well built, no rambling, unwieldy branches being present, while the bark is rather rough, and the general contour of the tree is slightly spiry, but not to such an extent as to render it stiff and inharmonious with our general woodland subjects. For planting as a standard tree and away from any other, the *Lucombe Oak*, like the *Cornish Elm*, is well suited, its neat and informal habit of growth rendering it a favourite with planters.

For this handsome and valuable *Oak* we are indebted to a nurseryman (Mr. *Lucombe*) at Exeter, who raised it about the year 1762, and who, seeing its useful qualities, propagated it extensively. From the *Lucombe Oak* has been raised quite a set of semi-evergreen varieties, two of which, at least, are worthy of a special note. *Q. Lucombeana crispa* and *Q. Lucombeana suberosa* are certainly very distinct and

highly ornamental trees, both having thick, dark green leaves, which remain on the trees until the young ones take their place, and corky bark of considerable thickness.

As regards hardihood, I should say, in judging from specimens here, that the *Lucombe Oak* can quite hold its own even with our native species, but as regards the amount of shelter it affords it is far ahead of that tree, the stout, leathery, almost evergreen leaves giving it an advantage in that way that is certainly a well-marked and peculiar characteristic. Being readily enough procured, for it is offered in our principal nursery lists, so distinct and useful a tree as the *Lucombe Oak* should be planted largely, and there is little fear, be the situation exposed or sheltered, of its growing freely and soon becoming a conspicuous object in the position where it is placed.

Southern England can boast of not a few large and well-grown specimens of the *Lucombe Oak*, the original trees having in all probability been disseminated in that quarter. Around London in particular I have noted many goodly trees of from 70 feet to 80 feet in height, the boles being clean and straight and the heads neat and bushy. On the roadside near Bromley grows a fine tree of the *Lucombe Oak*, it being fully 73 feet high, and with abundantly-produced thick, leathery, dark green leaves. Growing as it is in company with several equally fine trees of the *Turkey* and *English Oak*, the semi-evergreen appearance is well set forth, while the tall spiral habit and rather tough corky bark render it still more distinct and imposing.

A. D. WEBSTER.

AMERICAN NOTES.

MAGNOLIA GRANDIFLORA is not only the most beautiful tree of our Atlantic forests, but it is one of the most beautiful known anywhere. Its comparatively restricted range—for it grows naturally only in a narrow belt of country on the South Atlantic and Gulf coasts—might be used as an argument against the adoption of this *Magnolia* as the national flower. *Magnolias*, moreover, are not American exclusively, and there are rather more species in Eastern Asia than in America, where, with a single exception (*Magnolia glauca*), they are confined to the Southern States and to Mexico. The range of *Kalmia*—an exclusively North American genus—is wider than that of all our *Magnolias*, being found from Canada to Texas; and it is certainly much better known to the great mass of the American people than any *Magnolia*. The objection which can be made to it as a national flower is that it is not found in the Rocky Mountains or in any part of the country west of them.

GARDENERS rarely select herbaceous plants on account of the autumn colours of their foliage, and there are not many plants which belong to this class which are distinguished in this particular. A notable exception is the Japanese *Lysimachia clethroides*, the leaves of which are coloured during the first ten days of November bright orange and scarlet. This is a handsome and a perfectly hardy plant, well worth a place, too, in the garden for its long, one-sided, curved spikes of white flowers, which are nearly half an inch across. It grows to a height of 2 feet to 3 feet, and its only drawback is that it grows too vigorously and spreads too rapidly by its underground stems. It is not easy to eradicate it from a garden when it is once fairly established.

ALL the monstrosities in the way of "floral decorations" with which our pleasure grounds are deformed, we too commonly credit to the gardener in charge, forgetting that he is employed by others, and may possibly but execute their definite bidings. According to a letter in the *American Architect and Building News*, great injustice is done to one executive at least. Speaking of Jackson Park, he says:—

Here Garfield, made entirely of Cacti, reposed one

year; here the lamented Jumbo, made of exactly the same material as the President, bristles each summer; and not far off, a gentleman on a bicycle, a loving couple in a boat, a sun-dial, a calendar, &c., bloom and flourish. The head gardener has very recently published a protest in a paper against these abominations, but how can he dispense with them when the park commissioners insist on having them?

Undoubtedly the same influences control many other parks all over the country, and it is time that the gardener should be relieved of a portion of the obloquy and that the public should be told where the responsibility rests.

ROBERT DOUGLAS & SONS, of Waukegan, Illinois, have just signed a contract with Mr. George Vanderbilt to make a plantation of trees on his estate near Asheville, in North Carolina. About 1000 acres are to be planted eventually, although the present contract is for not less than 300 acres, to be planted within twenty-four months. Twelve hundred trees are planted to the acre, the planters agreeing to cultivate them during two years, and to deliver at the end of that time not less than 1100 trees to the acre. White Pines (*Pinus Strobus*) are to be planted principally, with four per cent. of Douglas Fir, as an experiment, and a few deciduous trees will be mixed through the Conifers. Plants from 12 inches to 18 inches high will be used. Mr. Douglas proposes to plant fifty or a hundred acres this autumn for the purpose of testing the possibility of late autumn planting. Mr. Vanderbilt's experiment is an important one, and will be watched with interest. This is without doubt the first attempt at tree planting on so large a scale which has been made in the Southern States.

ABIES SUBALPINA, a native of the forests of the Rocky Mountains, where it is found growing only at high elevations, still remains one of the rarest of the American Conifers in cultivation. It may interest the cultivators of such plants to know that a considerable stock of well-grown young specimens of this species can be found in Mr. John Waterer's nursery, Bagshot, England.

It is not, perhaps, generally known that *Parrotia persica*, a tall shrub from the Orient, related to our Witch Hazel, is perfectly hardy in the Northern States. This plant has long been valued in European gardens for the brilliant yellow tints the foliage assumes in winter, and in this country, even where bright-coloured autumn foliage is the rule rather than the exception, *Parrotia* is well worth cultivating for the display of colour it makes during the first week of November. There is a second species, *P. Jacquemontiana*, a native of Cashmere, which has probably not been introduced into the United States.

MR. S. B. PARSONS writes that no shrub on his grounds excels our native *Itea virginica* in the splendour of its autumn colours. Even now, after the leaves have fallen from nearly every other shrub, they are still abundant on the *Itea*, and of a solid crimson colour. This shrub also has the merit of blooming in late June and July after the mass of shrubs have passed their season of flowers.

—Garden and Forest.

Hypericum Moserianum.—M. André describes in a recent number of the *Revue Horticole* the new hybrid, *Hypericum Moserianum*, which attracted much attention this summer at the Paris Exhibition, where it was one of the most interesting of the newer hardy plants shown. It was obtained by M. Moser, of Versailles, by crossing *Hypericum patulum* with *H. calycinum*. The hybrid unites the qualities of the two parents and is considered superior to them both. It is a shrub 3 feet to 4½ feet high, with numerous upright branches gracefully arching above the middle. The leaves are dark green above, paler and glaucous on the lower surface, and from 1 inch to 2 inches long by half an inch wide. The inflorescence is terminal, simple, or with three flowers which are each an inch across, with a spreading, slightly cup-shaped corolla, of bright, clear yellow, concave petals, and purple stamens. The hybrid might be described as a tall-growing, large-flowered *H. patulum*, resembling *H. calycinum* in the size of its flowers and in the texture and arrangement of the foliage. *H. Moserianum*, if it proves hardy in this country, as there is every reason to believe that it may, will make an interesting and valuable addition to our list of hardy summer-blooming shrubs.

ORCHIDS.

W. H. GOWER.

DECIDUOUS CALANTHES.

If anyone were to ask my opinion as to which was the most useful and beautiful of the hybrid Orchids yet obtained in our gardens, I should certainly vote for *Calanthe Veitchi*. Its bright rosy flowers are superb, and the time of year at which they appear adds materially to their charm. I believe nearly all Orchid growers would also agree with me in this matter. Yet what can now be said for a large batch of seedlings raised by Sir Trevor Lawrence, and now flowering in one of the Orchid houses at Burford Lodge? They are extremely rich and beautiful, and I expect, if Mr. White is successful in their culture during the next season, to see them magnificent. I do not mean to say that *C. Veitchi* must stand out of the collection, for its beauty can never be disputed, but several of Sir Trevor's seedlings are superior to it in richness of colour. Not knowing fully the history of these plants, I must be content at present to call them English hybrids only, and will endeavour to describe a few of them. *C. porphyrea* is a form that is conspicuous for colour. The flowers are large and of good shape; the sepals and petals are of a beautifully shaded deep purple, lip somewhat similar in colour, dotted, passing into pale yellow towards the base. *C. burfordiensis* is another very highly-coloured form, being of a soft, but deep crimson, shaded with purple. *C. Veitchi splendens* bears a very large flower of a deep, rich, rosy crimson, with a white eye. *C. rosea* is one of the most lovely light forms, the flowers very large, the sepals and petals soft satiny rose, lip large and broad, slightly paler than the petals, passing into white in the eye, where it is tinged with yellow. *C. Veitchi nivea* is a white flower with a stain of yellow in the throat, whilst *C. Veitchi lactea* is a pure white form with broad full lip, different in shape to *nivea*, and having but a faint tinge of lemon colour in the eye; this is a great beauty. *C. bella* is a superb flower, large and broad, with a broad flat lip; the dorsal sepal and the petals are rosy-crimson, the lateral sepals soft flesh colour; lip rosy-pink in front, paler in the eye, whilst one form which is yet unnamed is a great beauty, being large, of a creamy-white, with a tinge of flesh colour in the eye. These and many others present a grand display, which is well diversified, the light-coloured flowers being admirably set off by those of a deeper hue. I would strongly urge growers of these *Calanthes* to endeavour to obtain these white and light-coloured forms, as they serve to make a far more interesting and brilliant display.

Catasetum Bungei.—I have from a reader, signing himself "W. L. No. 9," a spike of flowers, which are very curious. He says it was bought for the above-named species, and it was bought for what it is, only it has produced a spike of flowers which have been asserted to be the female flowers of this species, but let them be what they may, these flowers are produced by *C. Bungei*. I do not know if only some plants produce these flowers, but I think that is not the case. I know that I recently saw a plant with a separate spike of each kind of flower from the same bulb, and I have seen the two flowers on the same spike, and "W. L.'s" plant next year may produce a spike or spikes of blooms of the much-coveted

type. I should be glad to know which flowers are produced. When it has finished its growth, remove it to a cooler temperature, but not too cold, and keep it quite dry until spring, when it should have the old soil shaken away and repotted, and then placed in strong heat.—W. H. G.

Odontoglossum Londeboroughianum.—The locality for this species is not recorded, but it is said to grow in a district where in the day the temperature is very high, but falls very low at night. Although a large quantity of plants was introduced, it is very seldom seen. I lately saw this species flowering in Sir Trevor Lawrence's garden at Burford Lodge. It is a fine strong-growing plant, with somewhat of a straggling habit, and a long spike bearing large yellow flowers much resembling those of an *Oncidium*. It is a long time now since I had this plant to grow, but I used to find that it grew well when exposed in a sunny spot in the cool house.—G.

Cattleya O'Brieniana.—This is a singular, very pretty, and distinct species, now flowering with Mr. Sander at St. Albans. By its growth, as Mr. Sander says, "I thought we had an importation of *Lælia Jongheana*, but as its flowers opened it appeared to be coming like *Cattleya Harrisoniæ*; but now when open I find it is quite a distinct plant." The sepals and petals are satiny rose, the petals standing erect, very different to those of the *Cattleya* just named; lip three-lobed, the side lobes very large, spreading in front, white; front lobe small, streaked in front with lines of magenta, between which and the column is a small patch of lemon colour. It comes from Brazil.—G.

Maaddevallia muscosa.—This exceedingly curious species is now flowering in the Burford Lodge collection, and it is at once one of the most curious and beautiful species I know. I have frequently been told of this plant by its discoverer, Mr. Shuttleworth, but had never before had an opportunity of investigating its structure and the sensitiveness of the lip. It is not a showy species, its flowers being less than 1 inch across, the triangular sepals being each furnished with a slender tail, which is nearly an inch long and terete; the colour is a soft clear yellow; the lip, which is the curious part of the flower, is prominent, lengthened out, and somewhat tongue-shaped; it is clear yellow, having a marginal border in front of deep velvety maroon-purple. This little lip when an insect or anything alights upon it immediately closes up tight to the column. It is a most singular and beautiful species from New Grenada.

Miltonia Warscewiczii.—This is one of the plants discovered by the veteran collector whose name it bears. We had heard of this species frequently, but, unfortunately, it was only flowered for the first time in this country some fourteen years ago, and after *M. vexillaria*, so that it had a rival species much finer than it to contend with. The plant in habit has much in common with *M. vexillaria*. The flowers are of much the same shape, but smaller than those of *M. vexillaria*; these are white, saving a blotch of pale rosy-purple at the base. It is flowering in great profusion with Mr. Sander at St. Albans at present, and the blooms make a good show, especially as neither of its relatives, *M. Roezli*, *M. vexillaria*, or *M. Phalaenopsis*, are in bloom at the same time. If it continues to flower at this season it will be worthy of cultivation. When seen flowering with *M. vexillaria* its inferiority is quite clear. It is a native of the mountains of Costa Rica.—W. G.

Phalaenopsis Stuartiana (C. M.).—The flowers you send are certainly those of a good form of this species. I am not prepared to say the plant is a variety of *P. Schilleriana*, although from the leaf markings it would appear to come near to it, but you may observe a peculiarity in these markings, and that is, although they are plain and distinct enough when the leaf, or leaves, are young, they fade away as the leaves become aged, and a plain green surface results, whilst in *P. Schilleriana* the variegation is permanent. The flowers certainly bring it into the same set as the last-named plant,

having the front part of the lip divided like a black Cock's-tail. The growth on the old spike should not be cut away; peg it down on to the surface of the pot; it will form a young plant, and being such a fine variety it is particularly desirable to reproduce the stock. Your practice appears to be all right. I am fully persuaded there is nothing like cleanliness and sweet fresh air for these plants, but at the same time there must be a certain amount of care exercised in the admission of air, not to allow it to come at once upon the plants, neither must it be admitted in sufficient quantity to dry up the moisture in the house.—W. H. G.

Cœlogyne Rossiana.—This is the name of a pretty plant now flowering at Burford Lodge. It well deserves cultivation for its bright and cheerful flowers, which, when freshly cut, have a vile odour. After having been cut for a day, this entirely passes away. The sepals are creamy-white, petals narrower and of the same colour; lip three-lobed, the side lobes large, erect, standing up beside the column, but not enclosing it; lip yellowish-white on the disc, bordered with tawny-brown. The plant appears to be a free grower, with somewhat small, ovate, compressed pseudo-bulbs, which bear a pair of narrow, deep green leaves on the summit. It is said to come from the Philippines.

Masdevallia cucullata.—This is another very fine species now flowering in Sir Trevor Lawrence's garden. It is singular, inasmuch as it makes a distinct stem some 2 inches in height before forming a leaf. The leaves are each about 9 inches long, oblong, thick, and leathery in texture, and deep green. The scape is produced from the base of the leaf and upon the top of the stem; the flowers are large, each measuring some $3\frac{1}{2}$ inches across from tip to tip of the tails; the sepals form a tube, spread out in front, and are of an intense deep maroon-purple. It is a fine ornamental species, which was first introduced to this country in a living state by Mr. Shuttleworth, of Clapham Park Road, who tells me that it is known by the name of The Widow in its native country, which is in New Grenada, in the vicinity of Bogota.—W. G.

Cypripedium pavoninum.—This is a cross between *C. Boxalli* and *C. venustum*. It has plain green leaves, which are mottled with dark purple at the base on the outside; the flowers are large and handsome, the dorsal sepal green, with a white border, and it is also much spotted with brownish-purple, lower sepal small, greenish-white, veined with green; petals broad, bronzy-brown at the tips, with a dark central line, the basal portion yellow, with large brown spots; lip similar in shape to that of the last-named parent, of a brown hue above, tinged with yellow beneath. This very pretty form is now flowering in the Burford Lodge collection.—H.

SHORT NOTES.—ORCHIDS.

Cattleya guttata.—"H. P." sends some flowers of *Cattleya guttata*, saying his plant is bearing sixty-three flowers upon six spikes. The variety is very good, and with that number of blooms the specimen must be charming. This is a Brazilian plant, which used to be more grown in my young days among Orchids than it is at present. It likes light and warmth.—H.

Cypripedium Spicerianum nanum.—This is a very pretty form now flowering in Mr. Howard's collection, The Grove, Teddington, and I am told it came from the late Mr. Peacock's garden at Hammersmith. It differs from the type in being destitute of the green patch at the base of the dorsal sepal, and it is not reflexed, as in the normal form of the plant. It is a very elegant variety.—W.

Cypripedium selligerum.—A flower of an

excellent form of this plant is just to hand from Mr. Howard's garden, The Grove, Teddington. Mr. Osborn, the gardener, says it was bought for *C. euryandum*, but it is certainly a very fine form of the variety named above; it has all the characteristic markings of that form, and its deflexed petals are upwards of $3\frac{1}{2}$ inches long.—W.

STOVE AND GREENHOUSE.

FITTONIAS.

THOSE who do not know these plants may judge by our illustration how beautiful the foliage is, and when I say they may be grown thus successfully in the shade, their value as undergrowth may at once be recognised. These plants do not object to sunlight, but they prefer shade and moisture, and I have had broad patches of them on rockwork in the fernery where they are very ornamental. Fittonias may be used for surfacing large pots, bare places in the stove, be it on the ground or the stage. When

which used only a few years ago to be grown under the name of *Gymnostachyums*, are not nearly so much grown as they were, nor as they deserve to be; indeed very many species of this order (*Acanthaceæ*) which used to be well grown for winter flowering appear to be quite forgotten. Three kinds of Fittonias are well deserving attention from everyone requiring free-growing, handsome-leaved trailing plants in their stoves.

F. ARGYRONEURA, the subject of our illustration, is the most compact growing kind in the genus. The leaves are some 3 inches or 4 inches long; the ground colour on the surface is a bright and shining deep green, over which is spread a charming network of silvery veins.

F. PEARCEI is a plant of similar habit to the preceding, and of about the same size, the ground colour being very bright, but light green, and over this is a lovely network of bright carmine veins, which renders it an exquisite companion for the first-named species.

F. VERSCHAFFELTI, not quite so close in habit as those already named, but about the same size or a



Fittonia argyroneura.

planted as edgings for stages Fittonias are very effective, their bright-coloured leaves being very pleasing. If grown for covering large pots or similar positions, the plants should not be allowed to flower, as the blooms are not showy, and they exhaust the plants very much. Fittonias can withstand pinching back with impunity, and, therefore, when the blooms push up above the foliage they should be removed and the growths kept pinched back, so as to make side shoots. Do not allow them to grow long and leave patches of the soil bare. When growing on the rockwork in the fernery some of the plants should be allowed to flower. Fittonias thrive best in a mixture of peat and loam made sandy, and they like a liberal allowance of water both to their roots as well as overhead, and, therefore, in whatever position they are placed, the drainage must be perfectly open and free; indeed, I consider this of the greatest importance to their well-being, for if the drainage is good, anything may be done with them, and they will grow vigorously. These plants,

little larger, has, like the last named, the ground colour bright green, over which is a charming network of deep red. But the kind which I specially commend for planting on rockwork is

F. GIGANTEA.—This is a plant double the size of any here named, and of a more rambling habit. It has a very robust constitution, and its large leaves are deep green crested over with veins of rose colour. All are natives of South America, from Brazil to Peru.

W. H. G.

Anthurium Princess Clementine.—This is a beautiful form now flowering in the Burford Lodge collection. It is apparently a hybrid from *A. Andreanum*, but not of so strong a habit. The spathe is large and firm, somewhat round, and of the purest white. Another plant in the same collection, a seedling without a name, has a spathe of much the same size and substance, but of a soft rosy salmon colour. What the form exhibited by Mr. B. S. Williams a short time ago can be I cannot imagine. I see it is described by a contemporary as having the "dorsal sepal rose, shading to white, the petals bright rose and the labellum dull rose,"

This must be truly a wonderful flower, almost akin to one of our Christmas pictures, specimens of which are now exhibited in which *Anthurium Scherzerianum* is represented to be a flower the size and shape of a Snake's-head.—W. H. G.

BLUE CHINESE PRIMULAS.

PERHAPS it is because the autumn months do not favour deep and decided tints of colour in Chinese Primulas, but so far as I have hitherto seen this autumn in any blue forms of the Chinese Primrose, I failed to notice any advance towards a real blue. Coloured illustrations afford us brilliant shades of blue, but so far they are confined to them. When the novel and welcome lavender tint first put in an appearance I thought growers had then advanced some way towards a real blue *Primula sinensis*. I am beginning to think that by merely seedling from the best blues, and so breeding in and in, raisers are not likely to reach this desirable result.

I was much struck by a remark made by Mr. Norman Davis in the paper on *Chrysanthemum* sports he read at the National Chrysanthemum Society's conference at the Royal Aquarium in January last. He thinks a blue *Chrysanthemum* somewhat problematical. He thinks if a blue is to be obtained it will be from the ordinary red or purple *Primula*, because, as he states, the colours red and purple are really the same; but they are found more or less in the *Chrysanthemum*, and even in the Chinese Primrose associated with white or yellow ground colours. The white reflects the purple, but when associated with yellow, purple is turned to red; and, as he observes, neither red nor purple are produced as ground colours of themselves. In reference to the Chinese Primrose, Mr. Davis observes that our blues are really lavenders, and lavender is but a variation from a white. "There is none of the force from which a blue can be produced, and I should say there is far more chance of obtaining it from the original colour, and the further you get away from it the less chance there is. Blue is not obtained by a mixture, but is one of the original colours." This is the conclusion come to by Mr. Davis.

The realisation of a blue Rose and a blue Dahlia has been the dream of the florist. We have Dahlias and Roses both with distinct tints of purple, but they are almost invariably found on red grounds. Whether a flower like Ovid can ever produce a really blue Dahlia remotely through several generations remains to be seen. Taking it altogether, it is one of the varieties that develops a good shade of purple, and the same may be said of Purple King.

I think it highly probable Mr. Davis's advice is worth following, and attention should now be turned to developing a blue *Primula* from the original red or purple. It is well worth the trouble of some enterprising florist to go back to this, and endeavour to work onwards to the end. It may not come within the range of possibilities, but no one can say absolutely it does not.

The above is written not to dogmatise, but to arouse discussion, and I trust some of those who are so zealously and laudably striving to produce a blue Chinese Primrose will not fail to impart any store of knowledge in reference to the matter they have been able to accumulate. R. D.

Arum Lilies.—I am inclined to think with "R. C. H." that, for early forcing, plants kept in pots all through the summer are best. Every flowering plant responds best to an artificial temperature when the pots are well filled with roots, and I fail to see why Arums should form an exception to the rule. Many suppose that they will not come strong if they are not planted out to make their growth; but this is an error. I saw some veritable giants in a London market garden that had not been disturbed for several years. I have grown and seen many thousands of Arums, but I can safely say that until I saw those plants I did not know the degree of vigour to which they can be grown. They were 5 feet high and with enormous leaves; what the blooms could be like I

can only imagine. I should like to have seen them in flower, but they were just over. They were, I think, in 16-inch pots. I have, however, seen blooms of the highest quality produced by plants that had been several years in 8-inch pots, and this is the size of pot I should recommend, as it is large enough to allow of a vigorous development. It stands to reason that Arums grown in this way require much greater attention in the way of watering than when planted out, and unless they are well cared for in this respect the quality of the blooms will be poor. The *Arum Lily* is naturally an aquatic, and no flowering plant subjected to pot culture will take so much water. It is the difficulty of meeting their needs in this respect that has originated the planting out for the summer. It is for the grower to determine which method will best suit him. Planting out involves the double operation of putting the plants into the ground and the subsequent lifting and potting up with more care in watering than is necessary with established plants, but there is the compensating advantage, which is obviously a great one, of diminished labour in watering through the hot months. In the case of plants that are to bloom in early spring I should prefer planting out, but to have good blooms at an earlier period, retaining the plants in pots is I think the best plan. The extra labour is, I am of opinion, repaid by better results. Arums, owing mainly to the great demand for white flowers at harvest festivals and church decorations generally, are in demand at a much earlier period than formerly, and to get them a couple of months before Christmas some judgment is required. This is generally effected by market growers by taking the side shoots that have not bloomed and giving them an early start in spring, shifting them on and getting them well advanced in growth by the time the main crop of bloom comes to an end. They go into the open for a couple of months and are brought indoors early, getting a regular temperature in autumn.—J. C. B.

WORK IN PLANT HOUSES.

STOVE PLANTS, WINTER TEMPERATURE FOR.—The temperature given to the warmest section of stove plants through the winter varies according to the cultivator. Stove plants, especially those that come from the hottest parts of the world, are never wholly at rest, except that under cultivation growth is much slower during that which is to them their winter season than in the summer. *Ixoras*, *Dipladenias*, *Gardenias*, and others that produce their flowers from young, half-ripened shoots maintain a healthy, vigorous condition for an indefinite time without the growth ever being at rest. Treated in this way, with enough warmth to keep them moving slowly all through the winter months, the plants make much more growth, and produce proportionately more bloom than when the temperature is so far reduced as to keep them quite at rest. Where the cool treatment is prolonged during the months of November, December, January, and February in the way that some look upon as necessary, the spring is far advanced before the growth can be induced to move freely, even with the aid of a high temperature. In determining the heat that is to be used, it is well to be guided by the character of the house in which the plants are kept. In dark, old-fashioned structures where, in addition to the limited amount of light admitted, the plants are stood far from the glass, it would be a mistake to maintain a heat that would induce growth, as the wood and leaves made under such conditions are invariably weak. In houses that are so constructed as to admit the full amount of light, and where there are no outside objects, such as trees, or other buildings, to obstruct it, and there is the means of keeping the plants well up to the roof, a night temperature of 68° may be given with advantage, excepting when there happens to be severe frost. In dark, badly constructed houses it will be advisable to allow 8° less until the beginning of February, when it is better to raise the heat a little than to continue the cool treatment. In the daytime the thermometer may be allowed to rise more or less in accordance with the weather. When it is dull and cloudy the heat must be less than on

bright sunny days. Such things as *Bougainvilleas* that require to be kept quite at rest for a considerable time in winter would continue to grow with the amount of warmth above named; to stop this the soil must be kept quite dry until the plants are to be again started.

ALLAMANDAS.—The usual course is to give these plants a complete rest, either during the last months of the year or longer, by withholding water altogether; yet this is not absolutely necessary, as they will do with their roots kept moderately moist, in which case the growth in a warm stove will go on moving slowly.

TABERNÆMONTANAS.—The bloom of the double variety is amongst the purest of all white flowers, and on that account is used for bouquets, sprays, and button-holes. The plants should be kept with the warmest division of stove subjects, and must have enough water to prevent the leaves suffering. In a temperature of this description they will bloom earlier in the spring than when allowed to be cooler in the winter.

APHELANDRA ROEZLI.—This fine plant does well when grown in 4-inch or 5-inch pots, and in this way it can be used in places where larger specimens would not answer. The plants should now be kept in the warm part of the stove with plenty of light. Let the soil be moderately moist.

APHELANDRA CRISTATA and other summer or autumn-blooming kinds should now have the soil in a somewhat drier state than is good for the last named sort, as the plants will be comparatively at rest for the next eight or ten weeks.

POINSETTIAS.—As the plants which are intended to come in the earliest produce their bracts, keep them at the warmest end of the stove, with their tops as near the roof of the house as they can be got. Plants that are intended to flower later must be kept cooler; by this means a succession of blooms can be had that will last well on to the end of February. The smallest plants should be chosen for this; and though they should be kept cooler than those that are brought in first, care must be taken that they are not chilled by too low a temperature, as if this happens the bloom will turn mouldy and fall off. A temperature in the night of 55° is about the right heat. If kept at this until after Christmas the bracts will come on slowly, and at the same time will have more staying powers in them than such as are grown more quickly. Under this cool treatment water must be used with caution; if the soil is kept as moist as the roots would bear it to be when kept warmer they will be likely to perish, in which case the blooms would fail altogether.

LILAC FORCING.—Forced Lilac used to appear when the winter was somewhat advanced; now those who grow it for market have it during the autumn, whilst yet the plants out of doors have not shed their leaves. In private gardens it is better to have each flower in at its proper season. It is time enough now when the leaves have fallen naturally to begin forcing. Lilac is an exception to most hardy plants in the amount of heat it will bear, and also the condition the bloom is in after being forced in the dark in the manner that is generally done, and which would cause the flowers of other plants to be so poor and devoid of substance as to be useless. As known to the comparatively few who force Lilac, the flowers of the dark-coloured varieties come white when the plants are forced in the dark. So treated even the bloom of the white varieties comes purer in colour. A high temperature, such as a continuous heat of 80° or 85°, also tends to make the flowers of the dark varieties whiter. There are comparatively few gardens where the means exist for giving so high a temperature as the above, or in which there is a place where the forcing can be carried out in total darkness. Still there is no need on account of these drawbacks to forego the use of a plant which has few equals amongst hardy subjects for the production of winter flowers. With an ordinary stove heat a supply of flowers can be had. Where there is a stove in which there is a centre stage some of the space under this can be temporarily covered in

so as to exclude light; in like manner part of a pit intended to hold fermenting matter can be similarly used. All that is necessary is to cover the roots of the plants with soil; the tops may be packed much closer together than plants forced in the ordinary way would bear. Neither is it requisite that they should stand erect if the head room is deficient. The roots and the tops must be kept fairly moist. By putting in a few plants at short intervals a continuous supply of bloom can be kept up.

POTTING HARDY SHRUBS FOR FORCING.—All hardy shrubs that are intended for forcing should be now taken up and potted, as if the work is longer delayed hard weather may interfere with lifting them. In all cases the deciduous kinds that are to be used in this way should have been previously prepared by frequent removal, so as to keep them well furnished with a compact mass of roots that will admit of their being got into pots that are not too large. There are a few things which bloom naturally during the winter and spring, such as *Choisya ternata*, *Laurustinus*, *Andromeda floribunda* and *A. japonica*, with some of the earliest-blooming *Rhododendrons* that deserve especial attention, as they will bloom with no more warmth than is necessary to keep them from being frozen; consequently when wanted early slight forcing is sufficient to induce the flowers to open. The flowers of the two *Andromedas* named, and also those of the *Laurustinus*, come much whiter when opened under glass, especially when some heat is used, than they do in the open air. In using the plants mentioned for forcing, it often happens that a good portion of the roots is removed with the object of getting them into small pots. This should not be done, except where the wasteful course of throwing the plants away as soon as they have bloomed is followed, as when deprived of the best of their feeding fibres the plants take longer to recover from the effects of flowering under unnatural conditions. White or light-coloured *Rhododendrons* that have attained more size than the small plants usually forced, are effective for use in large conservatories where they can be stood whilst in bloom in dark corners, where greenhouse plants of value would suffer too much to admit of their being so used. For *Rhododendrons* of this description shallow round baskets may with advantage be used in place of pots. Amongst deciduous hardy plants *Azalea mollis* and the Ghent varieties hold a first place. The *mollis* varieties may be said to be better adapted for flowering under glass than in the open air, as their natural habit of blooming in spring before the frosts are over often causes the flowers to be spoilt. Amongst the various plants, tender or hardy, that either bloom naturally or admit of being forced, there are none that give so many shades of the now fashionable colours as these *mollis* varieties. In forcing the plants they must not be hurried in too much heat; if this is done the flowers will be short-lived. The Ghent kinds, of which there are now a number of varieties little inferior in form to those of some of the Indian sorts, are equally deserving of attention; in them there are many with flowers much higher in colour than in the *mollis* varieties, on which account, in addition to their agreeable perfume, they are likely to remain popular. The old *Deutzia gracilis* and the double Chinese Plum (*Prunus sinensis*) are profuse bloomers with the purest of white flowers, that are alike suitable for cutting as the plants are for ordinary decoration. T. B.

SHORT NOTES.—STOVE AND GREENHOUSE.

Solanum jasminoides.—Last spring the tops of this reached the glass on the roof of a conservatory, and early in the summer the points pushed out through some chimneys in the roof, became fixed to a chimney 5 yards away, and twined round this in a natural, but pretty manner. It is there still, and at the present date (November 25) is bearing many clusters of its pure white delicate flowers, with plenty of head-room and little artificial training. This is one of the most pleasing of all greenhouse climbers.—J. MUR, *Marjonn*.

Salvia leucantha.—This is not so showy as *S. splendens*, *Pitcheri*, and *Bethelli*, yet it is very distinct, and a well-flowered specimen of it proves that

the *Salvia* in question is well worth a place in the greenhouse at this season of the year. It forms a free, much-branched plant of a somewhat open character with curious woolly stems, and this is particularly noticeable in the case of the long flower-spike. The most showy part of the inflorescence is the calyx of the flower, while the pure white flowers which protrude therefrom do not remain long in perfection. It is a native of Mexico, from whence it was introduced in 1847, but it is now far from a common species. Like the rest of its class, this *Salvia* is of easy propagation and culture.—H. P.

KITCHEN GARDEN.

KITCHEN GARDEN NOTES.

TOMATOES.

RARELY have the Tomatoes grown against sunny open walls done such good service as they have this season. A considerable number of our plants were located in a very dry position, being sheltered from rainfall and winds by both the wall coping and forest trees at the back, and they were seldom moistened by dews. As a consequence scarcely any disease touched the heavy crops of late formed fruit, and which a comparatively mild autumn also favoured. Cut late in October and ripened on dry hurdles in a heated pit, they almost equalled the best house-grown fruit in point of quality, and the greater portion of them were sold at 8d. per lb. Another batch of plants grown against a low wall and more exposed to all weathers were a complete failure as far as the late crops were concerned, the fruit, though apparently sound, soon becoming badly diseased when placed in heat to ripen. The question arises whether it would not pay well to afford the Tomatoes grown against walls generally the benefit of some kind of coping or temporary glass covering. The glass especially would forward the crops considerably at the outset, and in the autumn or during a wet summer would be the means of keeping the foliage dry, and therefore in a disease-resisting state. If lights about 6 feet long were hinged to the walls, the lower end resting temporarily on a course of brick or even flower-pots, they could be taken off during a dry summer, and also be of the greatest service during the late autumn, winter, and spring months for the purpose of protecting Lettuces, Endive, Cauliflowers, and Broccoli either where they are fixed, or resting on turf walls, boards, or other temporary foundations. In the spring these lights would be equally valuable for forwarding salading, Cauliflowers, Potatoes, Peas, or other early crops. Some of the high front walls of forcing houses might well be covered with glass in the manner just indicated, these positions being exceptionally favourable to the production of very heavy crops of fruit, which only require to be kept dry to ripen properly. Many growers consider it necessary to stop the open-air plants beyond the second or third good cluster of fruit, but if late crops of fully-grown Tomatoes, and which I have shown to be the most valuable, are desired, or if abundance of green fruit are needed for the purpose of making into excellent pickle or preserves, then stopping is a decided mistake. Better by far let the plants form four, five, or even six clusters of fruit if they will, for all ought to be turned to good account. Tomatoes against the high walls of unheated Peach houses are also holding out remarkably well this season, and we have a quantity of fruit that only require to be placed in heat for a few days to ripen perfectly. These will supplement the crops growing on young plants in a forcing house, and be most acceptable for the mid-winter parties. Ham Green Favourite is succeeding admirably, and must eventually become the favourite for both early and late forcing. A well-selected stock of Large Red under precisely the same treatment does not set so freely, the fruit being much lighter and not so good in quality. A very high temperature is prejudicial to a good set, and we leave air on, unless the weather is colder than usual, both night and day. Directly the flowers are fully expanded they ought, when dry,

to be carefully fertilised with the aid of a camel's-hair brush, this being the surest method of ensuring a good set. Nothing but a very dry atmosphere will prevent the rapid spread of fungoid diseases or those of a mildew-like character, and as this does not appear to disagree with the plants, it is also advisable to keep the house as dry as possible by way of a preventive measure. If the foliage unduly shades other plants growing underneath, there is no reason why it should not be freely thinned out, or at any rate shortened back somewhat. Any plants that have either failed to set a good crop or are nearly cleared of fruit may yet be advantageously retained, as these with very little trouble can be made to produce profitable crops next spring considerably earlier than can be obtained from young plants.

WEATHER CHANGES AND CONSEQUENT WORK.

The change from comparatively warm weather to the other extreme, though sudden, was not a day before it was wanted. A complete check has been given to vegetation generally, much of which was far too active to be long safe. Frosty weather, too, has the effect of stimulating much work that some seem to think ought not to be done at any other time. Seldom has the rainfall in November been so light, and we have taken advantage of this to wheel out as much manure as possible, no more harm being done by the wheeling than would have been the case if the ground was frozen hard. Heavy land or any that requires to be pulverised ought, as a rule, to be dug up roughly and early, a dry time being selected for this important work. No one should be allowed to trample on it when the surface is either wet from rainfall or is in a moist state after a thaw, as when in this state it binds badly, hard cold lumps either turning up or remaining unbroken whenever the ground is being prepared for cropping. Clayey land ought to be dug up roughly, no fine chopping of the spits being allowed. The more rough and exposed the ground, the greater the certainty of the frost penetrating to a good depth. When it penetrates through a lump of soil, it causes all the particles of moisture the latter contains to expand considerably, and when the thaw comes the particles of soil thus forcibly divided do not join together again, but, on the contrary, the lumps crumble down, a finely divided surface being the consequence. Supposing a variety of fine yet only slowly perishable materials, including ashes, lime rubbish, burnt rubbish, and charred earth or clay, leaf-soil, peat, spent tan and sand, have at different times been mixed with very clayey ground, these will prevent pulverisation being followed by a pasty, much saturated condition, but there are a few partial exceptions to this rule even. Instances can be given where, if early winter digging be resorted to, the ground becomes, long before cropping time arrives, of the consistency of bird-lime, and when this failing is discovered and sufficient correcting materials such as I have named are not available, digging ought to be delayed till near planting or sowing time. Many naturally light, free-working soils are also best left alone till the spring, as it is possible for these to become too finely divided, and if dug long before they are cropped, the surface may be found much too wet to work early and properly. It is a waste of manure to bury it early in light soils resting on a rapidly draining subsoil, but that is no reason why it should not be wheeled out in frosty weather. Good-sized heaps ought to be formed, but as exposure to all weathers is a wasteful proceeding, the various heaps should be surfaced over with soil obtained around them. The sharp hoar-frosts will most probably have the effect of causing the dilatory to prepare for more severe black frosts, and which, lasting much longer, are much more penetrating and destructive. If not already done, abundance of dry strawy litter, Bracken, or mats ought to be got in readiness for covering the sides and tops of frames containing salading or anything that will not withstand a severe frost, and also for covering Celery, Carrot beds, Artichokes, or other crops not in every case necessarily standing in need of protection, but more with the motive of being able to lift as many as are required any time during a spell of severe frost.

A light covering of litter afforded to clumps of Rhubarb will make a considerable difference to their earliness, and the same may be said of Sea-kale. Roots of both kinds may be lifted and stored in a cool shed ready for placing in heat at any time. Much of the pruning being completed, it is advisable to liberally dress the borders containing various hardy fruit trees with manure, or, better still, rough leaf-soil, and this being lightly forked in, a neater appearance will be presented and the ground be ready for surface crops when needed. Too much of this kind of work is frequently left till the busy spring time arrives. Pea stakes are a rather expensive item in many gardens, but if good Hazel is bought, these may be made to do duty for two seasons, some being bought or otherwise obtained every winter. These are the best for the taller growing varieties, and being duly stored under cover of an open-fronted shed, they can be shortened and prepared for early Peas and medium height varieties generally. Preparing Pea stakes is a wet weather job for the men, and another consists of sorting over the stores of Onions and Potatoes, the last-named being the most closely attended to, every pains being taken with those intended for planting next season. Seeds of Peas and Beans saved this autumn ought also to be sorted over and shelled if need be, and the unsound discarded. The Beans especially were somewhat late in ripening, and if shelled and placed together in deep boxes, the greater portion will be spoilt. They must be thoroughly dried, and not till they are quite hard and dry should they be packed away. Seeds generally keep best in canvas or other bags suspended in a living room. It is an old-fashioned plan, but a good one. W. I.

Defoliating Tomatoes.—There is a great difference of opinion on this point, I am aware, but I have never found any injurious effects result from it when carried out in a judicious manner; while, on the contrary, it is in some cases productive of much good by admitting light and air, not only between the plants themselves, but to inner rows, or to other things growing beneath them. I have seen plants that were placed rather closely and growing strongly quite smothering each other, and resulting in a bad attack of disease; whereas if the foliage had been judiciously shortened, the circulation of air and light would have kept them strong and healthy. I never cut off any leaves until the plants have gained a certain age and size, and then only the lower ones.—B. C. R.

Winter vegetables.—While agreeing with "S. D." regarding the excellence of Chou de Burghley as a winter vegetable, I cannot advise cultivators to abandon the growing of the useful Savoy. In most private gardens a good stock of this vegetable is essential, and private gardeners generally would not be allowed to discontinue the cultivation of the Savoy were they ever so inclined to do so. Savoys are much in request by French cooks. While I would endeavour to supply Chou de Burghley in abundance, I would not ignore Savoy growing. A good vegetable at present and onwards for weeks to come is Veitch's Protecting Broccoli. They are extra good at present, and I notice that Snow's Winter Broccoli will give supplies shortly. Autumn Giant and Walcheren Cauliflower being nearly over, successions of the kinds indicated will be of much service. The season now closing will be remembered as one of the best for vegetable growing for many years past, at least in this district.—T., *Stirlingshire*.

Stachys tuberifera.—I am well satisfied with the result of my first experience with this new esculent, and can thoroughly recommend it to all who have not hitherto given it a trial. I have no doubt there are many ways of serving it for table, and as it becomes better known we shall get a variety of recipes; it will, however, be found good enough for ordinary cookery plain boiled and served with a little gravy or butter. It evidently likes good land, as there was a marked difference in the bulk of the crop from a well-prepared border, and from a few dotted here and there amongst some bush Apples where the ground had not been deeply worked,

From the first-named spot there must have been in many cases nearly half a gallon of nice sized tubers to each plant, a convincing proof that it is likely to prove a profitable crop to the cottage gardener at any rate for home consumption. It ought to have a place to itself, as it will clearly be a troublesome customer to get rid of when once planted if it is, as I understand, quite hardy. As much has been written of late about common *versus* botanical names for flowers, it would be well to have an everyday name for *Stachys tuberifera*, as this is decidedly too jaw-breaking for the average kitchen man.—E. BURRELL.

I am not inclined to take to novelties when first brought under notice. In this case, however, I was tempted to try this new vegetable, as anything to make an additional change is acceptable where large demands have to be supplied daily. This new Chinese Artichoke is an acquisition. I have grown it three years, and it is so much esteemed here, that last year the whole of my stock was used up and I had to buy for planting the past spring. It is used as a second course vegetable. It is a useful ingredient in a mixed salad, very palatable as a pickle, and also a nice companion to the breakfast Radish. The growth is much about the same in different situations, but I find the yield much more in an open sunny quarter than on a shady and more sheltered one. I have lifted some plants with 130 tubers, 90 of which were large enough for any of the above-named purposes. It is as hardy as the Twitch Grass, and should be left in the ground as long as possible. The precaution should, however, be taken of covering the ground with litter and leaves, so that the roots may be lifted as required for use, or they may be lifted and stored in soil in a cool shed, but must not at any time be exposed for long, as they very soon wither.—A. EVANS, *Lythe Hill*.

SPAWNING MUSHROOMS.

It is well known that when vegetable seeds are bad and incapable of germinating, no amount of skill will produce a crop, and this applies emphatically to Mushroom spawn. Given good spawn and a crop can be obtained. Some growers of Mushrooms have very strongly advocated their production on open-air beds in winter and at all times. Very few instances of successful Mushroom culture in this way are either seen or heard of, and I can only conclude that this style of growing has given so little encouragement to those who have tried it, as neither to warrant them to extend it themselves nor recommend it to others. I am not in a position to point out the cause of their non-success, as hitherto the open-air beds here have been very uncertain. By giving a little protection, however, and growing them in sheds, the result has been all that could be wished for. I would not advise anyone to depend wholly on open-air beds for winter Mushrooms, but I can recommend all kinds of sheds and outhouses as most suitable places for growing them in. For some time past I have been cutting abundance of fine Mushrooms from a cool shed, and they do so well in these positions that I am surprised anyone should now go to the trouble or expense of applying artificial heat to his Mushroom houses. It is unnecessary, and may be given up forthwith without any deterioration to the coming crops. As I give considerable attention to Mushroom growing every winter, I am of opinion that in many cases the beds are not spawned at the proper time, and the crop is deficient in consequence of this. I have invariably noticed that the beds that bear in the shortest space most profusely and longest are those that were spawned when the temperature of the bed was from 90° to 100°, and the failures occurred in cases where the spawn was not inserted until the temperature of the material had declined from 80° downwards to 70°, and occasionally 65°, growers having been taught that it was very unsafe to spawn above 80°. They infer it will be safer still if lower, and an irreparable mistake is committed at the outset, which after-treatment cannot rectify. By spawning the bed

when the temperature is at 90° or thereabouts, the heat is retained for weeks or months, and an active bed is the immediate result. I attach more importance to spawning at a high temperature than to any other operation connected with Mushroom culture, and if by chance the temperature of one of our beds had fallen to 75° when we were about to spawn, I would rather pull it to pieces, add more material, and remake than spawn at that figure.

Morgan.

J. MUIR.

A good Beet.—On a recent visit to Dropmore I was particularly struck with the even growth of several lines of Beetroot, not a "rogue" in the lot, and the tops were as level as if they had been clipped. On inquiry as to the variety, Mr. Herrin informed me that he found it there, and that he had learnt from the men that the late veteran Philip Frost had grown only this variety for very many years, and had always saved his own seed. I had an opportunity of testing its quality, which was quite equal to its appearance. It is too good a Beet to be monopolised by one family, and Mr. Herrin would do well to act on this hint and let others share its excellences.—W. W.

GARDEN FLORA.

PLATE 730.

GARDEN TULIPS.

(WITH A COLOURED PLATE OF T. VITELLINA.*)

THE origin of the class of Tulips to which the coloured illustration belongs has always been a knotty point with botanists, and notwithstanding the immense popularity this genus has attained within recent years, we are apparently just as far from a solution as ever. Our predecessors are certainly not without blame, as it is simply impossible from the scraps of information they have left us to trace the origin of many of them with any certainty, more especially as the old books that show us so much in coloured drawings, well executed and altogether nice pictures, do not contain a trace of information that will help us, and in the majority of cases not even a garden name. I had occasion lately to turn over an old German book published early in the seventeenth century, and although it contains over 100 splendidly coloured drawings of all kinds of garden Tulips, I have been able to trace only one at present in cultivation. A few, such as *T. fulgens*, *elegans*, *retroflexa*, and several of doubtful origin, have long been known in gardens, and since this genus has become so popular in England others are cropping up. One naturally asks, Where are the new ones coming from? are they being raised on the Continent, or are they being picked up in old gardens? If the former is the case, then we have a clue, as *T. vitellina*, one of the most recent introductions, is quite as distinct and fixed in its characteristics as the long-tried *T. fulgens* and *T. elegans*. If they are really collected in old gardens, we are simply where we were. Whatever be their origin, *T. Gesneriana*, than which there is perhaps none more variable, is distinctly traceable, and their flowering so much earlier than is usual with that species would point to the possibility of *T. suaveolens*,

* Drawn for THE GARDEN by H. G. Moon in the Royal Gardens, Kew, May 12, 1889. Lithographed and printed by Guillaume Severyns.



TULIPA VITELLINA

the early Duc van Thol Tulip having also something to do with them. This latter Tulip, even as we know it, in its garden form is variable both in form and colour, and if we are to believe that the Tulip recently discovered in Asia Minor and distributed as the type *suaveolens* is the origin of all our early Tulips, then we may believe almost anything of this erratic genus. It is only recently that quite a number of undescribed Tulips was found in Central Asia, many or all of which were, with Dr. Regel's usual liberality, widely distributed in this country. Many of these are found to be extremely variable, note the score of named sorts sent out by a German firm, all of which were raised from *T. Greigi*. If this undoubted species provides us with such a variety in the first generation, what may we expect to see a dozen years hence. Some of these new Central Asian Tulips are not so very much unlike the class of Tulips referred to, and it may yet be that some of them at least have been here before and left their mark in the Tulips we are now so much puzzled with. I lately received a very charming form from an old garden in the midland counties, it having been there when the owner was a boy. The flower is very large, of beautiful form, the centre of each segment green with a border of dull crimson, the margins wavy and inclined to break up much in the way of those of the Parrot Tulip. It is apparently half way between *T. Gesneriana* and *viridiflora*, and may be a hybrid. When one begins to make suggestions like this, however, there is no end to it, as he might go through the entire genus, and make a similar statement about every third Tulip he met with. The subject of our present plate is nearest to *T. flava* of any I know, but altogether a more beautiful and serviceable garden plant. *T. flava*, though of a bright pleasing yellow, has not a well-shaped flower, the segments having a distinct bar of green down the centre, which also detracts from its beauty. It has, however, one redeeming point, viz., that of its flowers continuing quite a fortnight after those of all other Tulips are past. *T. vitellina* is of dwarfer stature, has larger and finer shaped flowers of a lovely delicate tint, which open with the earliest of the *Gesneriana* section. It will be a splendid Tulip for beds and borders, its dwarf sturdy habit standing it in good stead against heavy rains and winds. The foliage is ample, broad, and with the glaucous tint so characteristic of this section.

T. fulgens and *T. elegans* are both now largely used in spring bedding; masses of them are very grand, and although they are not of long duration, they more than repay the trouble of lifting, storing, and planting. I much prefer them to the stiff, and in many cases formal, florists' varieties; they seem to have more character about them, and are certainly more graceful and more highly coloured.

T. spathulata, *macrospeila*, and *platystigma* are also well-marked, stately forms. The last, supposed to be a native of Dauphiny, is not, however, recognised by Grenier and God-

ron in their "Flora of France," and is probably of garden origin. In time of flowering, habit, &c., it is similar to *T. fulgens*, but may be easily recognised by its magenta-purple segments, at the base of which are pale bluish blotches with white margins. *T. macrospeila* is closely allied to *Gesneriana*, with large, bright crimson flowers, with a distinct black yellow-bordered blotch at the base of each segment. The stamens are also black about one-third the length of the flower. *T. spathulata*, with bright crimson flowers with a bluish black eye, is a very striking form. *T. maculata* is a well-marked form with a hairy stem and bright red flowers, having a black blotch at the base. It flowers towards the latter end of May, and is very desirable for spring bedding. *T. pubescens* is another supposed hybrid between *Gesneriana* and *suaveolens*. It is one of the early-flowering race, and a few of the florists' forms have a distinct resemblance to it. *T. campopetala*



Tulipa suaveolens.

is another red and yellow garden form. *T. retroflexa*, figured in *THE GARDEN*, Dec. 3, 1888, is probably a hybrid between *acuminata* and *Gesneriana*, and a truly beautiful and exceedingly valuable flower. It rarely exceeds 2 feet in height; the recurved segments, of a pure soft yellow, are very striking in a group. It is one of the easiest to grow. Other forms there are in gardens belonging to this class all of which well deserve a place in our collections, their distinct bright colours and free-flowering habit being ample recommendation. They are as easily managed as the florists' forms, the ordinary border or bed suiting them admirably, while they need not be lifted annually unless the ground is required for dense growing plants.

D. K.

Birds singing in November.—Poets have sung of the earth-worms coming forth wondering at the early spring, and the birds singing and beginning to build their nests in January, and facts carefully noted have very often confirmed and even gone far beyond the dreams of poets in such matters. But I never remember the birds to have been so greatly deceived as to the weather at this season of the year as they have during the week ending November 23, 1889. Beginning with a few solitary, doubtful, and quavering notes, as if startled by their own temerity, the birds have

gathered new confidence day by day, until now they are in full song at daybreak and eventide as if it were April. Of course, there is not an equal volume of sound, as not a few of the songsters are away. But it is astonishing how many muster to these unseasonable concerts, and of the birds with us not one, so far as I have discovered, remains silent. Neither is this untimely singing of birds confined to their morning and evening concerts. Ever and anon through the day, thrush, blackbird, robin, or other songsters utter their sweet or tittering notes. This is the more singular, as the weather, though mild and moist, has been of the true November type, dark and foggy. Nevertheless, the mere mildness seems to have set all our birds singing sweetly, and should it continue, we will have a search for nests and eggs, and will send you samples of both, if found. Fortunately, so far, the buds have been less affected by the mildness of the season than the birds, and with the exception of a collection of old-fashioned Roses, planted early in October, and yellow Carnations and double Violets in plenty in bloom in the open, we have few symptoms of the abnormal mildness of the season. The sudden fall of the thermometer to 36° this morning (November 26) and two driving snowstorms this afternoon, that have whitened the Grass, have hushed every note, and winter reigns supreme over earth and air, beast and bird. In bidding a long adieu to our feathered friends, we tender them hearty thanks for a week's melody in good time, though so much out of season.—D. T. F.

CHRYSANTHEMUMS.

SPOILING THE CHRYSANTHEMUM.

THE article under this heading by "J. I. R." and the letter of J. Riddell in *THE GARDEN*, Nov. 23 (p. 471), open up points which are so fundamental to the question of showing, that I fear little practical result is likely to follow.

The superiority, as an object of beauty, of the undressed Japanese flower to the highly developed and finished incurved (that joy of the heart of many gardeners) is, to my taste, as it is to that of "J. I. R.," beyond all doubt; but, after all, it is but a matter of individual taste. Those of us who prefer the Japanese need not grow the incurved, but we must not ask to inflict our views upon others who may differ from us.

Again, in view of the relative cost and difficulty of transport, especially for long distances, of cut blooms and plants, the exhibition of cut flowers of the Chrysanthemum, as of the Rose, is not likely to diminish in popular favour. There might, indeed, as Mr. Riddell suggests, be classes also for the decorative plants such as he describes, and experience alone can decide as to the amount of support which such classes would receive.

Then, again, while showing is to admit, as I fear it must, the element of competition, size cannot be eliminated from the tests of comparative skill and excellence. That mere size is sometimes considered by judges too exclusively of the other considerations of freshness, colour, and build we may deplore, but upon this point it would appear that the remedy must lie in the direction of a hope that those gentlemen who are entrusted with the responsible office of judges will gather moral courage to defy the popular verdict which sometimes goes in favour of mere big-

ness, and will act in practice as well as in theory up to the admirable standards of judging as laid down by experts.

However, it appears to me that there are results arising from the modern system of framing schedules fully as disastrous to the Chrysanthemum as those indicated by "J. I. R.," but fortunately of a nature more easy of correction. Any visitor to the recent metropolitan and suburban shows must have been struck by the almost total disappearance from the stands of many an old favourite and some of the most beautiful of the Japanese flowers, merely, it would seem, because they are superseded by varieties just a trifle bigger.

The inevitable "best twelve" Japanese must have struck everyone by their almost wearying repetition, and when the season's audits are forthcoming we shall have full proof of this. I have indeed admitted that size cannot be ignored, but surely we ought not needlessly to give exclusive preponderance to this consideration, and thereby drive from our show collections numbers of the most refined and beautiful of the varieties. Such a result is for the benefit of neither amateur, gardener, nor nurseryman. This evil is obviously most distinctly fostered by the plan of creating classes permitting the exhibition of by far too small a number of varieties, even the nominally larger classes oftentimes allowing duplicates of the same flower instead of increasing the minimum number of varieties necessary; indeed, I noticed recently in a schedule a class for "twenty-four Japanese, twelve varieties," thus allowing a mere duplication of the aforesaid best dozen.

This system not only tends to lessen the number of varieties cultivated by the exhibitor, but also necessarily leads to the subordination of cultural skill to something very like mere chance. The cultivator for show now finds it to his interest to grow a large number of a very limited number of the very largest varieties, and it is a matter of common knowledge how much easier it is to catch the chance show bloom amongst a number of plants of one variety than to have to face the difficulty incident to the necessity that almost every plant of a much greater number of varieties must be made to do its duty, and be cultivated to show standard, in order to supply the needed minimum. I know some gardeners, and even amateurs, who grow over 300 plants of very few individual varieties and never venture beyond the six and twelve bloom classes. What test of cultural skill can success under such circumstances afford? Surely none of any value. That such a number of plants should enable a cultivator to include a wide range of varieties, I may venture to state from experience, for the first prize stand in the forty-eight Japanese, twenty-four varieties, amongst nine competitors at the Aquarium in 1887 was cut from 165 plants in sixty-six varieties, for that was the total number of Japanese which we then grew.

The National Chrysanthemum Society, I think, shows true wisdom in creating the

classes of forty-eight blooms of not less than twenty-four varieties. I would prefer thirty-six, or even the full forty-eight distinct varieties, which would be quite possible, in the Japanese class at least, and would be consistent with a limited collection, certainly one not necessarily exceeding 300 plants. By all means let other societies follow the example of the National, and we shall then at least have saved to us many of the lovely Japanese varieties which must otherwise disappear; or, looking at the matter in another aspect, many of us who now allow our gardeners to show will find ourselves faced with the alternative of putting a stop to showing altogether or of submitting to the loss of the most beautiful varieties in cultivation and the substitution of a monotonous repetition of some dozen or so of the hugest and coarsest varieties of our favourite flower, and I believe that there are many besides myself who would adopt the first alternative. — C. E. SHEA, *The Elms, Food's Cray, Kent.*

— I have carefully read the remarks of "J. I. R." at p. 471, and cannot agree with him at all in his violent strictures on the incurved Chrysanthemum. He may not approve of the incurved blooms, but his language is rather strong when he describes them as "simply hideous monstrosities." I hope I have some sort of "artistic sense," and yet I like double-flowered pompon Dahlias much better than single ones. I like a double Daisy and a Ranunculus. There are standards of excellence for all classes of florists' flowers, and I fancy I am right in stating that the incurved Chrysanthemum never was so popular as it is now. Prizes have been offered at the Crystal Palace and elsewhere for single Chrysanthemums, but they do not seem to take either with the growers or the public. I admit some, perhaps half a dozen, of the single-flowered varieties are very beautiful; we grow them all, and I like to see them arranged with long stems in Japanese vases. As exhibition flowers they are very ineffective. It seems rather strong to assert that schedules of shows are drawn up by "ignorant and tasteless persons," when, as a matter of fact, they cannot help themselves. They must offer prizes for the best cut flowers, for the best grown plants, and for groups of plants. There is no doubt plenty of room for improvement both in the manner of cultivating the plants and exhibiting them. My connection with Chrysanthemum societies does not go further than judging the productions of other people, but I know how difficult it is to get the flowers and plants up to the highest point of excellence, and how much more difficult it is for some growers to find time to look after their plants. One successful exhibitor told me that he had to pot his plants after six o'clock at night, after he had done a hard day's work. His strong point is cut blooms, and the larger he can grow them, the better chance he will have to win prizes, that is, if form and well incurved centres go together. Steps might very well be taken by the leading societies to improve the method of exhibiting the blooms at public exhibitions. As exhibited at present, the incurved blooms are denuded of their foliage, the stems forced through a wooden tube, and the flowers supported by a cup. If the flower is loose and the centre rather open, the petals are drawn together by pulling the stems down the tube and the flower into the cup, which presses the petals closer together. Messrs.

Cannell and Sons, of Swanley, initiated a system of exhibiting cut blooms in stands. The blooms were in triplets, and were shown as grown with stems and foliage. The stems were 3 inches or 4 inches long, or rather they were long enough to poise the flowers nicely above the surface of green Moss and to show the fresh green leaves. I fancy the committee of the National Chrysanthemum Society did not take kindly to this innovation of the Messrs. Cannell, nor did any society follow their lead until this year. At an excellent exhibition of Chrysanthemums on Highgate Hill, some stands were exhibited in this way for competition, and I thought they had a much more pleasing effect than the stands of single blooms arranged in cups. The Japanese, pompon, and single varieties might be more effective than the large incurved. In fact, pompons are now exhibited in triplets at most exhibitions, and they are much admired, especially the Anemone-flowered varieties. As the National Chrysanthemum Society will most likely make a special effort next year to celebrate the introduction of the Chrysanthemum into England, the committee will probably feel that some alteration ought to be made in the schedule, and a trial might be made of showing a collection of every class of blooms, with their foliage as grown and in triplets. Light glasses and Japanese or Oriental vases might also be exhibited with sprays of Chrysanthemums as cut with the leading bloom, and all the side buds with it. As we see them now, all the side buds are removed in August or September in the very earliest stages of their development, so that all the vigour may be concentrated in the terminal bud; whereas if the side buds were allowed to remain, the centre bud would be smaller, but it would be set off with its natural accompaniment of side buds, all different in size and form.

SPECIMEN PLANTS FOR EXHIBITION.

I know it is easy enough to find fault with the present state of things; but as an old exhibitor of plants as well as of flowers, I know well that it is easier to suggest improvements than it is to carry them out. My first acquaintance with "specimen" plants at the London exhibitions dates back to 1863, when Mr. Adam Forsyth, of the Brunswick Road Nurseries, Stoke Newington, was an exhibitor. His plants were severely trained down into the form of a large Mushroom with the blooms studded over the surface like pins stuck on a cushion. He used to win first prizes with those, but on one occasion an exhibitor staged half-a-dozen specimens in competition with Mr. Forsyth's half-dozen. These plants were grown from cuttings of the same year to single stems, and were neither trained nor pinched, except a single stick to each plant. There were on an average six good blooms on each plant, with all the side ones left on, and the judges had no difficulty in placing them before Mr. Forsyth's elaborately trained examples. If prizes were offered for a collection of single plants without any training or pinching, it would make an interesting feature at the exhibitions.

The difficulty with naturally grown specimens is to retain the foliage on the older stems of the plants, and when exhibited with hardly any leaves within 2 feet of the pots, or even more, as I saw some this year, they are not very attractive objects. One can easily understand the reason for bending down the stems, it being the only certain way of presenting a mass of foliage and flowers to the spectator. The groups of plants may well be improved upon; as arranged at the exhibitions they are merely a mass of plants huddled closely together, pre-

senting a level or slightly rounded head of flowers. This arrangement might be altered to a certain extent. The even and formal surface might be broken up so as to give a more natural appearance to the groups. At the large exhibitions held at Brighton, some very effective groups are arranged, the even and formal surface being broken into by the plants rising at intervals here and there above the others in the group. For my part, I consider that crowding the plants too closely together is merely a means of hiding bad cultivation.—J. DOUGLAS.

Late Chrysanthemums.—"W. I. M.'s" experience and mine quite coincide with reference to late blooms of Chrysanthemums from plants grown for producing exhibition flowers, or for cutting for table decoration or general furnishing, as I find all, or nearly all, such plants send out lateral shoots near the tops of the stems. These if left and taken care of, show buds at the points and yield very late blooms that are of great value for cutting. The only thing against them is that they are generally short and weak in the stalk, but they do well for specimen glasses and such like uses, and are a great help where flowers are in much demand, as Chrysanthemums stand better and last fresh longer than any others in use. To assist plants to produce these late blooms it is necessary for them to have a regular temperature of about 50°, and to be placed in a light airy house, or mildew soon affects the leaves and spoils the whole lot. By managing these plants in the way referred to, and growing as many as can be accommodated of the very late ones, a good supply of flowers may be kept up till well on into the new year. It is to be hoped that we shall soon have a greater variety of such as come in now and after this, as they would have a value far beyond all the early kinds, and if hybridisers or raisers of seedlings and importers of new kinds will only turn their attention that way they will be doing a useful work for us all.—S. D.

Chrysanthemum groups at exhibitions.—At some shows, as at Twickenham the other day, the practice of allowing Ferns or similar foliage plants to edge the Chrysanthemum groups is utilised to good effect. At others where rule-of-thumb practice prevails, too often an exhibition of bare stems and unsightly pots is made, let the top blooms be ever so fine. Of course, growers who exhibit groups ought to have at disposal some cut-backs so-called, which being dwarf make good facings for tall plants. These at the best give, however, only but a formal finish, and do not hide the pots. Some judges take no account of style in setting up or of decorative effect; they are all for quality, which in their minds signifies size of blooms, and especially of the incurved flowers, which, on the whole, are far less effective for conservatory decoration than are the beautiful Japanese varieties. Now if these groups have to the exhibitor any special value apart from their winning him prizes at shows, and that is far from being the sole aim of Chrysanthemum plant culture, it is in the presenting handsomely arranged and effective decorative groups in the greenhouses and conservatories at home. There he at least, if worthy the name of a decorator, always employs some Ferns or other foliage plants to face his groups, and realises to the full the value of decorative effect over mere quantity. We ought to look for groups so arranged to the best effect to be transferred bodily to the exhibitions, and to that end exhibitors should be allowed a free hand so far, that whilst effect should be the dominating feature, size of bloom being *en evidence* sufficiently on the tables, a proportion of dressing plants equal to one-third of the whole should be allowed to give that pleasing effect and finish to the groups which any gardener would be expected to furnish at home.—A. D.

White Chrysanthemums.—The supplementary list of white-flowered Chrysanthemums given by "B. C. R." (GARDEN, Nov. 23, p. 472) will be read with interest by many. The various sorts enumerated by him are excellent, and especially pleased was I to see his reference to Fair Maid of

Guernsey, this being a favourite of mine. It is, beyond all question, one of the most useful white-flowered Chrysanthemums extant when grown as apparently "B. C. R." has grown it. Then it loses to a very great extent the coarseness which is characteristic of it when grown on the "mop stick" system, the blooms being very much smaller in size, and consequently more effective. "B. C. R." also inquires why I omitted all mention of Mme. Desgrange. It was, I admit, an oversight on my part, and one which now has been justly rectified, for it is one of the most beautiful of the early-flowering group, and although largely grown, there is ample room for its extended culture. Growers will do well to eschew many of the worthless novelties now prevalent, and reinstate the old, yet useful kinds.—C. L.

—To the list given in THE GARDEN (p. 418) I should be inclined to add two varieties—Mlle. Lacroix, or La Pureté, as it is frequently called, and La Vierge. The first is a most beautiful Japanese kind of good habit, and flowers just before the bulk of the collection, while La Vierge is a short sturdy-growing variety with prettily reflexed blooms, about the size of a large pompon. This variety belongs to what is generally called the October-flowering section.—H. P.

CHRYSANTHEMUMS FOR CUTTING.

It is appropriate to follow up the remarks on big Chrysanthemums by a reference to plants naturally grown, as may be seen in the Royal Horticultural Society's Gardens at Chiswick. A collection has been grown there this season comprising as far as possible every known kind, and there has been no attempt to simply produce flowers whose only characteristic is mere bulk or form. The plants have not been constantly stopped nor even tied in in any unnatural way, but allowed free scope to bear their precious flowers in charming profusion and grace, such as the true artist delights to see. From such plants basketfuls of flowers can be cut for the drawing-room, rich sprays of bloom whose freedom and expression are delightful, a relief from the wearisome monotony of flowers moulded into formal shapes at the will of the cultivator. On Nov. 27 all the varieties mentioned in the course of this article were in perfection, with scarcely a flower affected by damp or fog. Those who grow merely for exhibition can tell a different tale. The flowers have long since rotted, even in some instances before the second week in November, but the blooms on the plants more naturally grown last for weeks, and then we have the full beauty of expanded flowers and opening buds.

Two of the loveliest Chrysanthemums for cutting are the single varieties Admiral Sir T. Symonds and Jane, both late blooming and fit to grace the daintiest vase. The single varieties shared the same fate as befel the single Dahlia and single Rose; they were regarded by those who could only discover beauty in a double flower of a formal shape as fit for the rubbish heap; but things have changed, and the single Chrysanthemum, like the single Dahlia and Rose, has become what we may call a popular flower. This season the single types have been shown well, especially by Messrs. H. Cannell and Sons, who had a charming collection at the recent Aquarium exhibition, and none were finer than the two varieties to which special allusion is made. Jane, or Snowflake, as it is called by some, but the first name is correct, has flowers each about 2 inches across, the size naturally varying according to the strength of the plants, and with long, pure white petals that droop gracefully, just sufficiently to give it a charming and characteristic beauty. Sprays of flowers from plants not disbudded should fetch good prices, but by disbudding slightly a better shaped and more

massive bloom is obtained. Admiral Sir T. Symonds has the same free, graceful character, but the florets are not so spreading, and their yellow colour, as intense as the yellow Buttercup of the field, gives a rich contrast to the exquisite purity of Jane. On some of the plants at Chiswick there were as many as six and seven expanded flowers on a single shoot, a cloud of bloom that should fill the artist with unfeigned delight. A good variety is Souvenir de Londres, the flowers rich crimson, bright and telling either when exhibited in bunches or in any arrangement of cut flowers. La Joyeuse might almost be called a single variety, as its flowers are thin, but of the size of a crown-piece and tinted charmingly with pale yellow. The plant of it at Chiswick is smothered with graceful sprays of bloom that almost hide the leaves. This is the kind of variety we should see more of; uncommon kinds driven out by the vulgar big blooms that exhibitors think fit to hold up to admiration. Eight and nine flowers are carried on the stems, and from half-a-dozen plants handfuls of flowers could be cut with ease. Another variety remarkable for its freedom and soft colour is Roseum superbum, a well-known Japanese reflexed variety, of which Souvenir de Haarlem and The Intended are synonyms. The gracefully recurring florets are self rosy lilac on stopped plants, but show several charming shades on plants let to grow more in their own way. Rosy lilac fades to creamy white, and brings out the delicate yellow centre, while a bronzy shade suffuses the whole bloom. This is the charming medley of hues we get on an unstopped plant that are stolen from it by a process of feeding and stopping. Agreements de la Nature, an old favourite fast disappearing, is very beautiful with four or five of its yellow flowers appearing on the same stem. Mme. Amelie Baltet is a good Japanese kind for decoration; the flowers are creamy white, tinted with yellow in the centre, quite different from the Japanese Moonlight, a variety that is now in perfection. The flowers are large, but not coarse and creamy white, or just touched with the softest of yellow shades, the outer florets broader, but thinner and more twisted in the centre of the bloom; its name is appropriate. Dr. John Tanner is a very free Japanese variety, the flowers rich red, and with broad handsome petals; it is good for cutting. M. Boucot is fitted for the same purpose; the flowers are delicate rose, broad, and very freely borne on the slender stems. There are two or three plants of a kind named Lady Emily, which has its uses for decoration. The flowers are white, borne in charming profusion, and have a yellowish shade in the centre. It is a kind ladies should have for cutting from. Mme. Melanie Fabre is a reflexed Japanese of a soft rose colour, and useful for cutting for the freedom and shape of the flowers. Very graceful and charming in its rose carmine colour is Anna M. Payne, quite different to the old golden yellow incurved Jardin des Plantes, which was flowering freely last week at Chiswick, or the yellow Ethel, a sport from the popular white Ethel and a synonym of Mrs. H. J. Jones, all of which were in fullest beauty. A pretty flower when not forced and cramped as we see it on the exhibition table is Ralph Brocklebank. It resembles its parent Meg Merrilies in general expression; the florets are of the same light, flimsy, and irregular character, but clear gold yellow. A kind that is quite as beautiful as any that have been mentioned as yet is the new Japanese Anemone variety James Weston, which is of the purest white without spot or shade of any colour. It should be used largely for vases, and in

company with the golden yellow Anemone-flowered Glück. Agnes Flight, sent out by Messrs. Laing and Sons in 1886, should be noted for its spotless purity of colour and prettiness. It is a Japanese variety, and most acceptable at this season for cut bloom. Alice Bird, a new reflexed Chrysanthemum, has rich yellow flowers, compact and showy; it is useful to mix with other things in a bowl or epergne.

Amongst the pompon and Anemone pompon varieties there are beautiful flowers for cutting, but here the cultivator can be allowed free choice to pick what colours are wished for, and there is no scarcity of both rich shades and those as delicate as the tint of a blush Rose.

Some of the names alluded to will be unfamiliar, and I know not whether all the varieties are in cultivation, but the fact of their presence in the Chiswick collection shows that they are not quite forgotten. In the eagerness to win prizes, and with a limited number of flowers, whose chief characteristic is size, a vast number of exceedingly beautiful varieties that, fortunately, will not make "big" blooms, have been overlooked. Those who want Chrysanthemums solely to cut from will find the varieties given of great value to start with, and, unlike the exhibitor who strikes his cuttings now, it will not be necessary to commence until the spring. Growing the plants merely for flowers whose charm is their freedom and grace, entails no great difficulty. It is in the stopping, tying, and feeding with unwholesome mixtures that the "art" in Chrysanthemum culture consists.

C.

CHRYSANTHEMUMS FOR MARKET.

ARE Chrysanthemums sufficiently remunerative to advocate their extended culture as market flowers? Those who have had experience in this phase of Chrysanthemum growing will, undoubtedly, answer the above question in the negative. This they will do, too, in spite of the now almost unprecedented demand for these lovely autumn flowers, for as great as the demand is the supply is equally large. To corroborate this fact one has but to take a glance at the flower market, Covent Garden, in the early hours of the morning any time from the beginning of October until the second or third week in December. There, flowers in season of all descriptions are to be seen, but the Chrysanthemums during the time mentioned take the lead of any others, there being enormous quantities of cut bloom and pot plants offered for sale. Last week on passing through the market, a well-known salesman informed me that this year the supply of Chrysanthemums, both as cut bloom and pot plants, was much greater than in previous years, while practically there was no demand for them, at least no demand in comparison with the supply. In answer to a question, he further informed me that many growers would fail to obtain sufficient returns to repay them for their labour.

Despite this, however, there is money in the Chrysanthemum. I do not mean to say that fabulous sums can be made out of Chrysanthemum culture, no more than there can out of the much-vexed fruit-growing question, but at the same time if judiciously managed the receipts will be sufficient to enable the grower to pay all expenses and leave a fair margin in the bargain. A writer in THE GARDEN last week (p. 472) informs us that he has "cut a guinea's worth of bloom off a single plant at one time early in December." He does not, however, tell us when this took place, whether in recent years or in bygone days when the supply of Chrysanthemum blooms was not nearly so large as at the present time. Probably it was the former but in either case it would be interesting to know if he would kindly supply the information.

There are many points to study, however, in growing Chrysanthemums for market if the returns are to be remunerative; points, too, about which the private grower knows, or for that matter need care

but little. First of all, a most careful selection of varieties suitable for the purpose must be made. To include novelties and others of untried merit in a collection of plants for market culture would be little short of madness, and only those of limited experience in the matter would think of doing such a thing. But such, to my knowledge, has occurred in more than one instance of late; hence my remarks anent the unwisdom of so doing. Varieties possessing robust constitutions and free-blooming qualities should only be grown. Even of these, too, preference should be given to those dwarf in habit when grown as pot plants, and the duration of bloom when cultivated for cut purposes. Colour or shade of bloom, again, is an all-important point with the market grower. Public taste varies considerably, the demand for a certain shade being much greater some years than others. Those who wish to be successful should study this, and endeavour to satisfy the demand for a certain shade, should the public taste vary in any particular direction. Two other items worth considering by the intending grower are the time of consigning the plants and flowers to market and the mode of doing so. The former is of great importance, for beneath lies the secret of success. To offer either cut blooms or plants for sale when there is a glut in the market, even though they are well grown, must, of necessity, result in low returns; to expect otherwise would mean disappointment. At the same time, blooms and plants of exceptionally good quality will always find a ready sale, and those who can produce good stuff need not trouble themselves on that score. As has been said, the returns for even good produce must be necessarily small if placed on the market in mid-season, and, therefore, growers should make it their business to avoid this. In many instances when growing for market, the early produce realises the highest prices, but the same cannot be said of Chrysanthemums, except it be well-grown pot plants, and a few exceptionally good blooms of the October-flowering varieties. November, as a rule, is the worst month for the market Chrysanthemum grower, so far as obtaining remunerative results is concerned, while the week preceding Christmas, when flowers of all kinds are in demand, is the best time in the whole season. More than one grower of my acquaintance makes a specialty of having varieties that bloom about that time and such shades as are generally asked for then. The result, needless to say, is in every case highly satisfactory. As to the mode of consigning the produce to market, that depends greatly upon the facilities the grower has at command, the size of the consignments, and how, or rather where, he is situated.

The above are some of the points those who grow Chrysanthemums for profit should study; but the question is now, What are the best and most remunerative varieties? It has been said, and will be generally admitted, that novelties and varieties of untried merit are totally unfit for market culture. The public, who rely upon this source for their supply of Chrysanthemums, care little or nothing about names. They require flowers useful for decoration, the names of them being but a matter of secondary consideration. For example, a dozen bunches of Peter the Great in good condition will realise equally as much, or perhaps more, than the same number of bunches of Sunflower or any other recently introduced yellow were they offered for sale. The same with the white varieties, and no one who has had experience in growing Chrysanthemums for market would think of paying any special attention to such varieties as Avalanche, as much as blooms of this kind have been admired at exhibitions this and last season and as useful as it is for private gardens. For midseason purposes Elaine is perhaps one of the most extensively grown Chrysanthemums. The flowers of this, as is well known, are pure white and freely produced; there is, moreover, a large demand for well-grown blooms. By the term "well grown" I do not mean samples similar to the hideous monstrosities generally staged at exhibitions, and which many seem to think constitute a good Chrysanthemum—for such are useless for decoration, being very

heavy and ineffective when placed in a vase or epergne—but medium-sized blooms of good colour and substance. For an early supply the beautiful Lady Selborne, with its lovely white flowers, is one of the best for cut purposes. This variety is somewhat extensively grown, and, as a rule, there is a fair demand for it. Another variety much grown for market is Mme. C. Desgrange, perhaps the best of the early-flowering kinds; the blooms of this are pure white and very useful for decoration. The same may be said of Mlle. Lacroix, a semi-early Japanese of pure whiteness. The flowers have narrow twisted petals, and the smaller flowers, when tastefully arranged in an epergne, are very effective. Fair Maid of Guernsey is an old variety, though still extensively grown for market work. With this aim in view, growers make it a point to produce small, or rather medium-sized blooms, the result being that the market flowers of this kind are quite devoid of that coarseness which characterises them in the majority of private gardens, where grown. It is, moreover, a late flowering variety, and if properly cared for will realise remunerative prices. One grower I know, who largely supplies the London and other markets, generally has several hundred plants of this variety coming into bloom about the first or second week in December, and by them he can generally show a good balance on the right side, even though the early varieties proved unremunerative. Another old variety of well-tried merit suitable for supplying cut blooms for market is Mrs. G. Rundle. Enormous quantities of this kind find their way into the London markets every year, not to mention the numerous provincial towns which now call for a large supply of Chrysanthemums. Being of the incurved section, however, and devoid of that ragged effectiveness which characterises the Japanese varieties, it does not realise so high a price as the popular blooms of the latter kind. George Glenny is another variety worthy of the attention of those who anticipate growing for profit. The blooms are of a pale yellow colour and generally much admired. In more than one instance I have known fresh blooms of this kind to realise a higher price than the white incurved varieties. Snowdrop, a small white pompon, is also a favourite in many market establishments, while the same may be said of Sœur Melanie, a very free-blooming reflexed pompon, pure white in colour. Other kinds are much grown for supplying cut flowers, though, as before mentioned, in the majority of instances varietal names are ignored, useful blooms of a white, yellow, bronze, and pinkish colour being all that is needed.

So much for the cut blooms. There is, however, another phase which when judiciously managed generally proves remunerative. I refer to the culture of pot plants. As in cut blooms so in this, the best results are secured by a careful selection of the most suitable varieties only. So far as my experience goes, Sœur Melanie is one of the best varieties for growing in pots for this purpose. In habit the plant is dwarf, and produces its pretty white flowers in abundance. With Snowdrop, the white pompon mentioned above, I have seen some good results produced; this makes an excellent little pot plant and should be very largely grown for decoration. La Vierge, a very dwarf-growing variety with silvery white flowers, is also much seen in the London and other markets; it is an October-flowering kind. But few varieties are more extensively grown as pot plants for market than Mrs. G. Rundle, this being of easy culture and branching habit. The white, lilac, and pinkish forms of Cedo Nulli are also largely grown, while the same may be said of several pompon varieties. Several of the single kinds make excellent market plants and may be grown with advantage, as also do a few of the dwarf-growing and free-blooming Japanese varieties.

C. L.

Chrysanthemum Edwin Molyneux.—I notice that "Z." is rather disappointed with the above Chrysanthemum. He must not, however, blame the variety because of his failure, as it has done exceptionally well with me this season. I had a plant which carried four blooms quite as large as those exhibited at the Aquarium last year. If "Z." will

take some strong bottom cuttings, grow them on, and see that the wood gets thoroughly ripened during the summer, he will regret having said a word against it. No doubt "Z's" plant was grown from a side cutting, and this seldom comes well in any variety.—CHAS. G. BAXTER.

OUTDOOR CHRYSANTHEMUMS.

I am not surprised Mr. Molyneux, "C." and others should draw attention this season to outdoor Chrysanthemums from time to time in THE GARDEN. After twenty years' experience I cannot remember a single season outdoor plants have done so well, and I take it Ireland has not thus been singular; not once during November has my thermometer been below 50°. Storms and heavy rains are the next most serious agents of destruction, and I have had no noteworthy injury from that source but once. If therefore there was any certainty that the coming years would be as mild as the present, there can be little doubt there would be numbers of beds and borders and all vacant spaces on walls covered with Chrysanthemums. At present in the suburbs here, and I understand in Dublin and in smoky London even still more, some of the beds and spaces in front of the houses and against south walls are quite brilliant, and afford a wealth of cut flowers. The important question then crops up. How can this be managed so as to have outdoor Chrysanthemums thus in November and December any year? There is little difficulty where there is a vacant south wall such as I have at the back of my garden, and I see no reason why a bed or border could not be as well protected by means of stands shaped to suit the particular situation or position, either oblong or triangular, like ground vineries, but supported sufficiently high over the plants. Walls, however, offer the greatest facilities. I ran a wall plate of timber about 11 feet or 12 feet from the base of the wall, and a foot over the highest blooms the whole length. Against this I hinged a framework covered with canvas. This framework or screen is divided into 10-foot or 12-foot lengths for the purpose of enabling them to be easily lifted by means of a pulley, or I have found a rigid pole in the centre, that supports them at such a height as to admit plenty of air, light and sun, equally useful. When they are brought down at night they are supported in front about 6 feet from the ground, and a curtain or fringe of the canvas drops down to keep out heavy rains or frost. The contrivance was cheap and temporary, but so far has admirably answered its purpose. Under this I have at present thousands of blooms of varieties I shall refer to further on, and I have been cutting them for various purposes since September. Someone may ask, Why not have erected a greenhouse at once? Yes, but that is the very thing I want to avoid. I have recently erected a greenhouse, and of the hundred plants I grow in pots, a good number are there, and by no means so satisfactory as those in pots outdoors.

REASONS FOR GROWING OUTDOOR CHRYSANTHEMUMS.—The advantages of growing outdoor Chrysanthemums are, they take care of themselves; no trouble nor expense, potting nor repotting; good blooms are assured, and will not be ruined if once or twice neglected in watering; very little trouble, more especially if the soil is rich and well manured; little danger from insects or other enemies; no mildew and no damping—the plague of the ordinary exhibition grower at this time of the year; the blooms last far longer than when grown under glass; they can thus be grown exhibition size. I have large and beautiful blooms, a box of which I am sending you, of Barbara, Rev. J. Dix, Jardin des Plantes, Cherub, Lady Slade, Mr. Bunn, Mrs. W. Shipman, Lady Dorothy and White Venus among incurred. As to the reflexed, every one of the family, especially Cullingfordi, Distinction, Cloth of Gold and Elsie, are useful outdoor Chrysanthemums. The Anemone varieties, especially J. Thorpe, junior, Sœur Dorothee Souille, Georges Sand and Mrs. Pethers, are useful for outdoor work. I have already given eight reasons for growing Chrysanthemums outdoors, and shall merely add the amount of bloom is enormous

for cutting, and there is a great saving of fuel, time and labour, not to mention the constant worry; and lastly as to colour, compare an outdoor bloom of any variety with the same indoors, say in December, after two months' indoor warmth and moist atmosphere. No one having anything like the facilities I indicate should be without the Japanese varieties.

Clonmel.

W. J. MURPHY.

FERNS.

A TASTEFULLY ARRANGED FERNERY.

OUR illustration well shows that by the exercise of a little taste in grouping suitable plants together with Ferns, that the effect of both is



Rock pool in fernery.

considerably heightened—a fact that should not be lost sight of by all who intend to take in hand the arrangement of the plants in a fernery or conservatory in a natural and easy manner. This grouping is a practice happily gaining ground, and one that, well carried out, cannot be too much commended. Mr. F. C. Carlsake, the owner of the fernery here in question, writes as follows: "The rockery over the little pool in the fernery is composed of the Pulhamite stone, which is wonderfully porous, and the Ferns and Mosses sow themselves in abundance all over

it. The little fringe round the edge is almost entirely covered with self-sown plants, growing simply on the rock without soil, the roots of many hanging down in the water."

ORIGIN OF ADIANTUM FARLEYENSE.

VARIOUS accounts of the origin of this Fern have been given in THE GARDEN and elsewhere, but they all differ more or less from that which I received from, I have good reason to believe, a trustworthy source. It may be in the remembrance of some of your readers that Byfleet Lodge, in Surrey, was some years ago famous for the collection of tropical fruits, grown there to much perfection, as well as for a general collection of plants that occupied a conspicuous position at the London shows. It happened that the late Mr. T. Hinds,

who then owned Byfleet Lodge, was visited by a gentleman from one of the West Indian Islands. He described a Fern growing on his estate of Farley Hill and which he believed to be unique. He promised to send it to Mr. Hinds, and in due time it came to hand. Fortunately, it could not have come to a better place, for it was placed in the care of a first-rate plant grower, and with the large extent of glass there was no difficulty in suiting its requirements, which are, as is well known, somewhat peculiar. It was, if I remember rightly, grown in one of the tropical frame houses, the plants standing on a slate stage over several

rows of pipes. The great heat and moisture maintained there apparently just met the requirements of this beautiful Fern, and small plants with but one crown threw up large, well-developed fronds. Mr. J. Carr, who was gardener at Byfleet Lodge at the time, told me that he did not realise what a treasure he had, or a little fortune might have been made from this Fern. It might have remained in obscurity for a long time, but that Mr. Carr exhibited specimens of it at the great flower shows, and in this way Mr. B. S. Williams and, I believe, Messrs. Veitch became possessed of plants of it, so that it was never distributed by any trade grower in the way that is usually practised in the case of new plants. The above account was given me by Mr. Carr himself, and I am under the impression that it came from Jamaica, and not Barbadoes, as has been stated in *THE GARDEN*, but of this I am not sure. When Mr. Carr became aware of the value of this Fern he began to work up a stock of it, but progress was slow until he substituted loam for peat, and then growth was made at a rapid pace. This peculiar liking of *Adiantum farleyense* has also been discovered by other growers. A curious incident in connection with this Fern was the distribution of a number of seedling plants by a well-known trade firm, not one of which came true to character. I do not think this was ever satisfactorily explained, but it is supposed that it was a case of reversion to the original species of which *farleyense* is probably a sport. The fact that the plant discovered on the Farley Hill estate is the only one ever seen in a wild condition would point to this being the case. J. C. B.

VARIEGATED FERNS.

VARIEGATED Ferns are not numerous, and chiefly confined to one genus, viz., the Pterises; and it is remarkable that in most instances the variegation is thoroughly fixed. Take *Pteris tricolor* or *P. argyrea* as instances. Among thousands of seedlings I have never seen the slightest difference. *P. tricolor* is the most beautiful of all variegated Ferns, but it is rather delicate, and is rarely seen in its best character. This beautiful Fern should be grown in the stove, and the plants kept up as close to the glass as possible. It may be grown on a shelf, or in pans suspended to the roof, and in such a position the colours will be brighter, and the fronds are not so liable to lose their colour. It is naturally of slow growth, and therefore does not require so much water as the more vigorous growing sorts, and on no account should the fronds be wetted. The plants should be potted in good open soil, keeping them down so that the crown of the plant is well in the soil, but not buried. This Fern can only be had in good condition by raising seedlings and growing them on freely; but once let them get stunted and it will be impossible to make really good plants.

P. ARGYREA.—This is a free growing variety, and may be readily obtained from spores. In a young state it is very pretty, the pale green fronds with the white linear markings forming a nice contrast to the darker fronded sorts. Older plants, however, are apt to get too tall and straggling; therefore young plants should always be grown on to take the place of those that have grown too lanky.

P. CRETICA ALBO-LINEATA is another useful variegated *Pteris*. This should also be grown on freely from seedlings. As soon as the plants get a little stunted they throw up fertile fronds, leaving the base of the plant bare; but when grown freely, the barren fronds, which have shorter stipes, spread over the pots, and form a pretty base for the tall fertile fronds. The crested varieties of this are dwarfer and the pinnæ narrower. *P. c. Mayi*, the best crested variety, has so often been alluded to, that I shall not say much about it, except that, like many other *Pterises*, it loses much of its beauty with age.

P. NEMORALIS VARIEGATA.—This resembles *P. argyrea*, but is of dwarfer habit, and the matured fronds have a greyish-green shade, while when young they have a rosy tint. This variety requires similar treatment to that recommended for

P. tricolor, and though not much grown it is a useful Fern, and should be found in every collection.

LASTREA ARISTATA VARIEGATA has deep green fronds with a pale yellowish linear marking and a bright shiny surface. It succeeds well in a cool house, and may be recommended as one of the best Ferns for decoration. It is, however, of rather slow growth. After the plants get a fair size two or three should be potted together; they will then be much more useful than when grown singly.

ATHYRIUM GORRINGIANUM PICTUM.—This is a hardy deciduous variety, but should be grown under glass. The variegation is almost as bright and distinct as in *P. tricolor*. This variety should be potted in loamy soil, and after the fronds have ripened off, it should be kept in a cool position and sufficient moisture given to keep the crowns fresh. A little extra warmth may be given early in the year, when the young fronds will soon appear, and with good treatment the plants will add much to the beauty of the cool fernery throughout the summer. Small examples may be grown three or four together in shallow pots, when a better effect is obtained. This applies to many of the smaller growing Ferns.

DICTYOGRAMMA JAPONICA VARIEGATA.—This is a very pretty greenhouse Fern, and may be easily increased either from spores or division. It should be grown in loamy soil with plenty of drainage. Although a Japanese Fern it succeeds best in an intermediate temperature during the winter.

In all of the above named the variegation is constant. Several other species occasionally produce variegated fronds, or seedling plants may have all the fronds variegated, but not distinct enough to be worth perpetuating. I have seen *Davallias* produce very pretty variegated fronds. Some time ago we had a seedling of *Davallia Tyermanni* which had some very pretty variegated fronds, some of the pinnules being quite white. In some fronds the markings were very regular, but I believe the variegation disappeared entirely as the plant got older. I have seen the same tendency in other *Davallias*. I have also seen seedling plants of *Cyrtomium falcatum* with variegated fronds, but not sufficiently distinct to be worth perpetuating.

PTERIS SERRULATA.—Variegated examples of this are not uncommon; the variegation, instead of being linear, as in *P. cretica*, is in stripes across the pinnæ and very irregular. Sometimes the plants go quite green, while in other instances the fronds gradually become much whiter, and eventually lose all the green, which of course means that the plants soon die off altogether.

F. H.

BOOKS.

BROMELIACEÆ ANDRÉANÆ.

REVIEWING a book devoted to a class of plants which are anything but favourites in this country is a somewhat ungrateful task, and even when animated with the best of intentions, it is difficult to do justice to the work and at the same time to appear impartial in judgment to a public who have no love and only a very superficial knowledge of the plants in question. Such is undoubtedly the case with the new book we have now before us. It is an excellent work, but when its qualities have to be analysed and acknowledged before a public who cannot see in the artificial production of hybrid Bromeliads sufficient grounds for awarding to one of its most striking results a certificate of merit such as is given to a chance seedling of tuberous Begonia, or to a chance imported form of *Cattleya* or other Orchid, the production of which has cost its owner little or no trouble, then it is risky indeed to hazard an independent and favourable opinion.

In this new work, which is replete with accurate information of all kinds, and minute details as to history and natural position of the many species which Mons. André discovered during his voyage of

* "Description and History of Bromeliads." By E. André. Librairie Agricole de la Maison rustique, 26, Rue Jacob, Paris.

1875-76, M. E. André, with a thorough knowledge of his subject, gives us a very good idea of the wealth of Bromeliaceous vegetation in the parts of the globe which he explored. It is much to be regretted that, notwithstanding the repeated efforts of some of our leading nurserymen to give them prominence, these beautiful plants, most of which possess extraordinary lasting qualities, are not better appreciated by the British public. It is to be hoped that M. E. André's work, with its beautifully executed and faithful illustrations, will do much to bring into favour with us a class of plants which in all Continental countries is considered as of the greatest decorative value, and which contains remarkably handsome as well as extremely curious members of the vegetable kingdom. S.

FRUIT GARDEN.

W. COLEMAN.

ORCHARDS.

THE root-pruning, removal, and planting having been carried on under exceptionally favourable climatic conditions, this work should now be finished, at least for the present, as it is questionable if retarded operations may not advantageously be deferred until February. Much, however, depends upon the weather, as I cannot recall a season when the soil worked so splendidly throughout November as it has done this year; therefore should the drought prevail, I would say push forward through December in preference to waiting for a deluge of rain and snow water, which may continue late into the spring. These remarks apply specially to heavy, calcareous, and clayey soils upon which neither man nor beast can tread with impunity in wet weather, and not to light sandy loams, perhaps not the best for our staple fruit, the Apple, but, nevertheless, fit for working within twenty-four hours after rain ceases falling. Planting having been conducted upon improved principles certainly for the last twenty years, it is gratifying to find immense breadths of orcharding not only looking well, but producing Apples and Plums of very fine quality. These, as a matter of course, will be well looked after both in regard to top-dressing and thinning, otherwise they will soon falter; but what steps, I must ask, are being taken in those old plantations, Apple-sick and in too many instances water-logged, which served in the past, but unless thoroughly renovated can be of very little use in the future? These, as a rule, may be divided into two classes, plantations which will pay for draining, pruning, and thinning, and plantations too old and decrepit to respond to the most careful attention. The last I would grub up and throw back the land to pasture or tillage; the first at the outset should be thinned by the removal of all superfluous trees, when those left standing quite clear of each other must be carefully pruned, not, as too frequently happens, by unskilled men, who think the removal of a few large branches means clever work, but by intelligent workmen who can let in light and air by cutting away crossing boughs and thinning the bunches of spray without producing a severe check. Sudden exposure, say of a Blenheim Orange Apple by the removal of inferior varieties which surround it, in many cases may be quite sufficient the first year, but it is a prudent step in the right direction. Then if the ground requires draining, the completion of these two operations is quite as much as can be expected or advised the first winter. The stems and large branches of the trees, it is true, may be scraped, scrubbed, and limewashed to free them from Moss and Lichen, and a good top-dressing will do the ground no harm. At this stage, although far

from finished, I would stay operations, especially if the plantation be bleak, exposed to cutting winds, and liable to be caught by spring frosts when the trees are in flower. Early in the following autumn the knife and saw may be introduced, but not to an extent that will reduce any part of the trees to a skeleton. And here comes the tug of war: Where are we to find the men capable of performing these operations? The prodigious profits promised by platform orators are far too good to be realised by the masses who have not undergone a course of practical training. Another operation to which I must draw attention is breaking up the hoof-trodden surface for letting in warmth, stimulants, and water in old pasture orchards. The area so disturbed should be regulated by the size of the tree, the depth by the absence or presence of roots near the surface. If healthy roots are found the sward only may be broken up, but otherwise a matter of 6 inches to 9 inches will not be too much as a preliminary to the application of manure or fresh top-dressing. Any kind of good farmyard manure may be given to exhausted trees, or, lacking this, bone-dust. Jensen's fish manure (a most excellent dressing for fruit trees), soot, lime, or wood ashes may be used advantageously. If judiciously used, any of these materials will soon change the stunted appearance of the oldest trees; but these dressings should be supplemented by the annual application of a mixture of fresh soil, road scrapings, charred hedge trimmings, and a score of substances which can be collected throughout the season by any occupier who means making a profit out of his orchard.

Last, but not least important, the fruit farmer must do battle with insect enemies. Grub within the past two years has been a severe scourge not only in orchards left alone, but also where the trees have been bandaged with strips of paper smeared with cart grease. These moth papers just now are in general use, and this catching of the wingless females no doubt is a step in the right direction; but so long as old trees are loaded with Moss and Lichen, their effect, I am afraid, can only be partial. Quicklime dusted over the trees, I learn from a friend, has proved a preventive of attack, or, at any rate where freely used, he has secured good crops of grubless Apples. Lime, under any circumstances, is an excellent material for destroying parasites and rendering the bark bright and clean, and being beneficial to the roots, its more general application certainly is worth consideration.

Soapsuds, again, containing soda is a most excellent manurial wash, which may be used to any extent throughout the winter. The supply being limited, it cannot be used to any extent in large orchards, but I have found it invaluable as a wash for all kinds of fruit trees in the garden. Soda, again, we learn from Mr. Tonks, a gentleman who has devoted much time to the cause and cure of canker, is the material which should be given to trees, both as a cure and preventive. Having the most profound faith in his teaching, and knowing the value of soapsuds in other ways, I must ask all who have not hitherto done so to give this wash a fair trial. Where American blight is troublesome, half a pint of paraffin worked into a pound of soft soap, and converted into an emulsion by the addition of a quart of boiling water, may be added to every six gallons of soapsuds for syringing purposes when the trees are leafless and dormant. All insects touched by this wash will melt away in a moment, and that without doing the slightest harm to the buds; but, catching all at one dressing being hardly pro-

bable, the wash, in a weaker form, may and should be repeated two or three times during the winter. Old, gnarled, and cankered branches, in which the aphid is deeply seated, can hardly be cleared by the use of the syringe alone, but this difficulty can be overcome by thickening a portion of the wash with clay and working it well into the parts affected, a half-worn painter's brush being used for this purpose. Pears affected by scale, a tiny insect often passed over by those who are not aware of its enervating power, may be painted bodily with the best possible result, for not only will the scale be destroyed, but the hard, rough contracted bark will become bright and smooth, the wood will expand, and stocks once blamed for their dwarfing tendency will be restored to favour.

Cordon Pears under glass.—I am glad to see cordon Pears planted out under glass receiving attention in *THE GARDEN* from practical correspondents, especially as I think their cultivation is admirably suited to amateurs. For a long time I had ainery filled with mixed Grapes, and as I always disliked the poor flavour of Gros Colman and Lady Downe's, I determined three years ago to make a change. I divided theinery and made the one half next the heating apparatus a Black Hamburgh house, and inserted a stop valve in the hot-water pipes at the partition. After preparing the border in the other half with turfy loam I planted single cordons of the following: Beurré Diel, Doyenné du Comice (two), Glou Morceau, Pit-maston Duchess, General Todtleben, Josephine de Malines and Fondante d'Automne Pears, and Coe's Golden Drop Plum. I have not had a Plum, nor even any bloom, till this year, when it was covered with blossom, but did not set. So far Doyenné du Comice, Beurré Diel, Glou Morceau, Josephine de Malines, and Fondante d'Automne have fruited best, and although the crops have not been heavy, the Pears have been very large and of the finest quality. At the time of writing (Nov. 18) the Beurré Diel is finished and Glou Morceau is rapidly coming to an end, while Josephine de Malines has not yet been gathered. I rather regret the fruit has not ripened later, and I fancy they may have been hastened by the supply of water not having been quite adequate or the unusually sunny June or both. I propose mulching the border next season. I may say that last autumn I added Easter Beurré and Beurré d'Esperen on the back wall. I should be very pleased by an exhaustive article on the culture of cordon Pears under glass from any of your experienced correspondents, with special allusion to treatment when in bloom to ensure perfect fertilisation, summer and winter pruning and watering, and the most suitable varieties for the purpose, or if the longer paper is not convenient by short notes. It must, I think, be admitted that a choice fruit of the Pears I have named is far superior to any late Grape grown in this country.—AMATEUR.

The keeping qualities of Pears.—I was glad to see the above important subject referred to by one of your correspondents last week. Is it not a question of comparative degrees? I should like to inquire in your columns whether any attempt has yet been made to classify these best of all hardy British fruits according to their merits as keepers. I feel convinced that a good deal of valuable information might be brought out if this matter can be discussed by practical experts in your excellent paper. To make a start, I would suggest that in ordering new sorts the growers would find a few hints as to the comparative virtues of the standard sorts in withstanding decay would be of great service if they were divided into say four classes. I am aware these vary in different seasons very much. 1, first-class keepers like B. Sterckmans, Josephine de Malines, and Easter Beurré. 2, such as Louise Bonne, Glou Morceau, Conseiller de la Cour, and all that remain at core tolerably firm and sound after

they begin to go spotty. 3, Jargonelle, Williams' and such as have a tendency to rapidly decay at centre. 4, to include those like De Rennes, that are only ripe when partially rotten and which seem to be only appreciated in certain parts of the Continent. Another equally important classification would be their bearing powers or productiveness, when Fertility, Louise Bonne, Williams' and perhaps Mme. Millet and Columbia would stand in the first order of merit for market growers.—W. S. MANNING, *The Woodlands, Blackheath*.

* * We dissent *in toto* from any scheme of this sort—comparative, relative, and all the rest of it. When we have six good winter Pears to be had at any price in our best markets it will be time to scientifically classify them and the rest. Mr. Manning along with this note sends us a small box of Pears such as a man who has ever eaten a good Pear would not throw to a pig he cared for.—ED.

WORK IN FRUIT HOUSES.

STRAWBERRIES.

THE past month having been so mild and favourable, early batches in very small pots will now be pushing up their flower, and when they approach the flowering stage they should be moved to the lightest and most airy part of the house, as being most favourable to the setting of the fruit. In the Strawberry house proper this moving the plants is hardly necessary, as the earliest invariably have the best position; but where one man has this accommodation, a dozen are reduced to the veriest shifts in Peach houses and vineries, and here, not unfrequently cramped for space, they look upon a few blind plants as almost a godsend, or a valid reason for giving a little more room. Fresh air from the time they are introduced until the fruit begins to swell is imperative, and yet a certain temperature must be maintained. Fire-heat, of course, will run the house up to any figure in a very short time, but anything approaching dry heat is most injurious, as it necessitates incessant watering and syringing; therefore, to reduce these operations to a minimum, the fermenting material must be regularly turned and supplemented by additions from the reserve. Oak or Beech leaves are best adapted for this purpose, as they hold their heat for a long time; but ammonia being also acceptable, a little fresh short stable manure may be introduced at short intervals. By adopting this mode of coaxing the plants into flower the syringe will not be kept in constant use, neither will fire-heat at all times be necessary; but once the flowers begin to open a sharper circulation through the hot water-pipes, whilst slightly raising the temperature, will keep the air in motion and prevent condensation of moisture on the petals and anthers. As the flower-scapes rise the foliage should be gently pressed down with the hand, and when pollen is plentiful and buoyant the softest camel's-hair brush may be used. Bold and vigorous flowers, it is possible, may set well enough without this aid, but the early season being dead against Nature, it is well to leave no stone unturned—that is, provided the pleasant operation is performed with a very delicate hand. Watering throughout the early stages is a very important matter, for, much as the Strawberry rejoices in root-moisture and resents drought, serious mischief may be the outcome of giving too much when the plants are in flower. Another matter on no account whatever must be overlooked, and that is mild fumigation at short intervals prior to the opening of the first flower. A single fly, it is quite true, may not be visible, but so fatal is green aphid at this particular stage, that no one who wishes to succeed must neglect this part of his work.

Successions.—Assuming that the Strawberry house is quite full of the earliest plants, fresh batches may be cleansed, prepared, and helped forward in shallow pits, firmly filled with warm leaves, whence they must enter the house at the coldest end, as those which have set are removed from the warmest to the stove. Others, again, may be taken into Peach houses and vineries to be coming on as these structures are closed. The quantity of plants introduced, as a matter of course, must

be regulated by the stock and the demand; also by the accommodation, as it is much better to move slowly at the outset than run short at the finish, when one plant will give more good fruit in May than can be obtained from half-a-dozen in March.

Late plants cannot be kept too cool and quiet in cold pits. If plunged, they will require but little water to keep the roots fresh and moist. That little, nevertheless, must be given, and complete rest being so very important, the lights, where glass is used, must be thrown off from daylight until darkness sets in in mild dry weather. Indeed, of two evils, it is much better to expose them to dry frost than run the risk of enervation by coddling, as so often happens when the winter proves unseasonably mild.

THE EARLY ORCHARD HOUSE.

Where the extremely early sorts have been helped forward by mild fermenting material, the buds will now be well advanced, but no change nor advance on 45° or 50° through the night must be made until they come into flower. When the petals begin to show colour, the house for the last time, at least for the present, must be moderately fumigated on a calm day and well syringed the following morning to ensure immunity from fly during the time the trees are in flower. When this stage is reached, a little more fire-heat will be necessary, particularly through the hours of daylight, as Peaches always set best when a free circulation of fresh air favours the ripening and expansion of the pollen. A slight diminution in the supply of moisture at this stage will be beneficial, but unless the weather is dark, wet, or foggy, the walls and floors may be damped when gentle warmth is turned on for the day. From this time forward the maximum temperature may range about 60° through the day and 50°, more or less, by night, much, as a matter of course, depending upon the state of the atmosphere, which may be cold, bright, and clear, or damp, foggy, and mild. If Strawberries have been introduced, remarks contained in a preceding paper, as a matter of course, will apply, the important points being light, fresh air, and gentle warmth; the disadvantages a dark, heavy atmosphere charged with fog. The latter, fortunately, is not so injurious in the open country as it is in the neighbourhood of large towns, where smoke, soot, and other impurities completely destroy leaves as well as delicate flowers in a few hours. So serious indeed in the neighbourhood of London has this impure fog nuisance become, that the Royal Horticultural Society has invited opinions as to the cause and cure. The cause, I think, is palpable enough; the cure may be hoped for when each householder is compelled by Act of Parliament to consume his own smoke.

THE GENERAL ORCHARD HOUSE.

As the Chrysanthemum fever wanes, this house, lately devoted to mops on hop poles, must be put in order for the reception of the trees. The weather hitherto has been, if anything, too mild for the buds, even in the open air; therefore this softening tendency should prompt all who value their crop of fruit not only to be prepared for housing but also to see that the work, on the eve of a change, is carried out. The end of December is quite early enough to start the general house; meantime the cleansing of the pots as well as the trees and finally their proper arrangement should be made complete. Figs, pot Vines, Peaches, Nectarines, and Strawberries are the usual occupants, as it is rather early to introduce Pears, Cherries, and Plums, especially where the principal and most important fruit, the Peach, is to be pushed forward with all speed. These, then, also the latest batch of Peaches and Apricots, may be left out of doors till the end of the year, when they also must be housed, not for forcing, but for the protection of the swelling buds from attacks by birds. The main object indeed in the management of the mixed house, which usually contains a happy family, including all grades, from the Fig to the Apple, is the receiving good crops of fruit which shall lead up to and sometimes ripen simultaneously with crops in the open air. As this end can be attained in a very

ordinary glass structure, not unfrequently without the aid of fire-heat, the most important point in the winter management of these trees is complete rest, not only before, but for some time after they are housed. The buds, as the natural season of flowering comes round, are sure to be a little in advance of their fellows in the open air, and when this stage is reached retarding is at an end, and a temperature suitable to the opening of the flowers and the setting of the fruit must be maintained. If the pots are well plunged, or by means of Fern or litter protected from frost, the roots will take no harm, but birds being so numerous, it may be wise to net the whole batch to prevent an attack upon the buds. Bullfinches instinctively find their way to tempting buds, especially in wooded and pastoral districts, whilst trees in the neighbourhood of towns are attacked and speedily spoiled by the bold house sparrow. To prevent all this mischief and spare an amount of anxiety, early netting in town and country should be performed before the birds get a taste.

Potting.—If pyramids, cordons, or bushes, now clothed with flower-buds, have not yet been brought in or lifted for potting, no time should be lost. We have lifted home-grown root-pruned trees as late as January, and they have borne good fruit the same year, but this is less likely to follow when the nurseryman's trees have to travel many miles and are kept for some days out of the ground. This being so, I would strongly advise all amateur owners of late orchard houses to buy in a few trees annually, grow them for one year at least in the little reserve nursery, and when well set with buds pot up at the fall of the leaf. When late trees are potted in December, the roots, in the first instance, should be carefully pruned and puddled as a preliminary to hard ramming in rather dry soil. Immediate watering may then be deferred, especially if the pots are to be plunged in the open ground. The tyro now about making his first attempt at orchard house culture should invest pretty freely in choice Pears. Neat little pyramids and bushes worked on the Quince and covered with flower-buds can now be procured. If puddled and potted as I have suggested they will set and swell fine fruit next year. W. C.

FRUIT AT THE PARIS EXHIBITION.

It may prove useful as well as interesting to many readers to have a few hints about how they do these things in France. Of course many of the products are identical with our own. But there are also differences alike in the material, and perhaps more in the modes of exhibiting them. On the whole, perhaps the French are ahead of us in regard to the latter, alike in effectiveness and in the methods of securing the greater permanency and freshness of the perishable material. In regard to the latter, the employment of rising stages instead of level tables gives greater prominence to the subjects exhibited as well as brings each dish of fruits or vegetables into greater equality of view line. Experienced jurors will readily understand the significance of this phrase, for not a few exhibits win premier prizes through being so placed as to hit the judges in the eye, whilst others less fortunately placed do not. Hence the frequent practice of patient judges of placing lots that compete closely side by side in identical lines of vision before determining their relative merits. Now with rising stages three or four deep, each dish of Apples, Pears, Grapes is shown up or out to almost equal advantage; or if not, two or more lots running each other a neck-and-neck race for the same honours may be placed on the same level for adjudication, and then replaced. For general effect there can be little doubt that exhibits on sloping banks and rising stages are the most pleasing, and hence the more popular. In these great exhibitions fruit is exhibited on the rise and on the flat in dishes of varying numbers and in huge heaped-up baskets of two dozen or more, while collections of Grapes are shown in quantities varying from a score to 100 single bunches on a base of leaves or green Moss. These have a gentle fall from back to front, the back being flanked

with Vines in pots in full leafage and fruitage. These collections occupy the ends of the tables in the great fruit tent containing the chief display of fruits in the old grounds of the Trocadero, and one of them consists of about 100 single bunches, several of them, however, being repetitions. This is about as unlike as anything can well be to the collections of Grapes of monster size and faultless finish we are accustomed to in England. Such exhibits as these might very well be added to the collections exhibited in France, while it would give new interest and greater usefulness and variety to our flower shows were larger collections of single bunches, each correctly named, added to our present modes of showing collections and single bunches. On the whole, the French exhibits of Grapes are far inferior in size and finish to those with which we are so familiar in England. The vital importance of perfect bloom as a proof of highest finish seems hardly sufficiently appreciated in France, possibly through the largeness and national food and drink importance of Grape culture.

But the French have their revenge over us in their Apples and Pears, especially the latter. Not that we should depreciate our home-grown products in either of these branches of pomology; but after seeing and handling many of our finest home-grown products of both, it must be admitted that not a few of the foreign Pears are grown out of British form and almost beyond our knowledge, though justice also compels me to add that there were hundreds of dishes of inferior samples of both at this great show very far below the average quality of our general products. But many of the smaller dishes of Pears and those huge heaped up pyramidal basketfuls were sights to behold with admiration, and stimulating object lessons towards the further development and improvement of our hardy fruit culture. Among the finer samples of fruit were Beurré Diel, Beurré Superfin, Beurré Bachelier, Beurré Clairgeau, Beurré de l'Assomption, Beurré Hardy, Beurré de Jonghe, Beurré Rance, Beurré d'Esperen, Belle Isle d'Angers, Louise Bonne of Jersey, Doyenné du Comice, Bon Chrétien, Bon Chrétien d'Esperen, Duchesse d'Angoulême, Charles Ernest, Duchesse d'Hiver, Colmar Van Mons, Du Congrès, Colmar de Normandie, Triomphe de Jodoigne, Catillac, Uvedale's St. Germain, &c.

Among the finer Apples here were Grand Alexander, almost crimson in its brilliant colouring, though not larger than the same sort often grown at home; Calville Blanche, large, and almost free from the sharp, prominent veins and contracted lines around the eye so often met with in this country, but take it with all these drawbacks I know no Apple more deserving of a wall than this; Calville Rouge, apparently a red variety of this favourite; Belle Josephine, Belle de Septembre, Cellini, in fine form and exquisite colour; Reinette du Canada in magnificent form over and over again; Reine d'Angleterre, very large; Peasgood's Non-such, Beauty of Kent, Cox's Orange, one dish very fine; Old Nonpareil, Canada Gris, Bedfordshire Foundling, Warner's King, Reine de Reinette, Cox's Pomona, Esperen Rouge, &c. One of the most surprising omissions here was the Ribston Pippin, another great disparity between good dessert and cooking Apples. Obviously the French cook more Apples than they eat raw, nor is this much to be wondered at in a country where white grizzly and black hardy Grapes are the popular dessert and an important article of food among all classes, including even the poor in the streets.

In one of the wings of the palace of the Trocadero the Central Society of Horticulture of France and the National Horticultural Society of Belgium tabled fine collections of Apples and Pears, and there seem to have been other exhibitors. The latter staged 500 dishes of Pears and 300 of Apples, not all, however, distinct varieties, though the number of the latter is very large. Among the Belgian Pears, the following were the more notable for their size or colour, or both; Catillac, General Todleben, Doyenné du Comice, Beurré Durand, Urbaniste, Beurré Philpott, Chaumontel, Calebasse de Verchmont, Defays, Beurré Diel, Delices d'Hardenpont, Beurré

Alexander, Beurré Baltet, Calebasse Blanche, Beurré Hardy, Beurré Sterckmans, Passe Colmar, Belle Angevine, Beurré Magnifique, Beurré Clairgeau, Duchesse d'Angoulême, Van Mons Léon Leclerc, Williams' Bon Chrétien, Williams' Duchess, Triomphe du Jodoigne, Pepin, Fondante des Bois, Fondante du Comice, Annas, &c.

Belgian Apples: Ménage, Warner's King, Autumn Pippin, Incomparable, Beauty of Kent, Pomme Verchalfetter, Magenta, Coquette de Vise, Belle de Flandres, Cellini, Belle Fleur, Lord Grosvenor, Belle Fleur d'Automne, Belle Fleur de France, Reinette d'Italie, Belle de Normandie, Reine du Canada, Panache d'Hiver, American Panache d'Hiver, Gravenstein, Emperor Alexander, Rambour Franc.

Among the French Society's Apples were Reinette Franche, a sort seldom seen in England, an entirely red Apple, Cœur de Bœuf, Lanterne, Charleville, Unique Reinette, Calville Blanche, and the well-known English varieties Alexander, Hoary Morning, and Beauty of Kent. The following were very notable among this collection of Pears: Van Mons Léon Leclerc, Graham, Beurré d'Hardenpont, Beurré Sterckmans, Beurré d'Aremberg, Beurré Alexandre Dumas, Soldat Laboureur, Des Deux Sœurs, Columbus, Nouvelle Fulvie, Van Marum, Chaumontel, Belle Angevine, apparently synonymous with Uvedale's St. Germain [Yes.—Ed.], &c.

Of course it was too late for Peaches and Plums, and very few of either were shown, and so far as these fruit shows are concerned it would seem as if few or no cultivators grew Melons. A few very fine dishes of small Figs of the Ischia type, and of a bluish bloom or colour, and also some fair samples of Peaches were shown. But the fruit show virtually consisted of Apples, Pears, and Grapes, and these fruits, especially the two former, were most creditably represented, and for size and colour were doubtless ahead of most of those grown and shown in Britain. Of course there was no opportunity of testing flavour on this occasion, though it seems an inexplicable fact that in the matter of stone fruits France is far behind us. This must be owing to the culture or manipulation and not to the climate, and is easily explained on the supposition, which is probably the true one, that Peaches, Nectarines, and Apricots (by the way, but few Nectarines seem grown in France) are gathered far too early for flavour. Being perishable and valuable fruits, and easily injured by travelling when ripe, they are gathered and forwarded in a hard condition, and before their luscious flavour, with its accompanying soft flesh, is developed. This being so, it is found utterly impossible to evolve quality after gathering, as is so largely done in Apples and Pears. This explanation is confirmed by the fact that in Paris hotels in October, Peaches, and even Apricots are daily served up with Grapes for dessert. These fruits are even yet green and with clinging stones, and, as a visitor pithily remarked, no better than hollow Turnips.

D. T. F.

Phylloxera and water-tanks.—If "A. W. N." will visit the vineyard of my lamented friend Paul Chenu Lafitte, Mille Secousses, Bourg, near Bordeaux, he will have ocular demonstration on a large scale that the water cure is not a failure, but a gigantic success where it is practicable. At Mille Secousses he can see an oasis in the midst of a desert of Phylloxera and a property saved from ruin by dykes and pumping engines. I believe the pumping was done in mid-winter, when the water was coldest; but if "A. W. N." would write to M. Roger Chenu Lafitte and mention my name, I have no doubt but that he would get a courteous reply with the requisite information. There is an American Vine stock which this pest does not attack and which has been largely planted in France, and I hear that the Vines grown on this stock have given immense crops for the last two years on old Phylloxera land.—J. WHITWORTH SHAW.

Fruit trees in frosty weather.—It would seem as if the mild weather had come to a close and a period of frost entered upon. It is probable that fruit trees in some instances may become frosted when sent by rail, or they may be received

during frosty weather, when planting cannot be proceeded with. The fruit tree nurserymen recommend that the bundles containing the plants, or the latter if unpacked, be placed in a warm cellar or any place where frost cannot penetrate, and there remain until a thaw sets in and planting can be proceeded with. A course to be avoided is that of simply laying in trees and plants loosely by the roots when frost threatens. If this is done, enough loose litter or mats should be laid over the soil to keep frost from penetrating it too deeply. I have known the young root fibres of trees to be materially injured by frost reaching them. I remember that just previous to the severe frost of the Christmas season, 1860, a number of standard Roses came into a nursery in the North Midland districts of England, and they were "laid in by the heels" temporarily, as the nurserymen say, but not covered up in any way as a matter of protection. Not one of the Roses was alive when the thaw came.—R. D.

PLUMS.*

THE Plum is, I think, destined to be one of the most important of our economic fruits, if we can establish the fact that fruit growing will be a profitable source of income in these islands; there is, however, little doubt that a fair profit is derived and will be derived from the employment of land for this purpose, although orchards can never take the place that seems to be claimed for them, by those who have never practically expended capital necessary to succeed in this as in other occupations, which depend upon the millions rather than upon private consumers for the disposal of produce. Theoretically, an orchard containing some 500 trees planted, as I think they may be planted, 9 feet row from row and 6 feet in the rows, will produce, after a certain period of years, from one-half to one bushel per tree, worth 6s. to 10s. per bushel, according to the season in which it is sent to market, the early and late Plums realising a higher price than the mid-season fruit. Theoretically also one grain of Wheat will produce three or four ears, each ear containing some thirty or forty grains. Altogether the gross produce, therefore, of a grain of Wheat seems to promise an enormous return, but the returns of the cultivators of land do not, however, show the enormous profit which in theory they ought to receive, and I may say that the practical cultivation of fruit will disappoint the theorists who are unhappy enough to embark a large capital under the idea that certain crops will be realised. It is, however, very certain that with a suitable soil the cultivation of the Plum will give a handsome return, but the first condition of success must be in the choice of soil. It is perfectly well known to all practical cultivators that a calcareous soil is absolutely necessary, and although lime can be supplied by artificial means, the non-calcareous soil cannot compete ultimately with that in which lime is a natural ingredient. This is recognised by Andrew Downing in his exhaustive book, the "Fruit and Fruit Trees of America." In a paragraph treating of soil he says, "The Plum will grow vigorously in almost every part of this country, but it only bears its finest and most abundant crops in heavy loams or in soils in which there is a considerable mixture of clay. In sandy soils the tree blossoms and sets plentiful crops, but they are rarely perfected. It is also undoubtedly true that a heavy soil is naturally the most favourable one. In certain parts of the valley of the Hudson, near Albany, where the soil is quite clayey, the Plum is healthy, productive, and delicious, while in adjacent districts of rich sandy land it is a very uncertain bearer. These are proofs of the great importance of clayey soil for this fruit." By clayey soils I think we may read calcareous. He also says, "We have found common salt one of the best fertilisers for the Plum tree, as it greatly promotes its health and luxuriance." I confess that I have never had the courage to apply common salt to my trees, considering the disastrous effects of salt generally upon fruit trees.

People are, however, more interested in sorts of

* A paper read by Mr. T. Francis Rivers at the Horticultural Club, Tuesday, November 12, 1889.

Plums than in the niceties of cultivation, and it is generally supposed that a Plum tree will grow anywhere, and, as a matter of fact, when planted for the supply of an ordinary household, both for the kitchen and dessert, the choice of sorts is an important matter, the Plum being so generous when well preserved that it will provide the table with a wholesome and delicious fruit all the year round. I will for convenience divide the use of the fruit into two sections—the dessert and the still room. Taking the dessert first, the earliest of these which ripens when the Bigarreau Cherries have become a source of regret, as things to look back to, is the Jaune Hâtive, or White Primordian, a pretty little yellow Plum, which, though very early, is not valuable for any other quality, and has now almost fallen out of cultivation. Rivaling this sort in precocity, and infinitely superior in flavour, we have the Early Favourite. This is a delicious Plum which in warm seasons will ripen on a pyramid at the end of July, and on a wall about the middle of the month. The Early Green Gage is a very pleasant addition to the Plums of this month. It is not quite equal in flavour to the recognised Green Gage, but it is exceedingly good. I have lately been able to make an addition to July dessert Plums by the Stint. This is very rich and good, and is so dwarf in its habit that it takes no more room than a good sized Gooseberry bush. The Précoce de Berghthold, Early Mirabelle, and St. Etienne are all pleasant early Plums, but too small for useful cultivation.

In August we are well provided with dessert Plums; the earliest to ripen is The Czar, followed by the De Montfort, Early Transparent Gage, the Oullins Golden Gage, Denniston's Superb, Mallard, McLoughlin's, Yellow Impératrice, Green Gage. The Oullins Golden Gage is sometimes classed as a market Plum, and therefore a culinary fruit. Grown on a wall it attains a very large size, and is one of the most delicious, being singularly delicate in flavour. It was imported some years since from France, and was raised, I believe, in the district of Oullins, near Lyons, in France. The tree grows rapidly and vigorously, and a specimen tree produced some years since about 10 bushels of fruit, which were sold at 9s. per sieve. This was about twenty years since. The profit derived from one tree, multiplied by 200, seemed to promise very fairly. They were planted, and in a few years the 200 trees were as large as the original, and are now capable of bearing the same quantity. These trees have never paid their expenses; the fruit is too soft for carriage, and the wood in this country never appears to be capable of ripening enough to give the necessary vigour to the bloom, and my 200 trees instead of producing, as they ought, £4 10s. per tree, will have to be destroyed to make room for other kinds. These are some of the chances of fruit growing. The dessert Plums of September are numerous. The Green Gage will not be over, and we have the Bryanstone Gage, a later variety of the Green Gage; Golden Espersen, the Purple Gage, the Jefferson, Kirke's, Violet de Galopin, Angelina Burdett, Decaisne, Reine Claude de Comte Atthens, a very fine Plum of recent introduction; Guthrie's Late Gage, Boulouf, Abricoté de Brauneau, Transparent Gage. All these are fine dessert Plums, and will certainly suffice for the dessert table during September. In October the list of dessert Plums becomes smaller, the Late Transparent, the Reine Claude de Bavay, Golden Transparent, Coe's Golden Drop, the Blue Impératrice, Ickworth Impératrice, and Grand Duke will last during the first fortnight of this month, Late Rivers coming at the end.

Although the Plum takes rank as a dessert fruit, I think this quality mainly exists in the varieties of the Green Gages, and its real importance lies in its economic value as a culinary and preserving fruit, and here it is unsurpassed. It is very hardy, enormously productive, and forms an important article of food, and therefore always commands a leading position in the fruit markets. To obtain a good price it is important to plant those sorts which are either early or late, but it is, of course, inevitable that these conditions cannot always be maintained. Owing to the good fortune of my father in

raising a very early variety, I have been successful in realising a good price, and the Plum which has done me yeoman's service is the Early Prolific or Early Rivers. In some years this fruit has been gathered on July 20; in ordinary summers the gathering commences the last week of July. The next to ripen is a seedling of my own, The Czar, which has become almost as popular as the Early Rivers. I have recently raised three early Plums, which I think will prove valuable for market. These are the Bittern, Curlew, and Heron. After The Czar I have The Sultan, a very large red Plum, then the Belle de Louvain. With this Plum the glut sets in, and the market is amply supplied with Victoria, Diamond, Mitchelson's, Belgian Purple, Prince of Wales, Prince Englebert. These are the principal midseason market Plums. The later market Plums which generally give an increase of price are Pond's Seedling, Autumn Compôte, Archduke and the Late Orleans. I find the Early Orleans so delicate in the skin that it is difficult to pack without being injured, and the noble-looking fruit, the Cox's Emperor, is liable to the same defect; this latter bears such quantities of heavy Plums that they rot on the tree in damp weather. The last Plum to gather from the tree is a variety from Yorkshire; this is the Wyedale. The fruit will hang until the end of November, and although very acid to the last, it is pleasant to be able to gather fresh Plums.

The Monarch, a recently introduced Plum, I believe, will be a very valuable market Plum. It is ready to gather generally about the 25th of September. It is a very large purple fruit, hardy, and of excellent quality either for preserving or cooking. The Grand Duke is another late seedling; the fruit is very large, and on a wall it attains a very good flavour. I do not, however, think that it is desirable to plant it on a large scale for the orchard—the fruit is too heavy to resist the autumn gales. The Autumn Beauty or Belle de Septembre is a very valuable late Plum, and in some soils succeeds well, but I think it does not flourish in all districts.

The Mirabelle Plums are not at present grown in England for preserving, but I believe that a considerable industry exists in the neighbourhood of Metz for the preparation of the delicious preserve known as the Mirabelle de Metz. There is no reason why this industry should not be carried on in England, as the Mirabelle ripens and bears freely in this country. The fruit makes a singularly delicate preserve. During the last year or two my trees, which bear very freely, have been attacked by blackbirds, who appear to have only recently discovered their excellence. Seedlings which I have raised from this Plum vary in a singular manner. One of the seedlings has produced a Plum resembling the Green Gage in size and flavour, rendering the original parentage of the Green Gage less obscure. Another seedling bears a small rose-coloured fruit, very pretty and ornamental.

There is, I think, a very considerable field open for drying Plums. We already possess the Impératrice, but they ripen rather too late, as I believe that for drying Plums sun-heat is required as well as stove-heat. Amongst my numerous seedling Plums I have discovered some which appear to me to fulfil the conditions required for drying, and as they ripen in August there will be time for the sun to assist in the process. One of these seedlings resembles exactly the Guimaraens Plum, so popular in Portugal for preserving, so that I hope some day to rival the delicious preparations of the convents. There will, I am sure, be ample room for us, and I shall not take away their business.

I may say that my soil consists of clay and strong loam lying upon a subsoil of drift clay and cretaceous gravel and sand, and that it has been trenched 2 feet deep on an average, and that previous heavy dressings of farmyard manure were applied, which have not yet been exhausted by the trees.

The abundant crops produced by the Plum and the energy required to produce the hard shells protecting the seed affect the vitality of the tree if crops of fruit are frequently produced. It is not necessary to plant at any great distance apart, my own trees are dwarf standards, and planted, as

a rule, 9 feet from row to row. The tree is impatient of pruning, and when fruit is produced in quantity it is hardly necessary to prune at all. I, however, suppress the gross shoots which are occasionally produced. These are dangerous, as they disturb the balance of the tree. All pruning should be done in summer or early autumn. In the severe winter of 1870, having nothing for some of my men to do, I set them to prune some of the lower branches of my trees, with the most disastrous results. Nearly every wound resulted in canker. It is a lesson which I have never forgotten.

The Kelsey Plum, which seems to be attracting some curiosity, is a Japanese variety, which has been planted to some extent in California. A correspondent to whom I wrote some time since, and who happened to be a Devonshire man, informed me that he thought it might succeed in the south and west of England, but he thought it too tender for general cultivation. It is the size of an ordinary Elruge Nectarine, with very solid flesh and indifferent flavour. It may possibly succeed as an orchard house fruit, but it remains to be seen whether it will prove a desirable acquisition. The dessert Plums attain a very high flavour when grown in pots, and they may be placed out of doors to ripen, and an annual crop can be ensured. They form a very pleasant addition to the fruit garden under glass. An orchard house full of Plums alone is very ornamental, as the colours may be alternated, and fruit gathered from the beginning of July to the middle of October.

Espalier and wall trees produce remarkably fine fruit, but on some walls the tradition has arisen that the old-fashioned Green Gage is extinct. This is a mistake, arising from the fact that on these old trees a few fruits have been produced which have developed to a very large and luxurious condition. The Purple Gage is also a curiously rich Plum, but is generally shy in bearing.

JOHN CLAUDIUS LOUDON.

I HAVE been lately reading a sketch of the life of this remarkable man, whose name has endeared itself to, and is venerated by, every gardener, botanist, and plant lover, and I must confess I never read anything before that so instilled me with self-reproach. The question it would suggest to most minds, whose owners are not inflated with self-satisfaction, is, compared with this, what have I done to show for having lived? It was written by his widow and is attached to his "Instructions to Young Gardeners." Every young man should read this memoir. If it does not teach him a wholesome lesson, I do not know what will. Mr. Loudon's indomitable perseverance and unflagging industry, and the marvellous amount of work accomplished are perfectly astonishing, and that, too, under the adverse circumstances of shattered health, paralysed limbs, and ruined fortune. What would have filled most men with despair seems only to have urged him on to further exertions. It is deplorable that the efforts of such a dauntless mind and resolute will should be constantly hampered and trammelled by pecuniary difficulties. Such activity now-a-days would certainly win the recompense of reward. The "Encyclopædia of Plants" alone is an enduring monument of patient industry, and would of itself be enough to satisfy the desires of most ordinary ambitious men. Few are aware of the vast amount of research necessary to produce such a work as this, while its scheme for general utility leaves little to be desired. In parenthesis, why does not some spirited publisher continue the supplements to this important book by adding the discoveries of the last five and thirty years? The last was issued in 1855. It is sad that the value of such a laborious and truly useful work should be diminished by the need of its continuation down to date while we often see such immense sums spent in the production of books of only fugitive or fleeting interest, which are of little use to the general public and are soon forgotten.

If these appendices were periodically issued—say at intervals of twenty or thirty years—it would

ever remain a standard work, indispensable to every student in the various branches of the vegetable kingdom.

The perusal of this volume has afforded me more real and continuous pleasure than any other I have ever looked into. Yet this was only one of a series of encyclopædias of a similar character compiled by him. The "Encyclopædia of Gardening" was at the time it was written, and for the matter of that still is, a vast storehouse of reliable information on the various departments of the subject of which it treats, although the great improvements in horticultural erections, chiefly owing to cheap glass and changes in modes of cultivation, render it in parts somewhat obsolete. He was the author of several other works and pamphlets, edited several periodicals, and at the same time conducted a large practice all over the kingdom as landscape gardener, all the while a hopeless and pitiable invalid. I have by me a quantity of the original *Gardener's Magazine*, which was started and edited by him. These contain even now a great deal of useful matter, and are well worth perusal. They were published monthly, in octavo book form, price 3s. 6d. It is very interesting and valuable, as being the pioneer of horticultural periodicals now so numerous, although it hardly meets the requirements of the present time. Mr. Loudon appears to have been, like most large-minded men, of high principle and amiable nature. The late Mr. John Scott, of the Merriott Nurseries, Somerset, knew him personally. He once told me that to see him was to love him, and he always had an encouraging word for striving young men. Mr. Scott remembered on one occasion he came to see some large establishment—I have now forgotten where—when Mr. Scott was the head gardener. The condition of the plant houses pleased him so well that he put his hand on Mr. Scott's shoulder and told him he was one of the best cultivators he had ever known. The engraved steel portrait which accompanies the brief biography betrays but too well the inroads of disease, but does not convey any impression of the leading traits of his character—unwavering energy and dauntless purpose. I hazard a conjecture that it will be long before the gardening world will see another John Claudius Loudon. J. M.

Charmouth, Dorset.

ROBERT MARNOCK.

PERMIT me to tender you my hearty thanks for your touching tribute to the memory of one of the most cultured horticulturists that adorned this or any other century. I had the privilege of a slight knowledge of Mr. Marnock for many years, and never met him without feeling the better and the richer for it. We first became acquainted by means of the *United Gardeners' and Land Stewards' Journal*, a journal started on the joint-stock principle with the twin purposes of combining business and philanthropy and consecrating both to the service of horticulture. It was a new and rather risky venture, as the results proved, and needed business talents of the highest order in the editor, and these were manifested in an eminent degree by Mr. Marnock's editorial management of the paper.

In fact, of the deceased gentleman it may emphatically be said that his gentleness made him great. This quality, combined with his broad, deep and ripe wisdom, formed the basis of his success. It would ill become me, and indeed we have few men among us who are in any way qualified to pass an exhaustive judgment on Mr. Marnock's landscape work. Suffice it for the present to state that I never remember visiting one of his gardens or landscapes without feeling the richer and the better for it. Perhaps few men have ever been able to put more of themselves into their work while moulding the richest scenes of Nature and the most pleasing conceptions of art into scenes of chaste and cultured beauty that afforded immediate and abiding satisfaction.

I agree with you that much of this lasting and abiding pleasure of his landscapes arose from his keen love and reverent imitation of Nature in her happiest mood. In fact, so unique was Mr. Marnock's

style, that not a few of us could read off their authorship at sight as readily as if his name had been writ large across them, which in fact it was in a yet deeper and more permanent manner.

D. T. FISH.

MARKET GARDEN NOTES.

CARNATIONS.—There is a brisk demand for these at the present time, and I know a florist who usually cuts about £20 worth of bloom from a not very large piece of ground. Of the many hardy flowers now grown for cutting, I doubt if there is one that is more profitable than the Carnation. It should, however, be borne in mind that the demand is mainly for self colours, and all that is needed for market purposes is a good white, pink, yellow, crimson, or scarlet variety. The tints that are intermediate between these decided colours are scarcely worth growing, while edged and flaked kinds are not much in request. The florist above alluded to adopted a rather novel way of getting what he wanted. He commenced by raising a quantity of seedlings, and from these he selected the colours that best suited him, and then propagated from them in the usual way. I think this is not at all a bad plan, as seedlings make much stronger growth than named kinds, and layers from them naturally partake of their vigour, so that a good start is made. In purchasing named kinds it is often difficult to get good strong plants, and this, I think, is one reason why many fail to grow them well. A weakly plant naturally gives a weak layer, and thus defective vigour is perpetuated. This may, of course, be obliterated by several years of careful culture, but I have always found that it is more difficult to put vigour into the Carnation than into almost any other kind of popular hardy flower, and I believe that by constantly raising seedlings and propagating the best of them the results would be much more satisfactory than is often the case.

CHRYSANTHEMUM ELAINE.—For the past two months this has occupied a prominent position in the London markets. Those who grow it largely manage their plants so that they obtain from them a succession of bloom from the end of September until the bulk of Chrysanthemums come in. For early flowering, the cuttings must be put in in December and the plants grown on without stopping, getting them into their blooming pots in May. By stopping at intervals through the summer a succession of bloom will be kept up, and I find that it is possible to have this Chrysanthemum up to the end of November. To have them so late the plants must be stopped early in August and kept in the open till the middle of October. The blooms, of course, will not be so fine as earlier, but they will be large enough for decoration, and owing to their fine form and wonderfully pure colour they are sure to meet with a ready sale. By growing Elaine to come in as early as possible, and growing a late kind that can be kept out till October is far advanced, Chrysanthemums may be cut from the same house from October till January.

STRAWBERRIES WATERLOO AND NOBLE.—However well the first named of these two varieties may suit private growers, I doubt its finding much favour with those who supply the London markets. The berries are of a deeper crimson than those of almost any other kind in cultivation, and the Covent Garden salesmen have always preferred the kinds that show up well in the baskets. It is for this reason that Sir C. Napier is unrivalled as a market Strawberry, that is for culture under glass, for in the open it seldom takes on the fine colour that makes it so attractive when thoroughly well grown indoors. Strawberry culture for profit has, however, developed in a wonderful manner during the last few years, and a great bulk of this fruit is now required for other than market purposes. The enormous and annually increasing trade in jam has given the Strawberry grower an opportunity that he otherwise would not have, and a fruit that may not take well in the large market may be an ideal one for jam making. For the future we shall have to judge of a Strawberry not by its fitness alone for market purposes, but also by its suitability for preserving. I am inclined to think that Waterloo will come to

the front for this purpose. It is rich in colour, firm, and the flavour, as far as I have yet been able to judge, is good. I should certainly advise those who grow largely for jam-making to give Waterloo a trial. As to Noble, there is very little doubt as to the position it will take among market kinds. Its earliness alone would entitle it to a good place, but it has other qualities that are in their way quite as remarkable. It is a wonderful cropper, has a very strong constitution, and forms a mass of deep green, robust foliage that is easily distinguishable from that of other kinds. This will not be wondered at when plants are taken up, for I never saw a hardy plant of any kind make such a thick mass of fibrous roots as this Strawberry does, with the exception of the common Privet. I should know this Strawberry from all others by the roots alone. I cannot, however, consider the flavour good. To me it is a rather insipid Strawberry, much like Marguerite, which I should not be surprised to know was one of its parents.

J. C. B.

SOCIETIES AND EXHIBITIONS.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the general committee of this society was held at Anderton's Hotel on Monday evening last, Mr. R. Ballantine being in the chair and a large number of the members present.

The hon. sec., Mr. W. Holmes, announced that the annual dinner had been fixed for Thursday, the 19th inst., at 6 o'clock sharp, when Lord Brooke, M.P., has promised to preside. It is expected that numerous visitors will be present; among those already promised are Sir Edwin Saunders, Sir Guyer Hunter, Sir Louis Pelly, Mr. Shirley Hibberd, Rev. W. Wilks, Mr. Harry Veitch. The musical arrangements will be under the direction of Dr. Haskins, and a very enjoyable evening is anticipated.

It was reported that several members of the society on their way to the Hull show paid a visit to York, where the Ancient Society of York Florists was holding a capital exhibition, and a hearty welcome afforded to the N. C. S. representatives. It was unanimously resolved that a vote of thanks be accorded for the kind reception.

With respect to the society's provincial show at Hull, a larger representative body from the National Society were of course present. The Hull show was stated to have been most successful, a greater number of blooms by about 500 being staged than on the same occasion last year, and the takings at the doors proportionately larger. On the recommendation of the floral committee, a silver medal was awarded to Mr. Owen, of Maidenhead, for his display of new Chrysanthemums at the National show last month.

Mr. Harman Payne reported as to Ghent centenary show, and handed to the chairman the gold medal presented to him in recognition of the official co-operation of the National Society with the Ghent Society. It was resolved that, as foreign corresponding secretary, Mr. Payne be requested to acknowledge the presentation in suitable terms.

M. Anatole Cordonnier, of Roubaix, was elected a foreign member of the society, and forty-one new members and Fellows were also enrolled, making the total number 673. Applications from the Batley Society and the Northern Horticultural Society of Launceston, Tasmania, for affiliation were received and granted.

With regard to the grand centenary exhibition to be held at the Aquarium in Nov., 1890, Mr. Jukes gave in the report of the sub-committee, which was to the following effect: That the show be open four days, viz., the 11th, 12th, 13th, and 14th Nov. That the judges for plants be Mr. D. Donald and Mr. G. Prickett; incurved blooms, Mr. R. Dean and Mr. Geo. Gordon; Japanese blooms, Mr. Douglas and Mr. Kendall; miscellaneous classes, Mr. Castle and Mr. Head; fruit and vegetables, Mr. Barron and Mr. J. Roberts, with the following gentlemen as reserves: Messrs. Beckett, Miles, Molyneux, Wildsmith, Orchard, and Harry Turner. The report,

after some discussion upon the dates, was received and accepted.

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee took place at the Caledonian Hotel on the 29th ult., Mr. William Roupell presiding in the unavoidable absence of Mr. George Deal. The minutes of the last meeting having been read, a letter of sympathy with Mr. William Richards, of 41, Wellington Street, was signed by all the members present, expressing condolence with him in his illness, and trusting that the voyage to Australia he is about undertaking will prove successful in restoring him to health. Several sums of money from special sources were announced. From the Chiswick Gardeners' Society, proceeds of a concert, £12; from collecting boxes at the following flower shows: Bristol, per Mr. Vallance, £1 11s. 6d.; Rugby, per Mr. Bryant, 6s. 8d.; Wimbledon, per Mr. Lyne, 14s. 6d.; and Twickenham, per Mr. Bates, £2. Sums by collecting cards were also announced, and a hearty vote of thanks was awarded to the senders in each case. Some correspondence was read from Mr. Tait, of the firm of Messrs. Dickson, Brown, and Tait, of Manchester, with reference to a proposal made by him to place a child upon the fund. The matter was adjourned pending further negotiations. A tender from Messrs. H. M. Pollett and Co. for printing the necessary number of copies of the annual report and list of subscribers was accepted, and the hon. secretary was instructed to obtain 5000 new subscription forms. A vote of thanks to the chairman brought the proceedings to a close.

Outdoor flowers and the frost.—The other day growers for sale were lamenting that they could not find a market for their indoor flowers, as there were then so many out in the open, and some hoped that frost would come and give the latter a nip, and sure enough they have now got their desire, for the beauty of outdoor flowers has vanished. Although most are slaughtered, the Hellebores are holding their own bravely, and so are the Anemones, and these no doubt will be preserved to us, owing to the covering of snow which has sheltered their flowers and buds.—S. D.

Death of Professor W. R. McNab.—Prof. W. R. McNab, M.D., died suddenly on the 2nd inst. at his residence, Cabra Road, Dublin. He was well and active on St. Andrew's Day, having been one of the acting delegates on that occasion of rejoicing among the sons of Scotia in Ireland. He had been for some years professor of botany to the College of Science, and was an authority on palaeontological botany. His microscopic examination of the leaves of Conifers attracted attention years ago. As is well known, he came of a line of noble gardeners, his father and grandfather having been curators of the Edinburgh Garden for many years.—F. W. B.

WE learn that Mr. R. Upcher, landscape gardener, Penzance, has been awarded the medal of the Royal Polytechnic and Natural History Societies of Devon and Cornwall as a first prize for his report on the exotics flourishing in the open air throughout the winter in Cornwall. This will shortly be published.

Crocus Scharojani is inquired after in THE GARDEN, October 12 (p. 353). It flowered this autumn in my collection of Crocus species. I possess nearly all, if not all, the species of Crocus collected by Mr. G. Maw, and, therefore, most of those he figured in his noble monograph of the genus.—P. BARR.

Lecture on Ferns.—An interesting lecture on British Ferns was given by Mr. E. J. Lowe, F.R.S., before the Natural History and Gardening Society, Bedford Park, on Monday last. The lecture was illustrated by a series of beautiful prints of Ferns and dried specimens.

Erratum.—In THE GARDEN of November 30, p. 493, for *Cypripedium Meduse* read *Cirrhopetalum Meduse*.

Names of plants.—*George Flenwell*.—Poor form of *Maxillaria grandiflora*.—*Ance*.—A *Cypripedium*, but impossible to tell what variety or species.—*V. A.*—1, *Berberis dulcis*; 2, *Euonymus europaeus*.

WOODS & FORESTS.

A FACT FOR THE FORESTRY COMMITTEE.

TO THE EDITOR OF THE GARDEN.

SIR,—Some time ago I commented in *THE GARDEN* on the profits, on paper, of timber growing as recorded by Mr. D. F. Mackenzie, and which averaged fully 150 per cent. It has been a wonder to me and many others how Mr. Mackenzie got at it, seeing that little else than his magnificent totals were vouchsafed, but he is an officer and noteworthy member of the Scottish Arboricultural Society, and one does not expect anything but truth and soberness from such a source. It has occurred to me that the following fresh contribution from Mr. D. F. Mackenzie's pen to the *Timber Trades Journal* may help to clear the mystery up:—

It was but the other day I visited, with a friend, the home of the Douglas Fir in this country, where one can see the tree in its glory. We could only make a hurried inspection of the woods, but took sufficient notes of measurements to enable us to calculate approximately the correct amount of timber per acre. The wood was planted 1844-7 with plants about 20 inches in height, reared mostly in pots in a cold frame, planted out from 25 feet to 30 feet apart, with Silver Firs as nurses. The soil on which they are planted is a deep gravelly sand, having only a thin layer of loam. The atmosphere is extremely dry in summer days, often fogs at night, and very wet in winter. By actual measurements and calculation I found about 12,000 cubic feet per acre, and that on soil not worth, from an agricultural point of view, 2s. per acre. Nor could it be at all cultivated except by spade.

I have been twice recently at "the home of the Douglas Fir" in Scotland, with an excellent guide, without ever stumbling on this acre of marvels, nor can I find anybody who has done so, and I am, therefore, driven to *THE GARDEN* for further information, as I know my communication will then fall under the eyes of those likely to know.

Bear in mind, 25 feet to 30 feet apart means between fifty and sixty trees to the acre, nearly 220 cubic feet to each tree on the average, and £600 value to the acre in about forty-three years, reckoning the price at the low figure the last fall of Douglas Fir is said to have fetched per foot. And this on soil "from an agricultural point of view not worth 2s. per acre."

YORKSHIREMAN.

P.S.—Is there a single Douglas Fir in all Scotland reaching or exceeding half the above average dimensions? If not, on what are the above calculations based? "I found," says Mr. D. F. Mackenzie, "by actual measurements and calculations about 12,000 cubic feet per acre."

Grouping Oaks in parks.—Amongst all our native trees the Oak stands pre-eminent; in fact, to my mind, a park without Oaks is devoid of its greatest source of interest; and a wide expanse of verdure, in which the Oak has no place, always impresses me with a sense of incompleteness. The Oak amongst trees is the emblem of strength; its sturdy growth, spreading habit, and dense foliage render it both useful and ornamental. Happy are those who possess in their domains some fully-developed examples of this fine old English tree. This advantage can, however, only be enjoyed by the few. Several generations are required for the proper development of the Oak, and it is this fact probably which deters the owners of newly-formed parks from planting it; but if we cannot have ancient specimens we may, by planting in groups, obtain a very fair idea of the true beauty of the Oak. By grouping a few young trees we may effectually realise the characteristics of an aged specimen. If planted rather closely the branches soon inter-

mingle, and the group eventually develops those features which form the charm of a large tree. When seen from a distance—and woodland scenes should be always thus judged—the individuality of each tree is scarcely distinguishable, the effect being that of a single, fully-developed, and luxuriant specimen of Oak.—J.

FORMATION OF HEDGES.

IN answer to "B." (*THE GARDEN*, November 23, p. 492), the first important step in the formation of hedges is a thorough preparation of the ground by trenching and draining where necessary. In cases where the soil is exhausted or naturally of a poor, thin texture, a good dressing of well-decomposed rich manure should be applied and mixed with the staple as the work of trenching proceeds. Assuming that the line of fence has been marked off, the ground along the proposed site should then be trenched about 4 feet broad by about 2 feet deep, the surface soil being placed in the bottom of the trench grass-side down. This, in course of time, will prove of great value as food for the roots of the young plants; the clean friable soil should then be placed on the top of the sods to form a pliable bed for the roots of the plants. In places where the subsoil consists of poor materials it had better be removed and a portion of good soil substituted. When the ground is naturally of a damp character, the bed for the hedge should be raised a few inches higher than the general level of the surface in its vicinity. This will prove advantageous, even although the ground has been thoroughly drained. On well-prepared ground of ordinary texture the common Hawthorn makes the most efficient fence against the inroads of cattle, and as it is quite hardy and thrives on exposed situations if properly cared for in the way of pruning, it soon forms a thick, durable fence, which affords considerable shelter to crops and cattle. Sometimes the common Beech is mixed with the Thorn in the formation of hedges, and in cases where the ground is of a dry calcareous nature the plan is to be recommended, as it thrives much better than the Thorn in this class of soil, and thus adds stability and efficiency to the fence. The Hornbeam and Blackthorn or Sloe are occasionally used as hedge plants; both are perfectly hardy and thrive on a great variety of soils in exposed situations, but the Thorn and Beech are preferable. The common Holly and evergreen Privet are principally used in the formation of ornamental fences, and although the Holly is rather a slow-growing plant, yet when thoroughly established it makes a very efficient fence and affords excellent shelter. Privet is too feeble to form a substantial hedge by itself, yet it can be planted with advantage here and there among Thorns, as it ramifies in all directions and imparts a fresh, lively green colour in winter. In the successful culture of hedges it is very important to use stout, sturdy plants that have been twice or thrice transplanted during their nursery career, as such plants are generally well furnished with fibrous roots, which soon take to the soil and give them a good start at the commencement. After the ground for the hedge has been prepared in the way specified, stretch a line right along the centre, and in cases where the line of fence consists of a series of curves or bends, which is not unfrequently the case, these should be laid off in as uniform a manner as is consistent with the configuration of the ground. With a common spade cut out a notch along the line of sufficient size for the roots of the plants, and when Thorns are to be used these should be prepared by cutting off the stems of the plants with a sharp knife about 2 inches above the base of the stem, by which means the plants will be induced to produce some three or four suckers from the collar of the plant, and thus promote the thickness and efficiency of the hedge. Any damaged roots had better be removed, and the extreme points of such as are long and straggling cut off. The plants should then be inserted from 6 inches to 8 inches apart, and at such a depth that the stumps of the roots are only visible above ground when finished. Sometimes a

double row of Thorns is used, keeping about 10 inches between the lines, but in all cases where the ground has been thoroughly prepared and strong plants used I find one row quite sufficient. In cases where the Privet is to be mixed, it may be inserted at a distance of about 5 yards apart. The hedge should be protected from cattle until it becomes established, and particular attention should be paid for a few years to have the ground on both sides of the fence occasionally hoed to keep down weeds, and even in cases where no surface weeds appear at all the surface should be broken several times with the hoe and rake during the growing season. When pruning becomes necessary, the best shape is that of an inverted wedge—broadest at the base, and gradually tapering in a uniform manner to the top. Beech may be planted at the same distance apart as the Privet; the stems, however, should not be cut off, but any straggling branches may be pinched or cut back to balance the top of the plant.

J. B. WEBSTER.

Pinus densiflora.—This species and *Massoniana* are two of the most prominent as well as the most common among Japanese trees, and give that air of peculiarity which all have remarked; and yet, though hardy, they are but little planted in this country, because in their young state they are indistinguishable from the Scotch Fir. One of these is *Pinus densiflora*, which when full grown is a very distinct and handsome tree, with a massive, rounded contour; it surpasses in size and beauty the Stone Pine (*P. Pinea*), and is in its native country of far more rapid growth. This should be planted as an isolated specimen tree, and will thrive under the same conditions as the Italian Stone Pine.—E. W.

Shade trees.—When bright sunshine prevails how delicious it is to retire to the cool and welcome shade of leafy, overhanging trees. At such a time the grandest of Deodars, or the finest of Wellingtonias, has not half the charms of the humblest Oak or the most uncouth Chestnut. To get beneath leafy branches, if but for a few minutes, seems to give immense relief. What inhumanity it is to turn even dumb animals into an enclosure where there are no trees to break the rays of the summer sun. Trees planted here and there, though but ever so few, would in a few years cast on the ground shadows that would be welcome both to man and beast, whilst the beauty of the landscape would be increased. When planting, do we think enough of the probable wants of posterity? Londoners have much to be thankful for as regards the rich umbrageous foliage that overhangs the great parks of the West End. Our forests, our woods, our groves, planted in times gone by, that they might grow into money's worth, are to us, during the heat of summer, of incalculable value. Our magnificent forest trees are the glory of our land. May our fondness for the denizens of other lands not make us forget the debt of gratitude which we owe to our forefathers for the trees and plantations which they have left us, nor neglect to keep for posterity a supply of those noble trees that are so richly endowed with the power of shade.—D.

Pinus reflexa.—This large and valuable Pine tree, says Mr. Lemmon, was, until lately, considered a variety of a certain white Pine found on the Sierra Madre Mountains, Mexico, but the late Dr. Engelmann declared it to be a distinct species. This Pine resembles the common Sugar Pine of California, but the cones are not half so long, and even when young the scales are much reflexed, suggesting the doctor's new name for the species, *Pinus reflexa*.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ROSE GARDEN.

THE STANDARD ROSE STOCK FOR THE FUTURE.

For a number of years the growing of Roses, though always considerable, has been increasing to such an extent, that nurserymen began to be at a loss whence to get their stocks for dwarf Roses as well as standard ones. The practice has become nearly universal of raising seedlings of *Rosa canina* as well as the Manetti, polyantha, and other kinds for this purpose. But with all these species there are so many well-known inconveniences, that it would be most desirable to find a more suitable type for the stock.

Everywhere nurserymen try to get hold of such a species, and we also have been experimenting for upwards of ten years, choosing especially Central Asiatic kinds for the purpose of having a stock which would be perfectly hardy. The beautifully straight stems, almost thornless, of *Rosa laxa* (Retz) led us to suppose that this species would answer our purpose. Our attention once fixed upon it, we soon found many more qualities, which will place it above all competition for this special purpose.

While other kinds are very troublesome, through their numerous shoots rising directly from the roots, *Rosa laxa* never forms any suckers. The stems are not only perfectly straight and almost without thorns, but they scarcely branch out at all, and, moreover, they are very hard and firm, containing very little pith; for this reason they will withstand any amount of frost, and have proved perfectly hardy without any cover, even in the severe winters of 1870 and 1879 to 1880.

Another very important thing is the relatively short season of growth of *Rosa laxa*. While *Rosa canina* and its congeners keep growing late in autumn until frost forces them to rest, *Rosa laxa* will finish growing by the middle of September. In consequence the Roses budded on it are forced to rest in good time and so ripen their wood thoroughly, thus resisting frost much better and becoming far more hardy when budded on *R. laxa*. Roses forced to rest early in this way will of course be excellent for forcing.

Any kind of Rose takes very easily when budded on *Rosa laxa*. They will join firmly, while, for instance, Roses budded on the Manetti will sometimes fall off again. We possess a variety of standard Roses, as well as dwarf ones, budded two and three years ago on *Rosa laxa*, so as to be perfectly able to judge.

The growing of standards of *Rosa laxa* is very easily done. The plants should be treated just like other nursery stock, but not

be cut back until the growth to be used for a stem is formed and has attained the height required. We possess large pieces of land occupied by such standards of *Rosa laxa*, and to a grower of Roses it would be a pleasure to walk through them and to see the clean, straight stems. While the land planted with other Rose stocks can hardly be kept clean on account of the suckers, it is easy to pass through between the rows planted with *R. laxa*. All these are qualities which will put *Rosa laxa* above any other kind of Rose for a stock. Besides, it is a nice ornamental shrub, resembling somewhat *Rosa pomifera*.

Zurich.

OTTO FROEBEL.

PLANTING ROSES.

We should hear of fewer failures in Rose growing if more care in planting them were taken. Loose planting is a serious mistake. Making the soil firm about the roots should be insisted upon in every case. Nearly all Rose trees fresh from the nursery have only a few roots, and for this reason the few they have require to be so placed in the ground that they should come immediately in contact with a kindly soil. A sandy soil that is fairly dry can hardly be made too firm, but ground of an opposite nature should when wet be only lightly trodden, and the final treading over the roots delayed until the ground is in a more suitable condition. Roses are, perhaps, sent longer distances by rail than any other hardy plants; this often necessitates their being out of the ground for several days. During this time more harm is done to the plants than many people imagine; it is not unusual in such cases to find all the fibrous roots quite dead on arrival at their destination. I do not think it is a wise policy to send too far from home for what can, in eight cases out of ten, be got nearer at hand. In the case of Roses, it is better to deal with plants that have been out of the ground two days only. I have good reasons for not looking kindly on the free-packing system, a long experience having convinced me that it is better to pay a fair price for packing, in which case there would be sufficient material placed round the roots to protect them from the air and prevent them being dried up. In every case where Rose trees have come by rail more than a few hours' journey the packing should be immediately removed, and the plants placed in water and allowed to remain there for twelve hours.

If Roses cannot be planted until February or March, they will be in better condition if they are obtained at once, and carefully placed in some fine soil or leaf mould on a sheltered border until wanted. They will begin to make new roots during the winter, and if these are carefully preserved at planting time, the plants will become established sooner than would be the case if they had just been lifted from the nursery. There is no doubt room for a difference of opinion respecting the value of laying a mulch of half rotten manure over the roots. I think it is a mistake to do so, as a thick mulch tends to keep the ground colder and the soil damper about the roots than is desirable. There is no necessity to be anxious about the roots of our Roses as regards frost; it is the branches which suffer. I noticed last winter the condition of some newly-planted Rose beds that were heavily mulched all the winter, and the result was that the surface soil did not become dry all the winter, and in the spring, when the covering was removed, the ground had gone together into a compact mass, retaining more moisture than was good for the plants. When stirred up it lifted in large lumps, and was in about as bad a condition as could be; while the surface of some beds near them which had not been mulched was dry, and when moved about with a fork worked into a fine tilth. The Roses in the unmulched beds succeeded best during the summer. According to my experience, it is a mistake to mulch the beds in

winter, and even in the summer until the sun has gained sufficient power to warm the soil to a good depth.—J. C. C., in *Field*.

FRUIT GARDEN.

PHYLLOXERA AND TANK BORDERS.

WITH regard to the communication of "A. W. N." on this subject at p. 484 (Nov. 23) I beg to say that my experience of Phylloxera leads me to say that there is not much use in flooding a water-tight Vine border in January, spring, or late in autumn, as doing so will not have the desired effect. Of this I am quite certain, having immersed about eight dozen Phylloxera-infested Vines for fifteen days during the hibernating period of the insect, and afterwards dressed both roots and stems of the said Vines before replanting with supposed remedies almost strong enough to destroy the Vines without in the least degree affecting the Vine louse, which the following July appeared in greater numbers and virulence than before. July and August are undoubtedly the proper months to flood water-tight Vine borders for a few days to kill the Phylloxera on Vine roots. But, as already stated, there is no earthly use in flooding the borders when the Phylloxera is hibernating, as at that time nothing short of "cremation" or immersion in boiling water or brine will annihilate them. Submerging the roots in July and August for three or four days together will destroy the young and fully grown insects thereon, and if the application be repeated a week later it will destroy those insects which acquired life and form after the first submersion; the Phylloxera, which in all probability are embedded in the inner bark of the Vines, remain uninjured, to resume the work of destruction begun by their predecessors. It may prove interesting, as bearing directly on this subject, to note here a few of the many experiments and results made with Phylloxera here and duly recorded in my note-book in 1879. They are as follows: "Experiments with Phylloxera by submerging the affected roots in various kinds of fluids this day (1 p.m.), September 10, 1879, and examined on the 12th inst. at 11 a.m., with the following results, viz.: The Phylloxera that were immersed in clear water have disappeared altogether, whereas those which had been immersed in soot water (the adult insects) have not disappeared (all the young have), but have been rendered more transparent, from a yellow-brown to a transparent and viscid colour, showing their transverse lines and spots more plainly than before they were immersed and viewed through the same microscope. The effects produced by immersing the Phylloxera in strong liquid manure and in half a pint of clear water, to which had been added a teaspoonful of sulphur, as also in the case of twelve drops of petroleum added to half a pint of clear water, were the same as those caused by immersion in the soot water—death by immersion, and in every case, excepting immersion in clear water, the insects were preserved in form, minus the flesh. Immersed a bunch of roots which were badly affected with Phylloxera in a 3-gallon can of water, to which three handfuls of fresh soot were added at 4.10 p.m., September 12, 1879. Examined the same at 11.10 a.m. the following day, and could not discern a living Phylloxera thereon. In lifting some of the Phylloxera-infested Vines for the second time—and this time for consignment to the fire—I saved back one that was very badly affected with the dreaded pest, and having pared off its roots to a stump I placed it in my office (August 14) to see how long the creatures

would live in a somewhat arid atmosphere, and to-day (August 22) I have found several of them alive and actively searching for food, whilst those on the young fleshy roots taken off at the same time died with the roots in the course of a couple of days—thus showing, beyond doubt, that so soon as their natural supply of food was cut off, or in a very short time after, they necessarily die. Of course, the old stem would contain moisture in it for weeks. I may remark that in removing the outer bark from the Vine in question I found the *Phylloxera* thickly embedded in the inner bark."

As the result of two years' extensive experience with the *Phylloxera*, I am convinced on three points in connection therewith: 1. That *Phylloxera* on the roots of Vines may be effectually destroyed (where Vine borders can be rendered water-tight for the occasion) by flooding the borders for four or five days at the end of July, and again for a like period eight or ten days later, this time to destroy the *Phylloxera* which had, perhaps, come into existence during the interval between the two submersions. 2. That where the *Phylloxera* have attached themselves to the main stems and branches of the Vines, the latter, as soon as they have been pruned, should have all the old bark peeled off and the rods scraped preparatory to washing them with strong, soft soapy water and a stiffish brush, afterwards painting every particle of the rods (dabbing the mixture well into every crevice about the spurs) with a mixture consisting of the following ingredients, namely: 4 ozs. flowers of sulphur, 4 ozs. soft soap, 2 ozs. Gishurst's compound, 2 ozs. essence of turpentine, and 1 oz. nux-vomica, the whole being well mixed, boiled, and stirred for about twenty minutes, adding sufficient water to make one gallon of the liquid and enough of clay and a handful of fresh soot to make it the consistency of thick paint. Previous to removing the bark from the Vines and scraping them, a cloth should be spread over the border underneath the Vines for the bark and scrapings to fall on. This should be removed to the fire heap as soon as the barking and scraping are completed. 3. That any liquid that will not kill the *Phylloxera* on Vine roots in its passage through the soil when applied with that object without at the same time permanently injuring the Vines is not of the slightest use as a preventive against their attacks. I may remark that the old bark should be removed from the Vines down to the roots, to which point they should also be washed and painted. In conclusion, I may say that I have every reason to believe that if "A. W. N." will treat his Vines as just described—flooding the borders about the dates recommended—as all the water in the Thames would not destroy the *Phylloxera* while dormant—he will have every reason to be satisfied with the result, which, perhaps, he will be kind enough to make known through the medium of the horticultural press.

Longford Castle.

H. W. WARD.

THE HARDY FRUIT GARDEN.

NOVEMBER should always be a busy month in the hardy fruit garden, and so long as the weather keeps open and comparatively mild, work in this department should be pushed on as rapidly as possible. It has been urged that where birds are troublesome, whatever pruning is required may be left until the early spring, but the advantages of this plan are doubtful, for if the feathered foes mean mischief, they will have the buds, be they many or few, and in this case there is nothing for it but to protect the trees, for there are few gardens where there is not plenty of work in spring

without having to bestow a lot of attention on hardy fruits. Where Gooseberries and Currants are grown on the trellis system, there is very little pruning required at this season of the year, as the summer shoots are always pinched before the nets are put over the fruit, and very little growth is made after this if the trees are carrying heavy crops of fruit. All that is necessary at the present time is, therefore, to tie in to fill up vacancies with any new shoots which were left at the summer shortening, and to make good any old ties. The mulching of these trees is generally left until the autumn; but if the covering be applied early in the summer, the fruit will be considerably benefited, especially if the season prove hot and dry. The above remarks are applicable to walls covered with the above-named fruits. They are, unfortunately, very subject under these conditions to scale if the walls are old, and in this case they will be all the better for a good application of soft soap and paraffin, well applied with a paint-brush before the nailing is done, if time can be spared for the operation. There should be no cutting required at the present time in the Raspberry quarter, as all old and any superfluous young canes ought to have been removed directly the fruit was gathered; the annual mulching may be applied immediately this is done, as it is then acted upon by the autumn rains, and assists in strengthening the canes reserved for another year. In the open quarter for Gooseberries and Currants, the bushes have matters nearly their own way; all that is done is to thin out a little where they are very thick, and remove a few stray branches that are getting out of bounds. It is well, however, to enforce on the mind of the pruner the necessity for a little discretion in Gooseberry cutting, and to discriminate between drooping and erect as well as strong and weakly varieties. There is in well-regulated establishments a batch of young trees always at hand to fill up any gaps that may occur from time to time, and these may be seen to as the pruning progresses. In the repairing or reconstruction of the Gooseberry quarter I should strongly advise, wherever birds are troublesome, that varieties required for separate purposes be kept to themselves, *i.e.*, for gathering green, for preserving, or for dessert; for it is not an easy matter, where they are all mixed together, to remove nets from a large quarter and hunt about for what is required.

White Currants should also have a corner to themselves; in fact, they are always the better for the protection of a wall or trellis, as the fruit is in this case kept free from splashes of dirt caused by heavy rains, and a vigorous application of the engine can be directed against the trees if the latter are attacked by the Currant fly—an insect that is sometimes answerable for spoiling a lot of fruit.—E. BURRELL, in *Field*.

THE CHERRY UNDER GLASS.

ALTHOUGH some of the finer varieties of Pears have been successfully grown under glass, it is doubtful if what has in these instances been gained in size and appearance has not been lost in quality and flavour. A south or west wall will after all be found to be the best situation for our choicest Pears. Even the fruit of some of the finest sorts is found to be better flavoured when produced on standard trees than on trees trained to walls. An east or west aspect on the open wall is the best position for the Plum and a south wall for the Apricot, the necessary protection to the bloom when the trees are in flower being given. The Apricot has seldom been very successfully grown under glass, in this respect entirely differing from the Peach, the fruit of which in all its varieties is greatly improved when produced in a suitable glass structure. The Cherry, although mostly grown in the open air on walls or on standards, is, nevertheless, deserving of a glass structure, as the fruit is greatly improved in appearance and in flavour. Nearly everyone is fond of this delicious fruit, and the growing of the same under glass has many advantages. In the first place, it affords effective protection to the ripening fruit from birds, &c., while the ripe fruit is also protected from heavy

and continuous rainfall. The trees can also readily be kept free from the attacks of aphids and other insects, particularly the black fly, which is the greatest enemy of the Cherry, and can only be subdued by fumigation. A structure for growing Cherries should have ample ventilation, but need not be heated, and may be either a lean-to or a comparatively low span-roofed structure; the latter much to be preferred.

The trees may be trained under the glass roof, at a distance of 18 inches or 20 inches from the glass, with a pit formed in the central portion of the structure wherein pyramidal or bush-formed trees may either be planted out or grown in pots.

Such a structure as this devoted to the culture of so popular a fruit as the Cherry would be very interesting at all seasons of the year, but more particularly when the trees were in bloom, and when bearing their crops of bright, ripe and delicious fruit.

In order to assist as much as possible in keeping the trees free from insect pests of all kinds, they should be annually dressed with some insecticide. In spite of this, as well as of a free use of the syringe during the growing season, aphides will not infrequently make their appearance, and when this occurs fumigation must be resorted to.

Soil in which the Pear, Plum, and other fruit trees will grow will be found suitable for the Cherry. Drainage, of course, should be effective, and when the original soil is light or poor, it should be enriched by the addition of sound turfy loam, or even clay may be added where the original soil is very light. Deep rich borders are neither necessary nor desirable. There are many varieties of the Cherry, and nearly all of them are excellent. The following twelve are, however, considered as among, if not the best, and are placed as near as possible in the order of their ripening: Werder's Early Black, Belle d'Orleans, Black Tartarian, Knight's Early Black, May Duke, Governor Wood, Reine Hortense, Black Eagle, Early Red Bigarreau, Bigarreau Jaboulay, Frogmore Bigarreau, Bigarreau Napoleon.

P. G.

WORK IN FRUIT HOUSES.

PINES.

THE beds in which Pines intended for starting in January have been quietly resting should now be carefully examined, first, to ascertain if the plunging material is absorbing the little moisture contained in the pots, and second, to correct this evil if found necessary. Although nearly another month has to run before the first plants are started, it is hardly likely that they will require one drop of water; still it is better to work on the safe side by thoroughly moistening the tan or leaves immediately over the bottom-heat pipes than to give water to the roots until such time as the supplies can be repeated. These remarks apply specially to dry beds resting upon hot-water pipes or chambers, and not to deeper pits where fermenting material is the sole source of the bottom-heat essential to the maintenance of the roots in a white, healthy condition. The temperature having been lowered to the minimum, say 56° to 60° on cold or windy nights, and 65° to 68° by day, the supply of atmospheric moisture, as a matter of course, will be very small, so small, indeed, that damping the floors and walls on fine mornings only will be found ample in the lightest of houses, whilst old-fashioned structures may be left without a moderate sprinkling until after the turn of the year. Much, however, will depend upon the nature of the weather, for low as the above figures may appear, they cannot be maintained throughout bad storms and severe frosts without the aid of very sharp fires, whose parching influence must be softened by damping the floors, but on no account the pipes. Damping over-heated pipes is a tempting operation, especially when the attendant finds his early morning figures too low, but the sudden flush of a few degrees is but fleeting, and soon he finds to his cost that drip from condensed steam has spotted his leaves and not unfrequently ruined his best fruit. Old hard-and-fast growers who persisted

upon certain figures often had themselves to thank for this destructive deception; but those days have gone by, and we now find the best results where the temperature is allowed to range low during inclement weather. Much, as a matter of course, can be accomplished by night covering, not only in winter, but also through the autumn and spring, and although perhaps not particularly increased, the temperature is so steady and the atmosphere so soft and genial, that no one will leave it off when once he has commenced night covering. Covering, of course, applies to all structures in which a genial temperature and atmosphere are of importance, drip from the roof a curse, and economy in fuel a factor in good garden management. Let all, then, who can provide some kind of covering for their Cucumber houses, their pineries and late vineries, and they will soon find the occupants, as well as the attendants, will prove more than grateful for their care.

The sucker pit.—Here, as in the succession houses, complete quiet must prevail. The mild weather experienced in November may continue; if so, less fire-heat will be needed; but wintry weather is now due, and no time better than December and January for a spell of frost and snow, after which vegetation makes a fresh start and crops of all kinds are better than when a green winter is followed by a very unkind spring. The plants in the sucker pit, especially those in small pots, possibly within a few inches of the bottom-heat pipes, must be looked to without delay. If in pits through which there is a pathway—all modern fruit growers now find ways and means of getting along the back or front—the elements will not impede their progress, as they can lift the pots one by one, fill the basin with tepid water, and replace them when it has passed away. This plan is much better than watering the plants, as the dry soil will absorb the moisture gradually, the roots will be kept slightly in advance of the leaves, a condition highly necessary where early potting is considered advantageous. When all the pots have been lifted and put right by the application of water, they may be mounded over with dry tan or leaves; the pit may be kept at 50° to 55° by night and about 60° by day for the remainder of the current year.

Preparations for the coming season must now be pushed forward, not only in the soil ground, but also in the pot store and potting shed. If stacks of turf have not been thatched or in some other way protected from the elements, no time must be lost, and, in addition, a good quantity of turf may be taken in and placed where it can be kept dry and warm. Pots of all sorts and sizes must be well washed, and when dry, crocked ready for use. Correctives, including pounded oyster shells, charcoal, and finely broken brick, a most excellent material for mixing with heavy loams, may be prepared by labourers in bad weather; and last, but not least, Oak, Beech, or Chestnut leaves must be collected in large quantities, harvested and stacked if possible when quite dry.

CUCUMBERS.

Two very important points in the management of these are cleanliness and husbanding their strength by the removal of all the young shows if not likely to be wanted, especially where the demand will be heavy from the beginning of January onwards. A supply of fruit through the months of November and December of course is necessary, but this should be obtained from old or early autumn plants, which will be cleared out when the real winter plants, which bear from January through March, come into full bearing. These, then, if I may use a sporting term, should do the running, no difficult matter, whilst those intended to take it up should be kept quite free from young fruit and male blossoms. Until quite recently I hardly thought it necessary to express this plain simple opinion, but having to inspect and report upon a garden in which no less than four houses were devoted to Cucumbers, and at the time containing some twenty to thirty brace of fruit much too old for use, I was told this extravagant apportionment was absolutely necessary to the

production of one Cucumber per day after Christmas. In this case all the plants, young and old, were striving against each other in the production of a crop of very little use or value, and yet the tyro could not see the outcome of this injudicious management. I do not condemn a series of small compartments; indeed, I approve and always commend this plurality of strings to the bow, but only one at a time should be strained; the others should remain slack until wanted. This can be accomplished by going over all the plants at least twice a week, by judicious stopping and thin training, by maintaining a thoroughly moist bottom-heat of 75° to 80°, and counteracting the baneful effect of dry fire-heat by ranging as low as 65° at night, and covering the glass after nightfall. Then as to cleanliness: this may be maintained by the removal of all decaying vegetable matter, by washing the glass, shelves and floors, by brushing the walls with quicklime and sulphur, and sprinkling the surface of the bed with rather dry maiden loam, lime rubble or charcoal. If fermenting leaves are used for producing or aiding the bottom heat, the syringe will hardly be needed, especially if the beds are frequently turned and renewed, and tepid water at 80° to 85° is freely used when watering. The plants in bearing, as a matter of course, must have good warm clarified liquid and plenty of it, but unless the other plants are late and decidedly weak, the rough porous compost kept properly moistened with pure water should maintain a medium and healthy growth which will not suffer when overtaken by bad weather. Summer plants may even be grown too strong, but when those which should make steady progress through the dark months are too highly fed, their large fleshy leaves are sure to collapse before the turn of the season. Another drawback is the introduction of too many plants, and placing them too near the hot-water pipes in inefficiently heated pits or houses. All goes well for a time, but when the tops are checked by crowding or incessant pinching, and extra firing scorches the stem leaves, spider puts in an appearance, insecticides and the syringe are forced into use, scalding steam is generated, and the crop is lost or injured past recovery. Winter plants, on the other hand, kept quite away from the top heat pipes and trained on the extension principle, retain all their main stem leaves, a most important matter. The vapour rising from the bed keeps them in health and prevents the appearance of spider, and last, but not least, their extension training, whilst letting in air and light, ensures steady root action. Insect pests, as a matter of course, find their way into all Cucumber houses, especially where the plants are weak or unhealthy and least able to support parasites. The best preventive is the course I have suggested, but once the attack is made, fly must be met by mild fumes from Bloxham's smoking apparatus, and spider by the use of sulphur, the latter also an antidote for mildew. In some houses canker is an annual pest; in others it never puts in an appearance, particularly where the house is kept clean and there is no attempt at crowding. Under any circumstances, no matter how good the inside management, there should always be secured a circulation of fresh warm air through the ground-line ventilators. The ways and means I need not define, but a gentle flow should be secured, and it must be made warm before it reaches the foliage.

Plants in full bearing and intended for removal the moment young ones or Melons are ready for turning out may be kept at 66° to 70° by night, and proportionately warm through the day; also they may be highly fed and frequently top-dressed with rich, rough compost, kept in a warm corner for the purpose. If grown quickly and cut young, the bitter taste so frequently complained of will be entirely absent.

FIGS.

Pot trees plunged in bottom heat about the beginning of last month and kept judiciously syringed with tepid water will now be swelling their point buds pretty freely, a condition which will justify a little more atmospheric moisture and a somewhat higher temperature on the bright gleamy days so

prevalent during sharp frosty weather. The rise, nevertheless, must be very slight, and that only by day, as compensation for a decrease during the hours of darkness. The best time to syringe the trees is about noon, when the trifle of ventilation must be taken off for two or three hours, not so much to raise the temperature as to secure a moist genial atmosphere favourable to the development of the young leaves and the swelling of the fruit. When this stage is reached the trees will make rapid progress, especially if the arrangement of the pots upon fixed pedestals favours frequent turning and renovation of the fermenting material. About this time, too, the first moiety of rich top-dressing may be given to the roots, and very weak tepid liquid once or twice a week will do good service if used for washing it in. If thoroughly pot-bound, as all early forcing Figs should be, it is more than probable the space for repeated top-dressings and copious supplies of water will be very limited, but good feeding being so very important, this difficulty may be got over by placing bands of zinc or lead about 3 inches deep just within the rims of the pots. This aid will greatly assist the swelling fruit, always provided the roots never feel the want of tepid water, another liable mishap which, to a certain extent, may be met by allowing the crock fibres to find their way into the sods of turf placed on the tops of the pedestals. Many people pride themselves on keeping the roots of pot fruit trees confined to the pots, but the Fig being such a gross feeder, and so liable to cast its finest and most forward fruit, the departure in this case very often saves the crop, where otherwise it may be sacrificed to an idea. The mean temperature may range from 50° to 56° by night and 56° to 65° by day for the present, more or less according to the state of the weather, as it is better to err on the safe side than hurry the trees through the remainder of December.

Succession houses in which trained trees are established in circumscribed compartments or cubes of compost should now be ready for starting, also by the aid of fermenting material consisting of good Oak or Beech leaves to which one-fourth of short horse manure may be added. If thrown in quite loosely at first the warmth and moisture will soon start the trees, but before this excitement can be felt the whole mass of compost must be restored to a growing condition by the repeated application of water at a temperature of 85° to 90°. As the brisk fermentation subsides, the fermenting material should be made very firm by treading, when another layer of leaves may be added, and so on until the fermenting material at a temperature not exceeding 75° to 80° is raised to the level of the cubes of compost. By adopting this mode of starting the roots and shoots simultaneously and keeping the surface of the bed, the floors and walls regularly moistened, the direct syringing of the trees, unless the day is very fine, will hardly be necessary.

Late houses in which the trees are allowed to grow naturally must be kept very dry and as cool as possible by the most liberal ventilation unless the weather is exceptionally cold and frosty. If not already pruned this operation may be performed at any time, and the trees, as a matter of course, may be washed on wet days, but not when nights are likely to be inclement. This part of the work got over, the roof and trellis may be washed or painted and the walls limewashed, and here matters should rest for the present, as it is not a good plan to hurry the operation of tying up to the roof trellis where severe frost may do serious mischief. Indeed, so liable are cold house trees to injury, that it is prudent to keep them near the dry floor and cover with Fern or straw until after the turn of the winter. If hot-water pipes have been introduced, any amount of frost may be kept out, but then even it is better to let down the branches and resort to dry covering, especially where the fruit is not likely to be wanted until quite late in the season.

Propagation.—If young plants are wanted, a few of the best ripened shoots should be selected and placed where they will be cool and yet safe until the time arrives for potting. They strike freely from eyes in bottom heat, or lacking this, excellent

plants may be raised from short sturdy pieces divested of their lower buds and inserted singly in small pots as cuttings. W. C.

NOTES OF THE WEEK.

Chrysanthemum Dr. Masters.—This old variety is still one of the best that can be grown for late work either for decoration or for the supply of cut flowers. For the latter purpose it is simply invaluable, the rich bronze flowers harmonising so well with autumnal foliage now so popular for decoration at this season of the year.—F. B.

A good winter plant.—At this season, when the Christmas Roses are the only flowers of the garden, a variegated plant has its use. In the garden at Gunnersbury House, Mr. Hudson has planted several large tufts of the variegated variety of our common Gladwyn, which has richly-coloured, sword-shaped leaves. It should be planted in large clumps to give colour.

Mildness of the season in Fifehire.—Proofs of the extreme mildness of the season are seen in all directions. In woods and meads many wild flowers are still blooming profusely, while in gardens, Roses, Carnations, Pansies, Violas, double Daisies, Primroses, Stocks, Chrysanthemums, Pentstemons, Antirrhinums, &c., are bright and beautiful. In the garden of Mrs. Stewart at Kennoway a Pear tree is in full blossom.—T. N.

Cotoneaster microphylla.—This *Cotoneaster* is full of small, crimson, Yew-like fruits in winter, and there are several spots in the garden that might be enriched more with such charming shrubs. One good place for it is on a corner of a rockery, where its woody stems can spread over and hide the bare stones, as may be seen just now on the Chiswick rockery. This *Cotoneaster* delights to spread itself in this way.

Early Poinsettias.—In the stove at Gunnersbury House, Acton, there is an excellent batch of Poinsettias in full beauty, both the early kind and the type. The former is about a month in advance, the head of bracts just as broad, and the colour a clear rose-carmine, quite different from the brilliant scarlet of the ordinary form. Both should be grown to obtain a succession, and especially the early variety should be noted by those who have not yet grown it.

Kniphofia aloides var. glaucescens.—To avoid errors, we think it useful to state that this *Kniphofia* (a coloured plate of which appeared in THE GARDEN Nov. 16, 1889, p. 458) is sold in our nursery under the name *Kniphofia aloides grandiflora glaucescens*. We consider it one of the best varieties for general use. The name *grandiflora* is given to it to distinguish it from the common *K. aloides*, which has smaller blooms, and of which there exists as well a form with glaucous foliage.—E. H. KRELAGE & SON, Haarlem.

Negro Largo Fig.—This luscious Fig is grown well at Gunnersbury Park, Acton, which is a good home for the Eastern fruit, as it is more in demand than in most gardens. The plants are in pots and placed in the house for forcing about the middle of October, succeeding a crop of Melons, which in turn give place to Strawberries. The plants are placed on the Melon bed, which has previously had a couple of loads of fresh soil turned into it. An excellent crop is gathered, and this at no great trouble or expense.

Hæmanthus hirsutus.—The *Hæmanthus* is usually represented in gardens by such showy kinds as *insignis* and *natalensis*, both nearly allied; but another species, quite distinct and entirely different from the foregoing, is *H. hirsutus*, introduced from the Transvaal in the year 1878. An excellent plant of it was shown at the meeting of the Royal Horticultural Society on Tuesday. Its two hairy leaves are quite 8 inches across, and the stout scape is short, also hairy, and carries an umbel of white flowers, the golden anthers giving rich colour. It is an interesting greenhouse plant.

White Hoop-petticoat Daffodil (*Narcissus monophyllus*).—Scarcely a year passes without making note of this winter gem, but it is yet comparatively rare even in good gardens. Several pans of it are in bloom with Mr. T. S. Ware, of Tottenham, who puts several bulbs in large shallow pans and keeps them in a cold frame, not that they are tender, but the frail flowers would quickly perish in winter rains and winds. The flowers, which appear among the narrow leaves, are fit to deck the daintiest vase. In a suburban garden in the west of London all the forms of *N. Bulbocodium*, from the delicate little *nivalis* to the large-

flowered *conspicuus*, are planted in the open ground, and bloom yearly almost as freely as those in pots, especially the more robust types.

Strawberry Waterloo.—This Strawberry is sure to be largely grown, especially in private gardens, being very distinct from any other. The flavour is good and the flesh firm and of good colour. It bears freely and is of good constitution. It was the best I had last season amongst ten varieties of the most popular sorts.—F. P., Leamington.

Adiantum farleyense.—Referring to the article by "J. C. B." (p. 535) on the origin of *Adiantum farleyense*, there seems to be some uncertainty as to where it first came from. It was from Farley Hill, in Barbadoes, the property of the late Sir T. Graham Briggs, Bart., that it originally came, and it was said there to be a natural sport from *A. tenerum*. Farley Hill stands pretty high, but it grows luxuriantly all over the island wherever cultivated. I had a large plant of it growing in my verandah near the sea.—J. S. S.

Primula obconica.—Although this is becoming well known in the greenhouse and conservatory, few people are aware what an excellent plant it is for a room. It has been continuously blooming with me in a sitting-room window facing east since February, 1888. Its handsome leaves and heads of light flowers are always much admired. Its only requirements are potting in pure loam and plenty of water. Unlike most of the *Primulas*, it is not injured, but seems to be the better for an occasional application of one of the artificial manures. Plants should be purchased in bloom, as they are very variable, and some varieties are much better than others.—A. J. BRUCE, London, N.

A new shelter for plants.—In THE GARDEN of 22nd October, 1887 (p. 380), you noticed a new shelter for plants—an Osier hen-coop covered with green scrim—which I then expected would prove a really useful and easily moved protector. The late frost following mild weather, with no protecting snow, has afforded ample means of testing the hardness of plants and the efficiency of protectors. Our coops have proved most useful. Among the plants sheltered is a clump of the large pure white Christmas Rose; the flowers have been finer than we ever before have had them. A New Zealand Fern seems quite happy under the coop. I believe that many plants considered only half-hardy will stand the winter with this protection.—GEORGE F. WILSON, Heatherbank, Weybridge.

The Narcissus industry at Scilly.—The current issue of the *Cornishman* states that the *Narcissus* crop at St. Mary's, Islands of Scilly, is very forward, and at no period of the history of that crop in the Islands were there so many blooms fit for market as at the present time. The mildness of the season has something to do with their early blooming, but a great deal of it may also be attributed to the fact that last season thousands of good flowering bulbs (Scilly white especially) did not flower at all, while in most cases they were very weakly; consequently their vitality was not exhausted for this season, and this caused them to put forth their bloom earlier than usual. From a correspondent in the neighbourhood of Manchester it is heard that bulbs of the Scilly white, supplied from Scilly last year and which failed to bloom then, are now in full flower.

National Rose Society.—The annual meeting of the National Rose Society, held at the Hotel Windsor on Wednesday, the 4th inst., was attended by a large number of rosarians from various parts of England. The chairman was Mr. T. B. Haywood, and also present were the two hon. secretaries, the Rev. H. H. D'Ombraim and Mr. E. Mawley. The arrangements for next year include the metropolitan exhibition at the Crystal Palace, July 5, the provincial show at Birmingham, July 17, and a special exhibition of Tea Roses on June 24 in conjunction with the meeting of the Royal Horticultural Society on that date. The accounts showed that the total income, with the balance of £41 2s. at the beginning of the year, amounted to £653 6s. 9d. Of this amount the sum of £345 8s. was received as subscriptions, £71 9s. 2d. for affiliation fees and in

payment of medals from affiliated societies, £105 from the Crystal Palace Company, and £66 17s. 2d. from the authorities at Sheffield. The expenditure includes £276 4s. paid in prizes at the Crystal Palace show, £120 paid in prizes at Sheffield, £58 for medals for provincial societies, £38 8s. 6d. for printing, stationery, and advertising, £26 8s. for postage, and £20 for assistant secretary and accountant. The balance at the bankers is £84 5s. 3d., showing a profit of £43 3s. 3d. It was proposed and seconded after some discussion that a sum of £15 be offered in prizes for Tea Roses at the meeting of the Royal Horticultural Society on June 24, 1890. The society, as shown by the report, has accomplished good work during the past year. Regret was expressed at the poor attendance at the Rose Conference, and the committee trust that their metropolitan show will never be crowded into so limited a space as was the case last year at the Crystal Palace. Comments were made on the dressing of blooms, and the following proposition, proposed by the Rev. H. B. Biron and seconded by Mr. Wallis, was carried: "That dressing Roses so as to alter their character is prohibited; also the insertion of any additional foliage."

Lilium speciosum var. rubrum.—This name, given to the plate of the *Lilium* issued with THE GARDEN, Nov. 9, 1889 (p. 434), may be a correct description of the flower figured, but it will cause confusion if growers suppose they will receive the variety figured when ordering *L. speciosum rubrum*. I therefore think it necessary to state that this *Lily* is generally known in the trade under the name of *L. speciosum purpuratum*. The following is the history of this *Lily*, which many years ago was offered to the trade by my father: About forty years ago or more, a Belgian gentleman sold to my father a lot of *Lilies*, probably of Japan origin. Among these were two bulbs of this very striking variety of *L. speciosum*. These were cultivated for years without any of them being sold, and the variety was offered at a later period as *L. speciosum rubrum extra* (Krelage). Among the first buyers of this *Lily* was M. Vincent de Boom, then a wholesale florist at Haarlem, who for some time was a very successful grower of the different varieties of *L. speciosum*. When he had got a stock of this *Lily* he sold it in London under the name of *L. speciosum purpuratum*. After his death the *Lily* was generally known as *L. speciosum purpuratum*. Some varieties sold under the name of *L. speciosum rubrum extra* are inferior to that known here as *L. speciosum purpuratum*.—J. H. KRELAGE, Haarlem.

Amomum magnificum.—This unusually striking plant was flowering recently in the aquatic house at Pendell Court. It calls for more than a passing note, as it is not only remarkably handsome, but very rare. At a first glance the flower may be likened to that of a Water *Lily* perched on a sturdy stem quite 4 feet high, and it also bears a resemblance in general expression to that of the Waratah (*Telopea speciosissima*), of which a coloured plate is given in THE GARDEN for Nov. 4, 1882. It has been described as *Alpinia magnifica*, but is now classified under *Amomum*, a genus of stove perennials. *A. magnificum* has a flower-head which, including the bracts, is quite 8 inches across, and this is carried at the apex of a strong stem rising about 4 feet from the ground. The outer bracts are about 2½ inches in width, and brilliant scarlet with a marginal edge of white, clearly defined, and intensifying the richness of the scarlet colour. The inner bracts are narrower and blunter and of the same colour. The flowers proper form a cone-like arrangement, as in the *Telopea* referred to, each of tubular shape, scarlet, and distinctly tipped with blue. The leaves are handsome, each about 2 feet long and 7 inches broad, the colour a rich full green; they are similar to those of *Alpinia nutans*, to which the plant bears some likeness. The plant in bloom is one of those presented to Sir George Macleay by Sir Henry Barkly, who about three years ago imported them from the Seychelles. Such a plant that is now almost 12 feet high in the house at Pendell Court deserves good cultivation for its striking character.

FLOWER GARDEN.

MYOSOTIDIUM NOBILE.

THIS beautiful plant has always been considered difficult to grow, but I have been very successful with it treated as follows from the time of sowing the seeds, which were saved from plants exhibited at the Royal Horticultural show on May 24, 1887, from Sir Edmund Loder's garden at Floore. The seed was sown in September and placed in a cold, dark frame. The young plants made their appearance in December, and were then removed into a cold greenhouse. In March they were potted singly into 2½-inch pots in a mixture of loam and leaf-soil, with a little silver sand, and plunged in some Cocoa fibre in a cold frame. In May they were again potted, this time

season is that they be always kept free from green-fly, which is sudden death to them.

G. GOLDSMITH.

* * A coloured plate, made from one of the plants exhibited in 1886 by Sir Edmund Loder, is given in THE GARDEN for Dec. 18, 1886. The flowers are like those of the Forget-me-not (*Myosotis dissitiflora*), and of the same charming blue colour.—Ed.

THE FLORISTS' PINK.

It is proposed to form a society for the encouragement of the more extended culture of the florists' Pink, and for holding one or more exhibitions of Pinks during the months of June and July in the coming year. And in addition to blooms of the laced florists' Pinks being invited, it is proposed to have classes for bunches of blooms of garden Pinks. It is proposed that there shall be



Myosotidium nobile. Engraved for THE GARDEN from a photograph sent by G. Goldsmith.

using some old Mushroom bed with the soil, and then replaced in the frame, plunged as before, and shaded from the sun, the lights being always kept wide open. At the beginning of August they were again potted, this time into 8½-inch pots, and removed to their old quarters, where they remained during the winter, being covered with mats on very frosty nights. In the following March when they commenced to grow, some of the strongest plants were given another shift into 9½ inch pots and replaced in the frame, where they soon began to throw up their flower-scapes, and during the greater part of May and June we had about forty plants in full bloom. They always require a great deal of water when growing, and at the time they are throwing up their flower-scapes a little manure water helps them wonderfully. One thing very essential during their growing

one exhibition in London, probably in connection with one of the projected flower shows at the Royal Aquarium for the southern growers of Pinks, and another in the midland counties a little later in point of time to admit of the northern and midland growers exhibiting their flowers also. Several of the leading florists of the day have promised to help forward the project, and a circular has been issued, signed by Mr. E. R. Johnson, 90, Harleyford Road, S E, asking for subscriptions towards a schedule of prizes, and stating that a committee is in course of formation.

There is much to be said in praise of the florists' Pink, and we have few flowers so beautifully scented. Between the old white garden Pink, with its fimbriated petals, and some of the fine laced varieties raised by Mr. Thurstan and others, we get a great variety capable of wide extension. We have our forcing Pinks like Mrs. Sinkins, Derby Day, Lord Lyons and others, and there are many border varieties, old and new, and sweetly attractive varieties of the single fringed Pink, *Dianthus plumarius*. All the Pinks are hardy enough to be grown in the open ground, and the fact that, with the exception

of the forcing types, there is no necessity for growing them in pots, should bring support to a movement that seeks their wider cultivation. Plants required to produce exhibition blooms are grown in the open, as in the case of the commoner border varieties, but a bed is made up especially for them, and the plants placed in it at the end of September or early in October. The bed is well prepared and richly manured, for the Pink is somewhat of a gross feeder and needs ample sustenance at the roots if good flowers with the perfect lacing, so much valued, are to be had. The Pink bed is in an open situation, and raised above the level of the ground, so as to admit of some natural drainage during times of excessive rainfall. The usual plan is when planting to place two or three plants of a sort together, and care is taken to secure any shoots that are in danger of being broken off when rough winds play about them.

At this season of the year, so long as it is frosty, the beds can be left alone. As soon as a thaw comes, followed by mild open weather, plants thrust up out of the ground by the action of frost should be pressed down firmly into it again, the surface of the bed stirred occasionally and kept clear of weeds. It is customary to earth the plants up, placing fresh soil about the roots, but not burying them too deeply. In spring when the plants begin to move, top dressings of manure are applied, the lengthening shoots secured to stakes, and everything is done to promote the production of good flowers. To have them fine, full, and well laced, disbudding and shading are both necessary. Copious waterings will be required in dry weather, and as the flowers are forming, soakings of manure water about three times a week have a highly beneficial effect.

R. D.

HARDY PLANTS FROM SEED.

MANY of our finest hardy perennials are as easily raised from seed as the ordinary annuals, and those who require large stocks of the best things will find this the most successful and most rapid way of obtaining them. There is practically no trouble whatever attached to raising hardy plants in this way, and although they may be sown in pots and placed in a cold frame, I believe in most cases the greatest success is obtained by sowing in a sunny sheltered border in the open air. The border should consist of a light, friable, or finely-pulverised soil, and the seed should be sown in shallow drills and covered with a little finely-sifted sandy soil, all that is necessary being to keep the ground between the drills free from weeds. When once the seeds spring up the young plants grow away quickly, and are not subject to any great fluctuations of temperature, nor do they receive checks from transplanting; for, assuming that the seedling nursery is in the reserve garden, if the seed was sown tolerably thin, the young plants would stand in the drills till of a sufficient size to be planted in their permanent positions in beds or borders. Thin sowing is most desirable and can easily be carried out in the open border, because we are not hampered for want of room. By pressing the drills into the bed with a rod they are made quite smooth and even, and from them the seeds spring up as evenly as when sown in pots or pans.

Seeds of perennials may be sown in the open air at any time from April to September, and the earliest sowings of some things will doubtless flower the first year; whilst the later sowings will give a stock of sturdy plants fit to be transplanted into the flower garden by winter or early spring. In gardens without glass the value of this open-air sowing is very great. Moreover, often in gardens we have perennials like Campanulas, Delphiniums, Aquilegias, perennial Poppies, and others that flower and ripen seed early. It is quite a mistake to

keep this seed till another spring, as by sowing at once plants may be obtained that will be large enough to flower the following year. It has been proved that by the frequent division of hardy plants their season of blooming may be considerably prolonged even to an extent scarcely exceeded by the average bedding plants. This same good quality will be manifest in vigorous seedling plants, and by raising from seed it is possible to obtain good things in sufficient quantity to be able to use them in the place of many of the poor tender plants we put out for the summer. It is perhaps only in recent years that seeds of perennials have been obtainable cheaply and in quantity, I mean other than the things that are common in gardens and seed freely with us; but now there are vendors of seeds who have many of them gathered from the plants in their native countries, and it is possible to obtain seed of almost any really good garden plant in small packets at a cheap rate. This of itself should promote the popularity of hardy plants, for, as I have this season proved, it is possible to obtain 50 to 100 plants from a packet of seed that does not cost so much as we have been accustomed to pay for a single plant of the same subject.

Among some of the finer families of hardy plants that can be raised in this way may be mentioned the *Euotheras*, *Achilleas*, *Lychnises*, *Agrostemmas*, *Delphiniums*, *Poppies*, *Aquilegias*, *Erigerons*, *Saxifrages*, *Linarias*, *Myosotis*, *Geums*, *Funkias*, &c. In addition to these fine flowering plants, those hardy plants of noble port like the *Acanthuses*, *Morinas*, *Ferulas*, *Echinops*, *Rheums*, *Gunneras*, *Crambe*, and *Heracleums* are very easily raised, and some very striking aspects of noble vegetation might be created when we had a sufficient stock of such things. Their effect would be quite equal to that produced by our tender sub-tropical plants, whilst the first frost would not sweep away all traces of our season's work and destroy our stock of plants.

Of many of the things above enumerated I now have healthy stocks raised from seed sown early in July, and I do not hesitate to say that it would have taken some years to have worked up as large a stock of some of the subjects by the old method of dividing. The value and possibility of being able to raise hardy plants in such quantity by such simple means cannot be too widely known.

A. H.

WINDFLOWER OR WOODFLOWER?

KINDLY permit me to remind Mr. Engleheart (see p. 469) that the names of two species of *Anemone*, viz., *nemorosa* and *sylvestris*, plainly imply that the rest of this pretty extensive family of plants are not recognised denizens of the wood or the grove.

In coming to the conclusion that the Greek name *Anemone* is derived from the Latin word *nemus* Mr. Engleheart appears to have set up for himself certain private canons of etymology which probably would satisfy him that there must be some intimate connection between the words "pigeon" and "pig," in which the same three letters occur in the same order of succession just as the letters *n e m* do in *Anemone* and *nemus*. Hitherto we have learned from our lexicons that the Greek name *Anemone* is derived from the Greek word *anemos*, the English for which is "wind." The name *Anemone* is cited by Pliny, who, if I remember rightly, refers it to the flower into which the beautiful youth Adonis was transformed; and in an old Schrevelius I find the following derivation and explanation: "*Anemone*, papaveris genus; ab *anemos*, ventus, quod spirante vento aperitur."—or, in English, "*Anemone*, a kind of Poppy; derived from *anemos*, wind, because it opens (or blooms) when the wind

blows." So that, whatever the flower may have been to which the name *Anemone* was originally applied, it is pretty clear that the English translation of "Windflower" stands in no need of being corrected.

It is not easy at the present day to determine what was really the plant to which the ancient Greeks gave the name of *Anemone*, but it cannot be denied that in its signification of Windflower the name is expressively applied to our native *Anemone nemorosa*, not that the term Windflower implies a wind-swept habitat for the plant (as Mr. Engleheart imagines), but as indicating that it comes into bloom at the time of the vernal equinoctial gales, when its flowers, like the Daffodils, "take the winds of March with beauty."

Lastly, I think Mr. Engleheart will find that the Irish name *Annamoe* (for which I presume he has written "*Anemoe*") has no reference to woods; and even if it had, it could only be forced into any kind of relationship with the word *Anemone* by the usages of some very far-fetched and high-pressure method of etymology.

WILLIAM MILLER.

SOWING RANUNCULUS SEED.

THAT some persons endeavour to raise *Ranunculus* from seed is shown by the fact that seed is in great demand, though little, if any, is saved in this country. In the old days when the *Ranunculus* was a foremost florist's flower, growers saved seed from the very best varieties, and in this way new forms were produced, as we see in the case of *Begonias*, *Cinerarias*, &c., in the present day; the old plan was to gather the seed and keep the seed vessels intact until the time for sowing came round. Sowing the seed was done in October and February. When it was intended to sow, the seed was separated from the pericarp by scraping it with a penknife, for, like that of the *Anemone*, it is of a woolly and fluffy character, taking care that it should not be in lumps, as it becomes attached in bodies when placed in a bag or box. The seeds have a bran-like appearance, but are paler in colour, and in the centre of these seed grains lies the vital principle, which is distinguished by a small brown speck. The best compost in which to sow is a light sandy loam, with the addition of some fine leaf soil. So careful were the old raisers that the compost should be free from insects, that they either exposed it to the action of severe frost or they baked it in an oven in order that no trace of insect life should remain, a practice still followed by some florists to destroy the larvæ of grubs in their *Auricula* soil. The seed was sown in boxes or pots a few inches deep, coarse siftings were placed at the bottom for drainage, and then fine soil was filled in; the surface was made quite level and pressed down gently, then the seeds were carefully sown and placed an eighth of an inch or so apart, and then sprinkled with a fine rose watering-pot to cause them to lie flat; then some fine dry mould was employed as a covering, but a very thin one, it being a part of the practice to cover them as thinly as possible.

The late Dr. Horner, who was a great authority on the *Ranunculus* in his day, recommended that the seeds be sown at the end of March, his reason for doing so being that they germinated more quickly than at an earlier period of the year. The seed boxes were placed under a wall when sown late, or in a frame for a time when sown early, and then in the open under a wall, open to all the influences of weather. When the seed is good, the seedlings will appear above the surface in a month or so, and they should during the summer have such supplies of water as they may require. When the foliage dies down the bulbs can be taken up, put away in shallow boxes or drawers for the winter, then planted out in beds in spring, and they will flower the following June.

It would be, I fear, very difficult to get seed of a very fine strain of English-raised *Ranunculus*. The best way to begin perhaps would be to get a hundred or so of roots of a superfine mixture, as sent over by the Dutch florists, and to save seed from

a few of the very best of these. In this way a good collection might be got together in course of time, but it would be necessary to relentlessly throw out all the inferior varieties, keeping only those having some pretence to quality. R. D.

NOVEMBER FLOWERS IN YORKSHIRE.

SINCE the 6th we have had some fine weather for November, and on looking round the garden I was struck by the unusual appearance of many things at this late period of the year, and especially by the number of flowers to be found. So exceptional a state of things cannot, I think, be otherwise than interesting. I give below the names of such as I saw open about November 18. Before giving the names of the flowers I might usefully point out two general characters, and perhaps it will be better still if I classify them accordingly. They are first lingering flowers and next fresh flowers. "Lingering" in the sense that the blossoms may be worn ones, or developments on the points or otherwise of old summer-flowered plants or stems; and "fresh" in the sense of the flowers springing forth in an untimely manner, as Primroses are now doing, and also in the way of late bloomers, such as *Senecio pulcher*, which naturally is so late as not to develop its grand crimson heads until late in even a favourable autumn.

First the "fresh" November flowers:—

<i>Gentiana acaulis</i>	<i>Aubrieta</i> (various species)
<i>phlogifolia</i>	<i>Primula acaulis</i> (in variety)
<i>Doronicum Pardalianches</i>	<i>Vincas</i> (various species)
<i>excelsum</i>	<i>Cheiranthus Cheiri</i>
<i>Petasites fragrans</i>	<i>Helianthemum</i> (in variety)
<i>Oxalis lobata</i>	<i>Helianthus</i> (in variety)
<i>Crocus</i> (various species)	<i>Aralia</i> (<i>Fatsia</i>) <i>japonica</i> (a dwarf fine-foliated shrub, that rarely flowers, especially out of doors)
<i>Cyclamen coum</i>	<i>Arabis alpina</i>
<i>europæum</i>	Tufted Pansies (in variety)
<i>Primula capitata</i>	<i>Iberis sempervirens</i>
<i>Auricula</i>	<i>Cistus</i> (several species)
<i>Daphne indica</i>	<i>Veronica saxatilis</i>
<i>Cneorum</i> (flowering freely, the second crop)	<i>prostrata</i>
<i>Escallonia macrantha</i>	<i>Schizostylis coccinea</i>
<i>Philippiana</i>	<i>Saxifraga Fortunei</i>
<i>Helleborus niger</i>	<i>Lithospermum prostratum</i>
<i>angustifolius</i>	<i>Arnebia echioides</i> , &c.
<i>maximus</i>	
<i>Sisyrinchium convolutum</i>	
<i>Soldanella montana</i>	

The more or less worn-out, but lingering flowers comprise:—

<i>Dahlia</i>	<i>Potentilla alba</i>
<i>Oxalis floribunda</i>	<i>Tritoma Uvaria</i>
<i>Gaillardia maxima</i>	<i>Anchusa italica</i>
<i>Lychnis Vespertina alba</i>	<i>Polygonum</i>
pl.	<i>Helenium autumnale</i>
Roses	<i>Nardostachys Jatamansi</i>
Forget-me-nots	<i>Papaver nudicaule</i>
<i>Dianthus deltoides</i>	<i>Trifolium uniflorum</i>
<i>Atkinsoni</i>	<i>Anemone japonica</i> (white and pink)
<i>Tradescantia virginica</i>	<i>Fuchsia</i>
<i>Stenactis speciosa</i>	<i>Hieracium aurantiacum</i>
<i>Erigeron glaucus caucasicus</i>	<i>Ericas</i>
<i>Pampas Grass</i>	<i>Asters</i> (in variety)
<i>Astrantia minor</i>	<i>Geranium lancastriense</i>
<i>Geum coccineum montanum</i>	<i>Veronica</i> (various shrubby species)
<i>Pyrolithum uliginosum</i>	<i>Clematis</i> (several sorts)
<i>Verbascum phoeniceum</i>	<i>Lilium auratum</i>
<i>Campanula grandis</i>	<i>Juncifolium</i>
<i>Triteleia uniflora</i>	<i>Lobelia fulgens</i>
<i>Menziesia polifolia</i>	cardinalis
<i>polifolia alba</i>	purpurea
<i>Pyrolithum Parthenium</i>	syphilitica
<i>Veronica spicata</i>	<i>Sempervivum</i>
<i>Rudbeckia speciosa</i>	<i>Potentilla lupinoides</i>
<i>Chrysanthemum lacustre</i>	<i>Erodium Manescavi</i>
and other varieties	<i>Helenium Bolanderi</i>
<i>Geranium Endressi</i>	<i>Veronica corymbosa</i>
<i>Vaccinium Vitis-idaea</i>	<i>Spiraea crispiifolia</i>
<i>Armeria</i>	<i>Geranium Wallichii</i> , &c.
<i>Euothera</i>	

Woodville, Kirkstall.

J. WOOD.

Early Christmas Roses.—At the Exeter Nurseries of R. Veitch & Son, Hellebores have long been a speciality. The soil and locality suit them

well, and a good collection has been formed in a sheltered position, where they are not disturbed very often. They have generally some in flower at the time of the Chrysanthemum shows, the variety being the true *H. maximus*. This produces extra large flowers on a long stout footstalk, and if a little glass protection is afforded, the naturally white blooms are still more beautiful, being almost, some say quite, equal to a *Eucharis* flower. All the varieties grown promise to flower freely. The buds of *Mlle. Fourcade* are just bursting, and at midwinter or perhaps earlier there will be a fine display. These Christmas Roses are now very popular, and deservedly so, seeing how easily grown and serviceable they are.—I.

THE CULTURE OF LILIES,

OR rather shall I say the non-culture of Lilies, for it is of this that I desire to write more than of their culture. Why is it that there is such a failure in their culture? Why does it seem next to impossible, except in a few particularly well favoured localities, to grow such kinds as *auratum*? and why do even successful growers complain that they cannot grow the common white Lily? Why are our auction rooms crowded by the same persons week after week? In asking these questions, I have a hope that some of those who do grow Lilies well will give us some good advice, and enable us to grow them ourselves, and here I would mildly suggest that we cannot be much helped by those who are in exceptionally good circumstances for carrying out their culture. It is all very well, for instance, to say the best place to grow is amongst the *Rhododendrons*; but suppose that you are in a district where *Rhododendrons* absolutely refuse to grow; what then? This is my position, and hence I want help.

Let me take *Lilium auratum* first, and detail my experience. Year after year I procure bulbs; they look plump and promising; they throw up a vigorous flowering stem, but I find in the autumn that they have emitted very few roots from the base of the bulb, which bulb has considerably decreased in size, and which from experience I know to be utterly worthless. I have planted them in peat, dug largish holes and filled them with a good compost of peat, loam, and sand. I have also tried the plan of giving the roots a little start in the house previous to planting them; but whatever plan I have adopted, the result has been the same. With pots the result is equally unsatisfactory; you get a good head of bloom, but death or decay follows. Nor am I singular in this respect. I hear it constantly stated, "No, we cannot manage them, and have to treat them as annuals, buying every year and throwing them away afterwards." Now and then one hears of an exceptionally fine plant that has been grown for some years in a pot; but they are rare birds, and their after history is never told. I suppose there is sufficient vitality stored up in the bulb to enable it to put forth the flowering stem, but apparently not able to emit sufficient roots, and that when that vitality is expended there are no recuperative powers. Let it be clearly understood that I do not write with a pretence to science, but as a very humble practical worker. There is one remarkable thing, that the two best varieties I know, *platyphyllum* and *rubro-vittatum*, do not seem to partake of this delicacy, at least as far as pot culture is concerned. I have grown the former here for three years; the bulbs are healthy, and have increased in size and doubled in number. My experience with the latter has not been of such long duration, but the fine group shown by Mr. Gordon, of Twickenham, at the Crystal Palace makes one very hopeful, and I

see that my bulb is very sound and plump, and I have not tried either of them in the open, not wishing to risk valuable bulbs.

LILium KRAMERI is another Lily with which I have utterly failed. I have had it as imported bulbs, and also those said to be home-grown, but in neither case have I succeeded in doing more than getting one flower the first year, and in the second it disappeared altogether. Some doubts seem to exist as to the botanical position of this very pretty Lily, but as far as my experience goes of its horticultural position it is purely negative; it will not do at all. Then, may I ask, what record can any of your readers give of

LILium HUMBOLDTI? It is not a Japanese, but a North American species, but I have quite failed to get it to accommodate itself to my soil and situation, although neither in one nor the other have I much to complain of. I have planted it over and over again; have tried it in pots and out of pots, but alike have failed to grow it satisfactorily. It is a Lily I rarely see in gardens, and yet its beauty is very striking, and one feels sadly disappointed in not being able to grow it more successfully; on the other hand, one of the most beautiful of the Lilies which we can grow in the open has done very well with me.

LILium BROWNII.—At one time it was considered to be difficult, but that idea is now exploded, and it is certainly one that is able to withstand both wet and cold. But here, again, one has to ask why it acts as it sometimes does. Thus in my clump one root never showed any signs of growth. I naturally concluded that it was dead, but on examining the clump this autumn I found the bulb was perfectly sound and had increased in size. I noticed the same with *Ornithogalum arabicum*, which I have had for two years perfectly dormant and then it has started off afresh. I imagine that something of the same kind takes place with the *Gladiolus*, although, of course, in their case a new bulb has been formed, for in no other way can I account for bulbs appearing in my Rose garden, or strong flowering bulbs which I had only seen as small Grass previously.

LILium WALLICHI SUPERBUM.—A good deal has been written lately about this very beautiful Lily, and moved by an advertisement of Messrs. Low, of Clapton, I procured a bulb. The flower bulbs had been already formed, so that for flowering it I have no more credit than those poultry fanciers who buy a pen of prize birds at a show and then claim great merit for carrying off a cup at some provincial show. It is, without doubt, a most lovely Lily, with the firmest texture of petal of any Lily that I know, and its flowering was a real pleasure to me, but this was, I knew, an imported bulb, and on inquiring of the eminent firm from whom I had it what they thought would be the best system of cultivation to adopt, I received in reply their answer that this was their first year with it, that it would be found probably a difficult plant to cultivate, and that it would be better to adopt the same culture with it as with other Lilies from high elevations. This is not very consoling; it is just possible that some of our Lily men may have grown it and perhaps can tell us how it is to be managed, or are we to treat it as *L. auratum*? if so, it will be rather too expensive for little men. *Auratum*s can be purchased for a few pence, but *Wallichi* is seven and sixpence. With regard to its cultivation, the late Mr. Niven, of the Hull Botanic Gardens, states, as quoted in Dr. Wallace's "Notes on Lilies," "In this matter, that is its hardness, I am in a position to give an opinion, as it has

been planted out in these gardens for sixteen years, and flowers every year. It has never had any protection with the exception that it is covered with about 6 inches of peaty soil." This is written of *Wallichi*. Whether it is true of *L. W. superbum* must be a question. As I daresay many have been tempted to buy this beauty, we may hear something of success or failure.

LILium DAVURICUM.—Very different from the dainty Indian beauty is this Lily from cold Siberia, so common in cottage gardens and apparently as hardy as any native plant, and yet I have totally lost some clumps that I have had for fifteen years or more in my border. I have already alluded to the strange behaviour of these clumps. They did very badly last year, and made no signs this spring, and on examining the place where I had planted them this autumn I found not a trace of my large bulbs, which were as large as my two closed fists, and only a small number of tiny bulbs which did not even appear to be in good condition.

LILium CANDIDUM is another Lily puzzle. I have seen it, as I have frequently said; grow in all sorts of places, wet and dry, sun and shade, with the utmost freedom in cottage gardens, and yet the most experienced Lily growers often say they cannot grow it. Of late years it has come to be largely used for forcing, and very successfully. I imagine that when it does find a place suitable to its wants it is best to leave it alone.

My object in writing these notes is to show that there is a great amount of failure in the cultivation of Lilies. Possibly some of these difficulties are such as we cannot overcome in our gardens, and very often some small thing may influence them. Thus *Lilium auratum* is said to be generally found in long Grass, and *L. Wallichi* in dells on high mountains with a thermometer at 120°. This latter statement has been, however, doubted. Some, as *L. superbum*, grow in swamps, and can only be thoroughly well done where there is an abundant supply of moisture.

There is one small matter of cultivation which ought to be observed, viz., that of leaving the stems of all Lilies after they have flowered untouched. They may look untidy, but as the tidying-up housewife is the one most to be dreaded, so the tidying-up gardener often does more harm than good. A garden ought always to be neat and in good order, but Nature should be a little considered, even at the expense of tidiness. DELTA.

FLOWER GARDEN NOTES.

A SMALL GARDEN OF CHOICE SHRUBS.—This was formed in the autumn of 1874 as a sub-tropical garden, and right well has it answered its purpose. The beds were purposely made large, as all were intended for large-growing plants. The garden was full and well furnished the first season during the summer, but after these were cleared away the huge bare beds looked so bad, even though they were well encircled with *Rhododendrons* and other Evergreens, that it was at once determined to plant Japanese *Retinosporas* and other compact-growing shrubs on the turf between the beds, it being quite out of the question to fill the beds with shrubs for the winter. The planting was done, and though the shrubs were small, they had the desired effect of imparting winter cheerfulness, and as years went on the shrubs became sufficiently large to quite take off all appearance of bareness. And now for the unexpected. Last spring circumstances necessitated the turning over of the beds used for sub-tropical plants, and it is no exaggeration to say that the garden has been during the summer, and is now, much more beautiful as a shrub garden than ever

it was with sub-tropicals. We have changed the name from sub-tropical to Japanese garden, because with but few exceptions all the shrubs are natives of Japan. These consist of nearly all the varieties of *Retinosporas*, the most beautiful specimens being *Retinospora filifera*, *R. squarrosa*, *R. plumosa aurea*, *R. obtusa alba*, *R. leptoclada*, *R. obtusa compacta*, *R. pisifera aurea*, and *R. nana aurea*. Of other plants the most telling at this season are *Araucaria elegans*, the colour during winter being russet brown; *Juniperus Birki*, the grandest of all *Junipers*, and with a spiral compact habit of growth simply perfection; *Cupressus Lawsoni erecta viridis*, *C. Lawsoni argentea*, *C. Lawsoni aurea*, and the variegated *Thuopsis borealis* complete the list of shrubs proper. Other plants are *Bambusa Metak*, very fine, *Arando conspicua*, *Yucca recurva*, and the New Zealand Flax (*Phormium tenax*). The garden is sheltered on every side and quite hidden from other portions of the pleasure grounds. The greatest merit, however, is that very little labour is needed to keep it in order; very different this to that of a garden of sub-tropical plants.

COTONEASTER MICROPHYLLA.—Largely as this is used, there is no question but that the number might be greatly increased to the improved appearance of steep banks, rough stone walls, rockeries, and the like. A few years ago we put out a number of plants amongst some old root-work and rough boulders to screen an unsightly bank, and this the plants have effectually done, and at the present time the rich scarlet berries with which the plants are covered are like so many coral beads laid over a beautiful green network, so orderly are they arranged on the uppermost parts of the plants. The plants themselves to all appearance form as solid a bank as the best finished brick wall. This is well seen on the ruins of the old castle in the pleasure grounds at Devizes Castle. No written description can do justice to the sight either as regards the adaptability of the plant for covering ugly objects, for massiveness or solidity, and, in fact, for growing in any place where nothing else will succeed. It is so at Devizes, for it seems to be existing on sandstone alone, so thoroughly have its roots penetrated every fissure in the wall. On the railway platform at Bradford-on-Avon a recess for a seat is cut out and the walls formed with this *Cotoneaster*. It is needless to say that a gardener seeing it for the first time, as was my lot a month ago, could not help making a note of it.

Common Laurels, Yew, St. John's Wort (*Hypericum*), and Ivy are frequently planted as coverings for banks, but the *Cotoneaster* is better than any of these, and requires no trimming other than an occasional removal of a strong or upright-growing shoot. For clothing a wall having a north or east aspect it is equal to any climber; on warmer aspects, however, the foliage in summer becomes a ready prey to insects.

CHRISTMAS ROSES.—There is a fine collection of these in the nurseries of Messrs. Robt. Veitch and Sons, of Exeter. Several varieties were about a month ago in good flower, the earliest of all being *niger maximus*. Mr. Veitch assured me that he had gathered flowers of that variety quite a fortnight previously, whilst here the flower-heads were but just throwing up in this, up to that time, the mildest autumn for many years past. So much for climate, and, I may add, for soil, too. The Exeter flowers were much larger than ours now are and as white as snow, and here the same variety has a faint tinge of rose, similar to what is often seen in the common Christmas Rose (*Helleborus niger*); but that our variety is the true *maximus* is certain from the fact that the flowers are quite a month in advance of those of *H. niger*. We have had all our plants that are showing flower covered with handlights to keep the flowers clean and free from slugs. The flower-stalks also are longer from handlights, and are therefore better adapted for use as cut flowers.

WALLFLOWERS.—At this season these are scarcely less acceptable than Christmas Roses, and we now have them in rich abundance from seedling plants sown in February last, and other plants

transplanted a little later give promise of keeping up the supply of flowers the winter through; of course, always supposing the frost is not too severe. We have recently had 12° on three successive nights, and only the most exposed flowers appear to have suffered. By making about three sowings at various intervals between the 1st of February and the end of April there would be no difficulty in having Wallflowers all the year round.

Heckfield.

W. WILDSMITH.

TREES AND SHRUBS.

THE CORK TREE.

(*QUERCUS SUBER*.)

EVERYONE seems to have the desire to see a Cork Oak, and natural enough, for the uses to which the bark is applied need no explanation, being quite familiar to all. But apart altogether from its economic value, the Cork Oak has other recommendations which entitle it to a foremost rank in our list of ornamental evergreen trees.

The rough and rugged bark, which is more deeply furrowed than that of any other tree of my acquaintance, of a pleasing cream colour, curiously contorted limbs, and gracefully pendent and massy foliage of an intense shining green, impart to old specimens an air of importance that is certainly as unusual amongst the general run of our woodland and park trees as it is of interest, and of by no means an every day sight.

That the Cork Oak is an uncommon tree, even in the milder parts of England, is a well-attested fact; but why it should be so I am perfectly at a loss to know, for amongst the few specimens to be met with are several of large size, so large, indeed, that they could compare favourably with any to be found in the native country of the tree.

Then as to hardihood, I am perfectly convinced that it is by no means a tender tree, for it is to be found growing rapidly, and of good old age, on many an estate in the English counties, and in several instances, too, where fully exposed to cold winds, and where but little shelter is afforded by other trees or tall-growing shrubs. Unless it be the famous Knockholt Beeches, no trees for miles around are at a greater altitude than those on the lawn at Holwood House, or are more fully exposed to wind and storms, and yet there the Cork Oaks have attained to a large size and can compete favourably with any in the country. Nor do they show any traces of having suffered at the hands of the ruthless winds to which, on their high-lying and exposed sites, they are subjected; rather the reverse is the case, for they are well-balanced trees, and with fine spreading heads of the brightest and healthiest foliage.

One, the largest and most exposed, is a picture of beauty, the free, drooping masses of foliage and light-coloured rugged bark being the admiration of everyone who visits that part of the lawn on which the Cork Oak is growing. Another is growing at no great distance away, a striking feature of which is the bark, the cork in some instances being 3½ inches thick, deeply furrowed, and of a pleasing light buff colour. The former is about 45 feet in height, the stem girth at 2 feet from the ground being 7 feet 5 inches, and the greatest spread of branches 42 feet in diameter. At that part of the lawn on which they are growing the soil is a black-red loam or gravel, the subsoil being chalk.

The chalk formation of many parts of Kent would seem to be peculiarly well suited for the

cultivation of the Cork Oak, for turn where one will to large specimens of the tree, chalk is usually found to be a major ingredient of the soil.

At Linton Park, in Kent, there is a noble tree of the Cork Oak, which was planted about 100 years ago, the stem girthing 9 feet at 5 feet up, while the diameter of head is 59 feet, and the extreme height of the specimen 51 feet. The soil is Kentish rag, or, in other words, limestone of an inferior description. This tree is growing in anything but a sheltered nook, for it stands on the hill-side at 300 feet altitude.

The Holwood Cork Oaks fruit with great freedom, and young plants are readily enough raised from the well filled acorns, which resemble in no small degree those of the Holm or Evergreen Oak.

Dead trees are usually considered as the reverse of ornamental, but a big specimen of the Cork Oak, which died ten years ago, in the grounds at Hollydale is as ornamental now as many a living specimen.

A. D. WEBSTER.

THE LONDON PLANE.

(*PLATANUS ORIENTALIS ACERIFOLIA*.)

IN face of all that has been written and said on the matter, it is perfectly surprising with what persistence our leading nursery firms chronicle the London Plane as *P. occidentalis* in their catalogues. Out of seven forest tree catalogues now before me five at least give the Western Plane (*P. occidentalis*) as the true London tree, or what is used so extensively on the Thames Embankment, and a curious fact is this, that in sending to these particular nursery firms for their *P. occidentalis*, nineteen out of every twenty turn out to be either the Eastern tree (*P. orientalis*) or its far more valuable variety, *P. o. acerifolia*.

Why such a mistake should be allowed to be perpetrated from year to year is certainly a mystery, and can only be explained in this way: that one having set the example, others followed suit, and, unfortunately, such errors are not confined to the Plane tree alone, for both with popular and botanical names of plants and trees as well indeed as their characteristic traits and the treatment to be pursued in their culture, compilers of catalogues seem to copy verbatim from each other.

That there are specimens of *P. occidentalis* in and around London I am quite aware, but in giving the name London Plane to a particular species from the fact of its thriving well and consequently being planted to the almost total exclusion of others, it may be well in the first place to accurately determine what that particular form is, and so do away with the confusion in nomenclature which has hitherto existed, and does exist even in an increased manner at the present time.

From a careful examination of a number of the Planes in London, particularly those on the Thames Embankment, I am convinced that fully ninety per cent. are either *P. orientalis* or its well-marked variety *acerifolia*, or, as it is sometimes called, the Maple-leaved Plane. Few, indeed, are the specimens of *P. occidentalis* to be met with either in a young or aged state.

But now, as to the difference between the two trees, and this on careful examination is simple enough. The leaves of *P. occidentalis*, according to Dr. Asa Gray, are mostly truncate at the base, angularly sinuate-lobed or toothed, the short lobes sharp-pointed; fertile heads solitary, hanging on a long peduncle. In *P. orientalis* the reverse is the case, the fertile heads, or bolls, as they are usually styled, being produced in groups of three or four, and this may always be relied on as a sufficiently accurate character for determining the particular species.

The difference between the true London Plane,

or the tree that is most plentiful in and around the metropolis, and the typical or parent plant, *P. orientalis*, may be detected at a glance, for the leaves of the latter are very deeply cut, almost to the midrib, and toothed, while in the variety *acerifolia* the leaves resemble those of our common Maple, and are neither very deeply lobed nor conspicuously dentated. Both *P. orientalis* and its variety *acerifolia* are far better suited for the climate of this country than the nearly allied, though totally distinct, *P. occidentalis*.

As this is the planting season, I am induced to give the above short and plain description of these two trees, so that those who intend purchasing specimens may know not only what to ask for, but be enabled to see that they are supplied with what they ordered.

A. D. WEBSTER.

CLIMBING PLANTS FOR A COVERED AVENUE OR PERGOLA.

THE annexed illustration of an entrance to an avenue or pergola covered with a luxuriant

sitely scented. The covered avenue or pergola is a common adjunct to garden scenery in Italy, though not often seen in this country. We are indebted to Mr. J. S. Dismore for the following particulars respecting the method of construction of one of these avenues, and the plants used for covering the same adopted by him at Stewart House, Gravesend:—

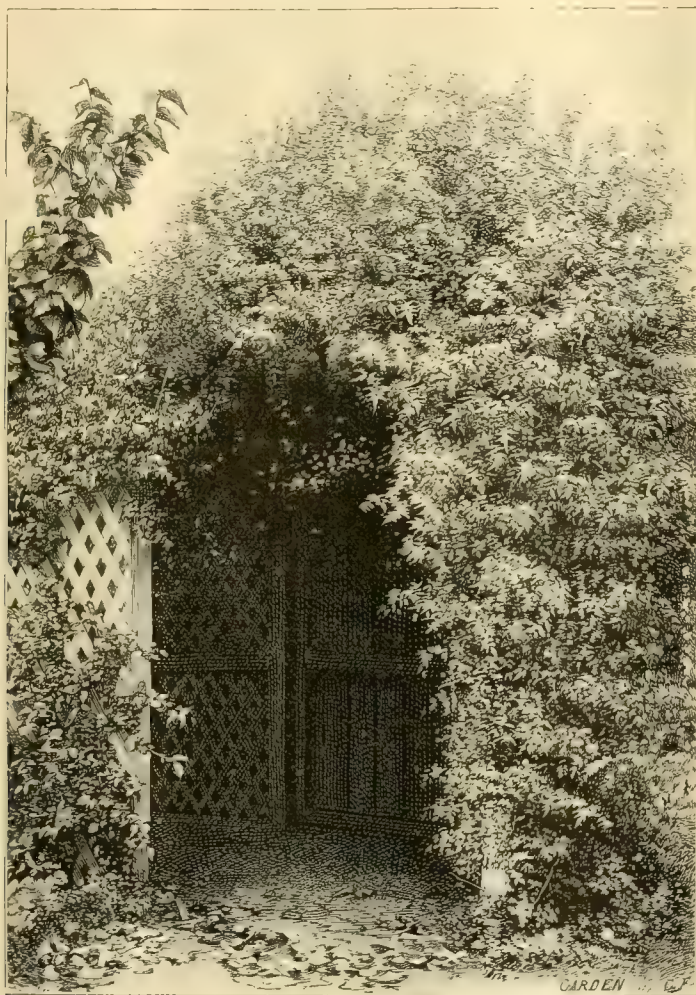
Having known the pleasure of a covered avenue or pergola abroad, I set up and planted one about ten years ago. It is about 150 feet long, with a width of 8 feet, and a height of 7½ feet in the centre. Square Oak posts, 4 inches by 4 inches, are put down every 8 feet or so distant, standing in height 6 feet from the ground. The top is covered with galvanised wire-netting, supported on iron rods, stretching from the top of the posts to those opposite, and rising in the middle. The sides are of wooden trellis work from the ground to the top of the posts, and on them are grown a variety of climbers, chiefly white Jasmine, Roses, Virginian Creeper, Dutchman's Pipe (*Aristolochia*), Clematis

order, and I would strongly recommend anyone having the space at command, and very little is needed in any garden, to try some similar avenue or pergola. It acts also as a capital fence or shelter for many things. The structure described is a very plain one, but in beginning anew many artistic arrangements might be made.

FRAGRANT SHRUBS AND PLANTS.

WE might with advantage pay more attention to the many and varied fragrant shrubs, for nothing is more delightful when strolling round a garden than to be regaled with the odours which ever pervade the air where sweet-smelling plants are grown in quantity. It is pleasant, for instance, to walk upon a smooth crisplawn whose turf is filled with Thyme, each step liberating fragrance to fill the air with a delicate sweetness. Upon the turf or in the "wilderness," by stream or woodland walk, we might have fragrant shrubs in masses, and they would pour out odours as rich and variable as the subjects which emit them. The Lavender is one of the sweetest of dwarf hardy shrubs, but hardly anyone thinks of planting it when making a shrubbery. It is beautiful when in flower, as everyone knows, but so it is when out of flower, as the eye finds repose in, and never tires of looking upon, its soft-cushioned masses of silver-grey foliage. This is one of the things that might be boldly used in the foreground of the shrubbery between the taller shrubs and the turf; and, moreover, planting shrubbery margins with such things as these would render digging unnecessary. Another sweet thing of the same grey colour is the Lavender Cotton (*Santolina*). It has yellow Daisy-like flowers in summer. Then there is the Rosemary, which no garden should be without. It always looks fresh in its dark green dress of richly scented leaves. Probably these three things are the most accommodating of all the scented shrubs, for they will flourish upon hot dry, stony soils where little else would grow. Equally as sweet and hardy are the different forms of the Southernwood (*Artemisia*); in fact, this is quite a large genus, of which it is rare to see a single member in gardens. *A. maritima*, which covers dry banks with a fragrant down in maritime districts, might be put to the same use in gardens. Near Felixstowe it may be seen growing upon banks instead of Grass, and it looks charming. *A. tanacetifolia* has finely cut foliage as light and graceful as a Fern, whilst the green-leaved *A. abrotanum* is perhaps the sweetest of them all. *A. anethifolia* is a vigorous herbaceous perennial, throwing up often as high as 5 feet a woody-branched stem, which is clothed with sweet thread-like greyish green leaves, and *A. annua* is another graceful tall-growing kind. Upon the rockery this family may be represented by such kinds as *A. alpina* and *A. frigida*. The first-named forms dense silvery tufts, but the last is a pretty trailing plant which rambles over the ground, rooting as it goes, and forming a dense hoary carpet. Both have yellow flowers. *Comptonia asplenifolia* is a hardy spreading bushy shrub with elegant Fern-like foliage, which gives off a delightful odour when touched. It is called the Fern-leaved Gale. Then there is the Bog Myrtle or Sweet Gale (*Myrica*), so suitable for wet situations. Many of the herbs might be used, especially such things as Marjoram, Camomile, &c. The Sweet Bay is one of the finest of scented shrubs, and a valuable Evergreen too. Upon warm soils it forms quite a tree as much as 40 feet high. The Sweet Verbena (*Aloysia citriodora*) has a perfume which all appreciate. It is one of the most useful scented shrubs for cutting. Although considered and usually treated as a greenhouse plant, it will live out of doors in many southern gardens, especially if planted against a warm wall. At Ketton Hall, Stamford, there is a bed of it upon the open lawn; the stools are protected with Fern, and annually send up vigorous shoots. Even raised from cuttings in spring and planted out with the bedding plants, it rapidly grows into a bush, with plenty of young shoots for cutting. It strikes very easily.

The Balm of Gilead (*Cedronella triphylla*) has a



A pergola covered with the common white Jasmine.

growth of the common white Jasmine shows well the great beauty and value of this lovely hardy climber for such a position; indeed, for hiding bare wall spaces or any unsightly spot in a garden, it is excelled by few climbing plants, as, in addition to its beautiful foliage, it produces quantities of pure white flowers, and which are, as everybody knows, exquis-

ely of sorts, *Pyrus japonica*, Vines, &c., all hardy, which completely cover in the pergola. There are several openings leading to the various garden walks, all comfortably wide for wheelbarrows, &c. The gate at the end of the pergola leads beyond the verandah to the shrubbery in front of the house. During the summer this walk is extremely pleasant, and seats are usually placed there then. In winter, the soil being light, no rain lodges in it. There is no trouble whatever in keeping it in

delightful odour. It is a half-hardy shrub in most situations, but would probably prove hardy in favoured spots in the west and south of England. It forms a spreading bush about 4 feet high, and the shoots are terminated by a little spike of pale flowers, but they are dull and ineffective. The merit of the plant is its fragrance, and as it can be readily struck from cuttings and grows freely upon warm soils, it should be treated as half-hardy, and young stock be raised and planted out every year. Junipers and Escallonia macrantha have also a nice fragrance, whilst in the Rose family there is a variety of delicate odours in the leaves as well as the flowers, the best known and most appreciated being the Sweet Brier, which should be present in every garden.—*Field*.

STOVE AND GREENHOUSE.

RONDELETIA SPECIOSA.

THE vivid-coloured flowers of this *Rondeletia* and its major variety may be had at almost any season, but at no time of the year are they more valuable than now, for they form a very marked feature in the stove or intermediate house at this time. *Rondeletia speciosa* is naturally somewhat rambling in habit, though by continual stopping it may be induced to form a bushy specimen; indeed, it is sometimes grown in this shape for exhibition. Besides this, little plants in pots about 6 inches in diameter are very useful in the greenhouse at the present season, for in the warmest part thereof they will retain their beauty for a considerable time. For furnishing the end of a structure or as a roof plant, if the house is not too large, the *Rondeletia* is well suited, for it will produce its Lantana-like blossoms in great profusion, and where cut flowers are required a specimen or two of this may nearly always be depended upon for a supply of bloom, and the clusters are of such a size that they are available for button-holes and similar purposes. The *Rondeletia* is by no means difficult to cultivate, for cuttings of the growing shoots strike root readily during the spring and early summer months, and grow away freely if shifted on as required. The soil for the cuttings should consist principally of sandy peat, and the same kind of soil will suit the young plants during their first shift or two, while afterwards a little good fibrous loam may be mixed with the compost. As the *Rondeletia* is by no means a vigorous rooting subject, care must be taken not to over-pot it, as if there is a large mass of soil around the roots, and it happens to get rather too much water at any time it is very difficult to maintain the plant in health, and even more so to restore it if it is allowed to become sickly. This *Rondeletia* was introduced in 1836, and besides the specific name of *speciosa* is also known under that of *odorata*. While the above is the best known of the whole genus, there are several others, among which may be mentioned *amœna*, whose flowers are less bright, the foliage larger, while the growth is more vigorous. The flowers of this, bluish pink with a quantity of yellow hairs in the centre, are borne in large dense clusters. It is also known as *R. versicolor* and *R. macrophylla*. *R. cordata* is another pink-flowered species, that blooms usually during the summer months, and is often included in the genus *Rogiera*. A plant far more frequently met with under the name of *Rogiera* than that of *Rondeletia* is *R. gratissima*, a native of Mexico, requiring less heat than the others previously mentioned. This forms a much-branched bush, that produces at this time of the year (or earlier) clusters of blossoms a good deal like those of the *Laurustinus*. So free-flowering is

it, that if the terminal cluster is cut off, very frequently secondary branches are produced immediately below, and that flower freely. This *Rogiera* is frequently seen in a by no means flourishing condition, though it is far from a difficult subject to cultivate. It is often grown in too warm a structure, for it does far better under much the same conditions as a *Camellia* than in a higher temperature. Again, the soil used must be of a porous nature, as the delicate roots of the *Rogiera* are very susceptible of an excess of moisture. For young plants good fibrous peat with a liberal admixture of silver sand and a few nodules of charcoal forms a very suitable compost, while for larger specimens some good turfy loam may with advantage be mixed with it. In a border prepared for its reception this *Rogiera* will, as a rule, grow better than in pots. Propagation is effected by means of cuttings. The best time to take the cuttings is during the spring or early summer months. H. P.

FLOWERING PLANTS OUT OF SEASON.

No class of plants is more thoroughly appreciated than those which usher in the spring-tide. It is, therefore, no wonder that we should desire to hasten such pleasures. I am afraid, however, that these pleasures are in danger of being destroyed through being over-done. Some spring flowers, or rather those which should flower in spring, have already made their appearance in the market. Their market value may be high, yet I think we could very well do without them—at least until the advent of the new year, after which we begin to look forward to enjoying a little more sunshine and fair weather. Apart from any sentimental considerations, I cannot understand why there should be such a growing desire to lengthen the flowering season of any particular class of plants. Take the *Chrysanthemum*, for instance. It is no longer confined to brightening the dull days of autumn and early winter, but is to be seen nearly throughout the year. I can admire flowers at all times, whether they are in season or not, but I maintain that if there was a greater desire to popularise each class of plants in its natural season, we should have greater variety and more freshness. The growing desire to make too much of certain families of plants to the exclusion of others is calculated to do much harm. What has become of the choicer sorts of *Ericas* and other Cape flowering shrubs, together with many of the beautiful New Holland plants? If things go on as they are now, we shall soon lose sight of them altogether. The lovely and once much-admired *Fuchsias*, too, are being sadly neglected. The tuberous *Begonias*, of course, have to some extent supplanted the *Fuchsias*; yet I think the latter are equally beautiful and should have their share of attention. My idea is that all plants should have a share of attention in their turn. I do not admire an indiscriminate mixture, but by shortening rather than lengthening the period of each class of plants, and bringing them forward in their natural seasons as near as possible, we might, in furnishing a conservatory, for instance, have some quite fresh and distinct feature at least every month in the year. I do not mean to limit the season of all the classes to that period, but some quite fresh feature might be added; and would not this be far more interesting than having such a lengthened term of one class? or, what is even worse, an indiscriminate mixture, and no decidedly distinct or new feature for months together? I do not recommend the massing together of large groups of flowering plants, but their arrangement so as to keep the distinct colours in sufficient quantities to make an effect, and the division of the colours by using plenty of fresh green foliage between them. Plants with coloured leaves should be arranged in separate groups. I once saw a splendid lot of *Dracœnas* and *Gloxinias* arranged together, but, as may be imagined, the effect was anything but pleasing. If sufficient green foliage had been used to divide the bright

colours, the arrangement might have been much more effective. F. H.

CAMELLIA CULTURE FOR PROFIT.

As a matter of course there must be a ready sale for *Camellia* blooms to make it profitable to grow them, but it becomes a question whether or not they may be produced more cheaply than they are. I am quite of opinion that this can be done, as there are few plants less exacting, for they will flourish under conditions where others would hardly exist. Take, for instance, the back walls of houses where there is only a little light, as compared with what there is near the glass, and in such situations *Camellias* are at home and grow and bloom in the greatest perfection. We have some of ours so planted, and they have only a narrow border for their roots, but as they have been in their present position some years, no doubt they have struck out under the pathway which is paved with hard bricks. The border when made had a pigeon-holed wall run along the side to support the edging tile, but no soil was put or provided beyond the narrow strip to give them a start. So well do these plants grow and succeed, that we have to prune freely to keep them in, and as the plants in the houses are forced, young wood is made early and from this being done flowers come naturally by the end of November. We have now numbers of the old double white, Lady Hume's Blush and Jubilee in and coming on, and the plants on these walls will give us a long succession, and we never hesitate to cut plenty of wood. I have often thought what a good investment it would be to build large span houses for Vines and plant *Camellias* under, as the *Camellias* revel in the shade afforded by the Vines, and the treatment of these last named just suits the former, and when the Grapes are cut, say by the end of the year, the *Camellias* would then have all the light they require. The best way would be to plant them out and give the plants room enough to get about between them, but however grown, the great thing is to induce early growth, as *Camellias* will not stand artificial heat after their buds are formed, but as much of it before as a Cucumber or stove plant, provided they have plenty of moisture by being freely syringed overhead.

Sickly plants can readily be brought round by this treatment if, first of all, they have some of the old soil removed and fresh turfy loam and fibry peat put in its place, when, if kept close and warm, roots are soon emitted and fresh growth formed. S. D.

Kalanchoe carnea.—This very pretty South African plant, sent out as a novelty this spring by the Messrs. Veitch, is just commencing to open its pretty heads of flower in Sir Trevor Lawrence's garden. The plants as grown by Mr. Bain are strong and are blooming freely, the flowers being of a soft pink, borne in large, somewhat globose heads, and they have an agreeable sweetness, so that I hope to find it a useful plant for cutting, which, seeing that the plant will be in its beauty at Christmas, renders it doubly welcome. The plant has large, somewhat succulent leaves, which are opposite, light green, and serrated on the edges; the corymbs of flowers terminal, so that the plant will require to be cut back every year, and I should imagine divided every season.—W. H. G.

Anthurium ferrierense.—Since the introduction of the brilliantly-coloured *A. Andreanum*, a great number of hybrids have been raised claiming parentage from this remarkable species. One of the first was *A. ferrierense*, obtained by crossing *A. Andreanum* with the white-flowered *ornatum*, the progeny being in general appearance about midway between its parents. The spathe is cordate in shape, about 5 inches or 6 inches long, and bright carmine-red in colour. The showy spathes are pushed up at various times of the year, and now some plants of it are finely in flower, when of course they are much appreciated. Since this particular form was brought forward, there have been many other hybrids raised on much the same lines, several of which differ little, if at all from *A. ferrierense*,

for if this is raised from seed, a certain amount of variation is to be found in the progeny. Seedlings are easily raised if the seed when ripe is mixed with a little dry sand just to absorb the moisture, and then sown in well-drained pots or pans filled with sandy peat and chopped Sphagnum. The seed having been sown on the surface must be slightly covered with the same compost, when the pots may be placed in a close propagating case, the moisture-laden atmosphere of which is favourable to the germination of the seeds and the rapid growth of the young plants afterwards. As they grow up, I find that these vigorous growing forms of Anthurium are benefited by an admixture of good turfy loam with their potting compost. To ensure the production of seeds the spadix must be gone over with a camel's-hair brush several times when the blossoms are expanding. A sunny morning is the best for the purpose, and the most satisfactory results are to be obtained from flowers that expand during the summer months.—H. P.

PROPAGATING BOUVARDIAS.

"T. B." (THE GARDEN, Nov. 23, p. 479) mentions what is undoubtedly a popular method of propagating Bouvardias among market growers at the present time. This consists in taking cuttings from plants that are being grown on for blooming during the time that they are in a succulent condition. It is not shoots with two or three joints that are employed, but just the points only long enough to allow of their being inserted in the soil. In this way two birds are killed with one stone, the plants getting the necessary stopping to ensure a compact habit, whilst furnishing cuttings that strike quickly in a suitable temperature. In May I saw a large houseful of plants in 4½-inch pots, bushy specimens that were soon to go into 6-inch pots. They had been stopped a month previously, and the cuttings they gave were rooting freely. The cuttings were dibbled into 6-inch pots surfaced with sand, and I should say that quite 99 per cent. of them had made roots. In this way propagation may go on all through the spring months, so that young plants are always coming on. Plants obtained from cuttings given by old specimens that have been headed back early in the year have not the time that is required to form the grand plants that are brought into the London markets early in the winter. Very few are aware what can be done with the Bouvardia when it has plenty of time to make its growth, and by propagating late in spring little bushy plants may be had that only require the requisite stimulus early in the year to start them into growth. They are well on their way at the time when cuttings are being put in by the older method. It stands to reason that plants obtained from cuttings put in, say, in February can never equal those that are well rooted and that have the advantage of making a start from ripened wood. It is not uncommon at this time of year to see in some of the London market gardens where Bouvardias are a speciality, plants in 6-inch pots 18 inches through with a dozen good big trusses of bloom. One great secret of successful Bouvardia culture consists in frequently stopping the plants in their earlier stages of growth, so as to obtain plenty of flowering shoots later on. If they are allowed to grow away at the beginning of the season, they not only become lanky, and so lose much of their beauty, but they do not carry half the amount of bloom they should do. Root cuttings are employed with, I believe, good results by some, although I have had no experience with this method of propagation, neither do I think that it is practised to any extent by those who grow Bouvardias largely for market.

J. C. B.

African Hemp (*Sparmannia africana*).—This greenhouse shrub, which was introduced from South Africa as long ago as 1790, is extremely useful where a supply of flowers has to be maintained all the year round, for it is of easy culture, a rapid grower, and flowers profusely. It is not suitable for flowering in a small state, but when seen in the shape of a bushy specimen 5 feet or 6 feet high and as much through, it is then very

attractive when covered with its terminal cymes of peculiar, yet showy blossoms. The flowers, which are borne in good-sized clusters, have pure white petals, while the brush-like mass of protruding stamens, which are of a bright orange-red colour, forms the most prominent feature of the inflorescence. It may be placed out of doors during the summer, and removed under glass on the approach of autumn. When planted out it grows very rapidly, and some specimens of it in Battersea Park were towards the end of the summer profusely laden with flower-buds.

WORK IN PLANT HOUSES.

EPIPHYLLUM TRUNCATUM.—When the plants are in good condition and the season's growth has been well matured, there is no difficulty in having Epiphyllums in bloom during the last two months of the year, but unless there happens to be a sufficient stock that will admit of a succession of flowers being kept up from the time named on through the winter, plants put in heat now will be in bloom early enough. To give the flowers as much solidity as possible a high temperature should be avoided, and the nearer the plants are stood to the glass whilst the bloom is coming on the stouter and more lasting the flowers will be.

LILY OF THE VALLEY.—Where the flowers of this favourite plant are wanted early in the new year, a portion of the stock should be started at once. Easily forced as this Lily is when the conditions essential to success are present, there are, nevertheless, few hardy plants the forcing of which so often ends in failure, especially when an attempt is made to have the flowers in early. It is only strong, fully ripened roots that have been prepared by attentive cultivation during the time that is necessary for their attaining the requisite strength that will enable them to produce full-sized spikes of bloom that are to be depended upon. The selected Continental crowns are the best for giving the first crop of bloom. Not that the plant cannot be grown in this country in a way that will give fine flowers, but it seldom meets with treatment such as admits of the best results being attained. In purchasing crowns it is well to avoid the low-priced stuff that is sometimes sold in clumps. It is with these that most of the failures occur, and the plants stubbornly refuse to move however much heat is given them. Where bottom-heat is applied to the extent that the market growers and some others now use it, the bed in which the roots are plunged must be sufficiently near the roof of the house or pit in which the forcing is carried on to enable the tops to attain their green colour as they break through the material. Where hard forcing is practised early in the season, the material in which the roots are plunged must be soaked with water every day so as to keep it saturated to an extent that would be fatal to most plants; without this there will either be a total absence of leaves, or they will come so few in number as to detract much from the appearance as well as the use of the flowers, which never look so well as when associated with their own foliage. It is well to make this matter about the necessity for giving an exceptional amount of water when this Lily is forced early quite clear, as the advice given to water moderately is opposed to the practice of those who are the most successful in obtaining flowers and leaves in due proportion. Where bottom-heat is used to the extent that the plant will bear say 100° or over, as already indicated, the whole operation must be carried on in a bed near the glass, or the plants must be raised to such a position as soon as the tops break through the plunging material, as if allowed to finish their growth far from the light, the flower-spikes and all the leaves will be so drawn as to spoil them. When the forcing is pushed on in the manner described, the flowers will be nearly all open, and the leaves correspondingly developed, in from twenty-four to twenty-eight days from the time of starting the roots. Treated in this way, the leaves have that peculiar pale yellow-tinted green colour which is now so much better liked than the dark green that growers at one time looked upon as

necessary in the leaves of plants indiscriminately. When the flowers are sufficiently advanced, if the plants are to be stood in rooms or elsewhere where the temperature is so much below that in which the forcing has been carried out, it is well to put them in a greenhouse temperature under propagating glasses or handlights for a day or two, tilting the glasses a little. By this means neither flowers nor leaves will flag.

SOLOMON'S SEAL (*Polygonatum officinale*).—Amongst the various hardy herbaceous plants that answer for forcing, this is one of the best. Its gracefully arched spikes are effective when arranged in large vases or other receptacles with others of a more formal description; and it is adapted both for greenhouse, conservatory, or room decoration, the character of the growth being such as to improve the appearance of any plants with which it may be associated. Unlike its near relative, the Lily of the Valley, it is better brought on slowly, as when hurried in a high temperature, both the flower-spikes and the leaves are apt to get leggy. A few plants may now be put into heat. A temperature of 55° or 60° will bring them on fast enough during their first stage; afterwards a little more warmth may be used.

SPIRÆA JAPONICA.—There is scarcely any purpose for which flowers can be used where this Spiræa cannot be employed with advantage; consequently it is well to aim at having it in during as long a season as possible. To have the flowers early in winter it is necessary to start the plants a considerable time before they are wanted, as they do not come on so freely in the dark dull season as later on, and this Spiræa will not well bear hurrying. When subjected to too much heat, the flowers come thin and poor, and flag so soon after being cut as to be all but useless. A temperature such as recommended for Solomon's Seal is enough to use. From the time the plants are placed in heat they should be kept close to the glass. This is the best means to secure good flowers. In potting this Spiræa, an error that is often committed is reducing the balls too much with the object of getting them into pots that are not large enough to enable the plants to flower as they otherwise would. In getting away the soil many of the best roots are destroyed, or so far injured as to affect the blooming. Through this cause some of the incipient flower-stems never move at all. With the intention of reducing the weight to be carried, it is more than likely that a good deal of the imported clumps are injured in this way. For this reason I like home-grown roots best. The plant is easily managed, as it is not particular in the matter of soil, but it should not be too heavy to admit of the clumps being taken up without the breakage of roots, that is unavoidable in adhesive material.

GREENHOUSE.—LAPAGERIAS.—Holding as Lapagerias do a first place amongst greenhouse climbers, there are still one or two peculiarities in their nature that it is well to prepare for. The plants require a longer time to attain sufficient size to be seen at their best than many things, and when they have reached this they are not so easily kept up to their full strength as some. Unless Lapagerias have more root room than many climbers require, the shoots that annually rise from the collar of the plants soon begin to come weak. Neither will they bear taking up to admit of the border being remade in the way that can be done with many things; for though the plants do not usually die outright when their roots are wholly or partially lifted, still when this is done they rarely regain a robust healthy condition. On this account it is well to always have a plant or two of both the red and the white varieties coming on. The best method of increasing Lapagerias is by layering; for this purpose the preceding summer's shoots are best. The manner of layering, and also the way in which the young shoots that spring from the layers grow, is different from that of any other plants that I can call to mind. The best way to proceed is to select a strong shoot or shoots and detach them from the roof, lay them down straight along one side of the bed occupied by the roots, and on this lay some peat broken fine, with a good sprinkling of sand mixed with it.

Put the material in a line 4 inches deep, and from 6 ins. to 12 ins. wide, according as there is one or two shoots to be dealt with. In this lay the shoots their entire length, covering them so as to leave about one half or a little more of the extremity of each leaf above the soil. The shoots must be pegged down with hooked sticks to hold them firmly in their places. Press the soil down enough to make it moderately solid, and keep it fairly moist, but not too wet. In the course of five or six weeks the buds will swell out large and plump, and will then push out roots that will make considerable progress before the shoots appear above the surface. Notching the layered shoots is sometimes advised, but there is nothing gained by it, as it is the buds that form the future plants, not the layered shoots, in the manner that takes place in ordinary layering. All that is necessary is, in the spring, when the young shoots push up, to put a stick for each one to twine round. In this way they must be allowed to remain through the early part of summer, so as to admit of plenty of roots being formed. After this, whilst there is some time before the close of the growing season, the shoots must be separated from the layered stems and put into small pots, where they will get established before winter.

HARD-WOODED GREENHOUSE PLANTS.—The extent to which Chrysanthemum growing is now carried in many private gardens tells injuriously on many other kinds of plants that are quite as well, if not more, deserving of attention. When the bulk of the Chrysanthemums are over no time should be lost in giving the necessary room to hard-wooded plants of all kinds, Heaths included. These last dislike being huddled together more than other things, as if light and air cannot reach them on all sides the lower leaves soon begin to suffer, and after a moist and not over sunny summer the plants are more liable to attacks of mildew than after a bright dry season. The plants, especially the softer-wooded sorts, should be closely looked over at short intervals to see that they are free from the parasite; on the least appearance of which sulphur in some form should be applied. Heaths should have side air as well as admitting it at the roof every mild day for two or three hours. As will be easily understood now when a minimum of growth is going on and the days are at the shortest, combined with damp air, the soil dries slowly. Yet this state of matters must not be allowed to prevent the stock being looked over daily. New Holland plants should, as far as circumstances will permit, be separated, putting the kinds which continue growing more or less during the winter in the warmest position in the house, and standing those that are comparatively at rest near to where air is given. The stock of these should be gone over with the water-pot every day, as there will be considerable difference in the rate at which the soil will dry. The kinds that keep their roots moving all through the winter draw out the moisture proportionately quicker than such as have their roots at rest. T. B.

Ardisia mammillata.—At present this is but little known, yet it is probable that such a pretty plant will before long be more generally cultivated. It is different from the well-known *A. crenulata*, as it is denser in growth, while the pale green oblong-shaped leaves are thickly studded with small wart-like elevations, from the centre of each of which there springs a whitish hair, which gives to the entire leaf a somewhat hoary appearance. The coral-red coloured berries are borne in clusters, and are bright and effective at this season of the year. These berries retain their beauty for a considerable period.—H. P.

Daphne indica.—The fragrant blossoms of this popular favourite are now rapidly expanding. It is not everyone that succeeds well with it, and occasionally a planted-out specimen may be seen that will stand still for a year or two, and then start away and grow rapidly. It is well suited for planting out in a prepared bed in the conservatory after the manner of Camellias, or it will do well trained to a wall. In any case thorough drainage must be ensured, otherwise success cannot be hoped for.

This *Daphne* is propagated by cuttings, or by grafting on the Mezereum, or Spurge Laurel, each mode of increase having its adherents. If grafting is carried out, the point of union should be so low down that it can be readily covered when the plant is shifted into a larger pot, and it would then appear to be on its own roots.—H. P.

Ruellia Portellæ.—This furnishes a very effective bit of colour during the winter months, for it will maintain a succession of bloom for a lengthened period, and is withal a plant of very easy culture. Cuttings will strike in a few days during the spring months, and grow readily enough if given the usual treatment of stove plants. It is not a deep-rooting subject, and is more at home in a pan than a pot, as its usual habit is to form a much-branched mass, and in a pan some of the principal shoots will root from the lower side of their branches. The flowers are solitary, but borne in considerable numbers, and being of a pleasing rosy pink colour are in a mass very bright and cheerful. The leaves are ovate, deep green with a light stripe down the midrib, and reddish on the underside. The entire plant is more or less hairy.—H. P.

Poinsettias.—The following particulars relative to the Poinsettia may be interesting, perhaps, as supplementary to the paragraph under that heading in your issue of November 2. I do not know whether any of your readers have tried the experiment of growing the Poinsettia as a tree. I was on a visit to a friend in Hertfordshire about this time last year, and was greatly struck with a magnificent Poinsettia tree growing in one of his houses. It had been there about fifteen years, and at the time I saw it had nearly 200 blossoms on it of large size and very brilliant colour. I immediately formed the idea of trying to grow one for myself. My gardener took to the idea at once, and, after the plants had done flowering, planted one from the pot into about 6 inches of loam and peat under the staging of one of the hot-houses. In May last it started growing, and is now (in seven months) 10 feet high with a stem an inch thick and bearing flowers $17\frac{1}{2}$ inches in diameter. The appearance of the plant is very beautiful, and it lights the house up with its bright scarlet flowers. It is also most useful to cut from for table decoration.—A LOVER OF FLOWERS.

Chorozema Hendersoni.—This is now coming into bloom and will flower continuously all through the winter and early spring in an ordinary greenhouse, although the blooms expand more freely in a temperature of about 50°. It is so distinct from the ordinary run of winter-blooming plants, that it should be much more grown than is now the case. Unlike many New Holland plants, it is of very easy culture, and cuttings of the half-ripened wood strike freely. Its only defect is a rather straggling habit, but this can be in a great measure remedied by cutting back rather hard as soon as the blooming season is past. I find, however, that cut-back plants do not come into flower quite so soon as those that remain unpruned. Plants that are allowed to grow as they please will commence flowering early in November; whereas such as are cut in will be a couple of months later. By pruning a portion of the stock or allowing the remainder to go untouched, the blooming season of this *Chorozema* will extend over a period of six months. The best way to treat unpruned specimens is to train the branches, which are so thin and flexible that they can be easily bent round stakes inserted round the pot. If this is not done the plants become very tall and devoid of foliage at the base. The best way, however, is to put in a few cuttings now and then, so that the older specimens can be discarded. For general use plants in 8-inch pots are large enough, and if they do not get an annual shift they are sure to become naked and unsightly. When cut back the plants should be carefully watered until they break, and when the shoots are an inch long they should be repotted. I have found that good turfy loam, with a little leaf soil and a slight addition of fibrous peat and plenty of white sand, suits it best. Firm potting is absolutely necessary. Being free in growth, more water is

required than for most things of its class, and when the plants are coming into bloom a little weak manure is helpful. It is scarcely necessary to add that a couple of months in the open air when growth is made are almost indispensable in the culture of this plant.—J. C. B.

Asparagus plumosus nanus and red spider.—Should the atmosphere of the structure in which it is growing be too dry, this *Asparagus* is liable to be attacked by red spider, which quickly causes the leaves to turn yellow and drop. At the first symptoms of the enemy energetic measures must be taken, otherwise a good specimen will soon be injured. Liberal syringing will free the plant of these insect pests, but in a fairly moist atmosphere they are seldom troublesome. Still, I have seen several cases where the red spider was working havoc, and the cause of the mischief being unsuspected, the atmosphere was kept somewhat drier to prevent the foliage damping off. I have not seen either of the allied *A. plumosus* or *A. tenuissimus* affected in a similar way.—T.

GARDEN FLORA.

PLATE 731.

ROSE JEAN PERNET.*

It is probably as the raiser of Baroness Rothschild and her ghost, Merveille de Lyon, that Pernet, of Lyons, will be best remembered among rosarians; but he has also sent out other first-rate varieties, including Marquise de Castellane, Caroline Kuster, and the charming Tea which is so admirably portrayed in the accompanying plate, Jean Pernet (1867).

It was, perhaps, rather unfortunate for this Rose that it should have appeared in the same year as Baroness Rothschild, at a time, too, when the cultivation of Teas was comparatively limited; for there can be little doubt that the more generally appreciated attractions of his twin sister caused Jean Pernet to be almost overlooked, and, indeed, many leading catalogues of that date make no mention of the Tea among the new Roses for the year. Nor was it only against one of its own household that Jean Pernet had to contend in the race for popularity, for there appeared simultaneously two other varieties, which at once took the Rose world by storm.

It is a curious thing that three such epoch-marking Roses as Baroness Rothschild, La France, and Boule de Neige, all of which have since been recognised as distinctive types, should have made their appearance in the same year; although it does seem as if there were sometimes a tendency for first-rate varieties to come in groups. Thus 1861 was a notable Rose year, and 1871 hardly less so, especially in the matter of Tea-scented varieties, a result to be attributed perhaps to the favourable conditions for ripening seed in some preceding summer, such as that of 1868. In spite, however, of the distracting charms of the new hybrids, Jean Pernet did not fail to find admirers, and became generally cultivated. Without possessing those universal qualities which at once cause a variety to be recognised as everybody's Rose, Jean Pernet is certainly a beautiful Tea and quite

* Drawn for THE GARDEN in open beds at Gravetye by H. G. Moon, June 15, 1889. Lithographed and printed by Guillaume Severeys.



distinct. The plant is a moderate grower, but the flowers being carried erect upon a stiff foot-stalk are displayed to the best advantage, and are also exceptionally well adapted for cutting. The colour in the bud and half-expanded blossom is pale creamy yellow, deepening in the centre to a rich full yellow as the flower opens. The habit and character of the variety could not possibly be better displayed than in the accompanying plate, which shows the different phases of the flower to perfection, both in form and colour, although it is possible in summer to obtain the blooms somewhat larger than the examples here selected.

Some growers have thought Jean Pernet to be tender, but the charge is not at all well substantiated, and in any case where the plants are well mulched or, better still, earthed up, there would certainly be no sufficient risk to deter anyone from giving a trial to a very charming Tea.

T. W. GIRDLESTONE.

CHRYSANTHEMUMS.

E. MOLYNEUX.

OUTDOOR CULTIVATION.

THE note by "C. L." (page 441) is quite opportune on the method of cultivating the Chrysanthemum to ensure a good outdoor display. For years now I have advised and practised outdoor growth, and hope to do more of it in the future, as it not only ensures a crop of blossoms for cutting from when the bulk of the ordinary season kinds are past, but it renders gay a wall space which might otherwise be bare at this season of the year. The plants cultivated outdoors are allowed free scope to develop blossoms in profusion, not being restricted to the method of one bloom to a shoot only. By this means we get a change from the large flowers which are produced in the orthodox manner; not that the plants which flower in such profusion out-of-doors are considered superior to the larger blooms which are grown in the greenhouse, but simply because we get variety in form of growth and flowering. I am not one of those persons who hold to one style of cultivation to the detriment of all other methods. My endeavour is to grow them in all conceivable forms, as they are lovely objects however grown. The plants that are now (December 2) giving us a fine show of blossom were planted at the base of a south wall, which is 7 feet high, half a dozen years ago; the same plants with few exceptions have covered their allotted space annually, and given us a wealth of flowers every year since, and I really think the present is the best crop we have had yet; certainly the plants are dwarfer than hitherto, many not growing more than 4 feet high.

When first planted we tried many kinds, gradually weeding out those which seemed the least adapted to this form of cultivation. These were principally incurved varieties. When once a proper selection of varieties is made, the plants properly planted in suitable soil, necessary attention given them during the growing season in the regulation of their shoots, &c., it is hard to say how long such plants will continue to flourish without removal. Until Sunday, the 23rd November, the wall was ablaze with colour; the high wind, accompanied as it was with heavy rain, dashed the blooms about considerably, rendering them not quite so bright in their appearance, although during the last few bright

days experienced here they have considerably freshened up, in spite of the 9° of frost which we had on the 28th of November. If a broad coping board were placed on the top of the wall when the blooms commence to unfold, so that they could be kept dry, they would remain in good condition considerably longer than they do where no protection is afforded beyond the bare wall. The method of planting mentioned by "C. L." is exactly that which I recommend, using some good soil to start the plants into free growth, after which they should be well supplied with water to the roots and overhead during dry weather to maintain freedom of growth, without which a profusion of flowers cannot be obtained.

Thorough drenchings of the leaves with the garden engine applied with force in the evening after a hot day are very beneficial, as they not only cool the wall for the night, but check the spread of insect life. One great fault in the cultivation of outdoor Chrysanthemums is that of overcrowding the growths so much that all are weakened, and such shoots never give results equal to those where ample space is allowed for each branch; as long as the leaves do not overlap each other seriously no harm is done. Directly the shoots begin to push away in April they are thinned a little, gradually removing others until the requisite number is obtained; these are allowed to break naturally, except in cases of varieties of tall growth. The shoots of such are pinched once at about 8 inches long; the shoots resulting from this topping are thinned afterwards to the necessary number. In the case of those allowed to break naturally, the growths are removed when it is seen what space they will occupy as growth proceeds. The branches are kept fastened to the wall either by nailing separately, or by passing a thin wire in front of the growths and tying those not close enough to the wire. Each year, in April, we remove a few inches of the top soil from the roots of the plants that have long been established, and replace it with fresh soil and old potting compost with which is freely mixed some horse manure. This invigorates the plants considerably. During the summer frequent doses of liquid manure applied to the roots maintain vigour of growth and good foliage. Neither insects nor mildew appear to affect our plants growing in this manner. For the information of those about to plant Chrysanthemums in a similar manner I give the names of those now in flower here which are all good for the purpose:—

Japanese.—Edwin Molyneux, Avalanche, Source d'Or, Maiden's Blush, Val d'Andorre, Dr. Macary. *Reflexed.*—Golden Christine, Distinction, Pink Christine. *Pompon.*—Mrs. Bateman, Lizzie Holmes, President, Golden Circle. *Single varieties.*—Patience, Oriflamme, Oscar Wilde. *Pompon Anemone.*—Dick Turpin, Antonius, Mons. Hoste. *Incurved.*—White Venus.

—Some of your correspondents suggest that raisers of new Chrysanthemums should aim at getting harder sorts for outdoor culture. This, in my opinion, is quite unnecessary, for what is wanted is to grow the sorts we have got in a hardy manner, fully exposed to every breeze, and in a natural way, not fattening them up with all sorts of compounds, nor starving them to death on poor worn-out flower borders, but treating them like any other garden crop that we wish to see come to perfection. To do this, healthy young plants, put out in spring on well-cultivated and fairly enriched soil at wide distances apart, should be allowed to have at least half-a-dozen good stout shoots to grow up to form a head after they have been stopped down close to the ground. Beyond keeping free from weeds, supporting with stakes as soon as the shoots get heavy, and giving plenty of water when drought prevails, little will be necessary. If

a judicious selection of varieties has been made, there will be no lack of Chrysanthemum bloom in the autumn. I have been cutting great quantities up to the present date (Dec. 2). The sorts that find most favour for outdoor culture are the pompoms and reflexed, as these stand wind and rain better than most of the other sections, although some of the Japanese are very useful. The following sorts are still in good condition: Roseum superbum, Peter the Great, Chevalier Domage, Mrs. Forsyth, Cullingfordi, Belle Paule, Jardin des Plantes, &c. My impression is that the culture of outdoor Chrysanthemums suffers for the same reason as that of Peaches and Vines on open walls, viz., all the time is devoted to those under glass and the open-air ones have to take care of themselves.—JAMES GROOM, Gosport.

YELLOW CHRYSANTHEMUMS.

YELLOW is a popular shade, especially with ladies, and fortunately there is no want of varieties with blooms of that colour in various shades among Chrysanthemums. Indeed, to the casual observer, when viewing an average group of Chrysanthemums in bloom, either in a private garden or at an exhibition, it would seem that yellow flowers were much more numerous than those of any other shade, white excepted. There is the very pale yellow, generally described as rich cream, primrose-yellow, lemon-yellow, canary-yellow, orange-yellow, and numerous other shades, down to the beautiful rich golden yellow, which, as a rule, is the most admired of all.

JAPANESE.

These are undoubtedly the richest in yellow shades, and there is no better kind than Sunflower. When well grown the blooms are massive, perfect in shape, and of a rich yellow colour. It has figured in nearly every winning stand at the principal shows this year, and may therefore justly claim the title of an exhibition flower. The plant is dwarf in habit. Grandiflorum is a beautiful variety when seen at its best, with flowers of a bright golden yellow, while scarcely less can be said of Governor of Guernsey, which has blooms of a very deep yellow, quite distinct from other shades; both are late-blooming kinds. Peter the Great has stood the test well, being even now grown as much as the newer varieties. For exhibition there is perhaps no better yellow variety, with the exception of Sunflower, above mentioned, than Ralph Brocklebank. This is a bright yellow, with blooms resembling those of its parent, Meg Merrilies; it is worthy of a place in every collection. Mr. H. Cannell has been much admired wherever shown, the blooms being full and of a charming light golden yellow. Gloriosum, too, is a useful yellow for the exhibition board, while for cutting from, Fulton, a well tried variety, must be given a first place. The flowers of Fulton, although but of medium size, are of a clear bright yellow and very effective. As a pale golden yellow, Gorgeous, a variety not seen so often as it might be, is worthy of notice; the flower has a full centre and reflexed florets. Soleil Levant is another pale yellow, while similar in character, though of a richer colour, is Frédéric Marrouh. Thunberg, again, is a taking bloom when seen to advantage, being of a pale golden yellow, with twisted, long-pointed florets; while for general purposes, Yellow Dragon, otherwise known as Golden Dragon, is well worth growing; this has long curly florets of a beautiful golden yellow. The same may be said of Phœbus, which has long drooping florets, rich golden in colour. With some Golden Queen, which has long, narrow, drooping, golden yellow florets, would find favour; as also may Cloth of Gold, a broad-petalled flower of good colour. Bend Or, a bright sulphur-yellow, with large twisted florets, is not grown so much as it might be. Mons. Garnar is also worthy of notice, the blooms being of a deep rich yellow with twisted florets. Mrs. H. J. Jones, a yellow sport from Ethel, is another variety that does not appear to be generally well known; it is very late, and being a free blooming kind is useful for cutting. There are many more yellow

Japanese varieties, among which Mrs. W. Menck, clear yellow, loose florets; Mons. Bergman, bright yellow; Sokoto, canary-yellow, long twisted florets; W. Harris, nankeen-yellow, very large; and Golden Prince, primrose-yellow, may be mentioned.

INCURVED VARIETIES.

In this section there are but few really good yellow-flowered varieties of recent introduction. M. A. Haggas, so much seen at exhibitions this year, is perhaps one of the best. It is rich yellow in colour and of good form. For general decoration there is no better yellow than the well-known and deservedly popular *Jardin des Plantes*. The flowers of this are fine in form and of a beautiful bright golden colour. Golden Queen of England, with its remarkably fine canary-yellow flowers, finds plenty of admirers when seen at its best; as also do Golden Empress, clear primrose-yellow, and Golden Beverley, rich yellow. Guernsey Nugget, a large primrose-yellow flower, is also worthy of mention, while the same may be said of Golden John Salter. *Aureum multiflorum* is a bright pure yellow variety, very useful for exhibition, as well as for conservatory decoration. Mrs. Norman Davis, a recent introduction, has a bright golden flower, very attractive in appearance; and so is Princess Imperial, a large flower of good form and soft primrose-yellow. As an incurved rich golden-yellow flower of good size and form, Mr. Bunn is considered one of the best; and for exhibition, Lord Alcester is a general favourite. The latter has primrose-coloured flowers of perfect form, and is a sport from Empress of India. Mrs. Dixon is much grown for conservatory decoration, and deservedly so, as it is one of the most useful yellows for that purpose. The same may also be said of Mrs. George Glenny, although this has a much lighter coloured flower than its progeny, the last-named variety. Emily Dale, a sport from Queen of England, is a useful variety with pale yellow flowers, as also is Mabel Ward. Barbara, again, with its bright golden flowers, is also worthy of a place in every extensive collection, while the same may be said of Yellow Globe and Yellow Perfection.

REFLEXED VARIETIES.

President Hyde, a recent American introduction, is considered by some authorities to be one of the best. In habit the plant is dwarf, rarely exceeding 3 feet in height, and produces immense quantities of rich golden flowers of medium size. When well grown it is very striking, and should be assigned a place in every collection, large or small. Elsie is another variety worthy of extensive culture. It has pale canary-yellow flowers, which change to a cream colour as maturity is reached, and is, moreover, very free-blooming, just the thing for ordinary decoration. Alice Bird is a beautiful yellow reflexed variety, though much too seldom seen. The flowers are large, compact, of good form and a very bright yellow, rather a deeper colour in the centre. Another fine old variety now seldom seen is Temple of Solomon, a most intense yellow. Phœbus, of more recent introduction, has a pretty-shaped flower, bright golden yellow in colour. Annie Salter is a well-known variety, and one much grown in former years, though for some unknown reason it has latterly been neglected. The blooms are large and of a deep bright yellow; growers will do well to reinstate it in their collections. As a rich golden-yellow flower Chevalier Damage is very distinct, though apparently not generally well known, while similar in colour, though smaller and neater in form, comes Leda, which is as little grown as the last named kind.

POMPON VARIETIES.

Among these there are several good yellow-flowered varieties, one of the best being La Vogue, a bright golden flower exceedingly useful for cutting. Golden Mlle. Marthe, a hybrid pompon, is a flower of fine form and canary-yellow in colour, as also is Golden Cedo Nulli. Miss Ounbridge, however, is considered by some as being the best yellow pompon, the flower being of good colour and very fine. Another fine variety worthy of extensive culture may be found in Dupont de l'Eure; the flowers of this are large and rich golden in colour.

Golden Trevenna is a useful variety, as also are General Canrobert and Soleil d'Or, both having blooms of a fine golden yellow. Goldsmith, a new early-flowering pompon, has blooms of a bright yellow, and so has Dodo, another new variety very dwarf in habit. Another dwarf-growing yellow pompon is L'Ami Corderchet; this is an early-blooming variety with flowers of a pale primrose colour; and among others are Canari, canary-yellow; Fiberta, lemon-yellow; Mignon, lemon-yellow; and Souvenir de Jersey, a bright yellow useful for cutting.

EARLY-FLOWERING VARIETIES.

There are a few good early-flowering Chrysanthemums with yellow blooms. The best of these, or rather generally considered so, is Mrs. Hawkins, so much commented upon of late. This is a beautiful variety and very serviceable for supplying cut flowers; in appearance the flowers resemble those of the better-known Gustave Wermig, though deeper in colour. Mrs. Burrell is a useful variety of a clear primrose colour, while for general purposes there is no better early-flowering yellow than *Précocité*. Beds of this kind were very attractive in Hyde Park during the past season. Yellow Petite Marie has clear bright flowers, and the same must be said of Yellow Cassy, a useful little variety.

SINGLE VARIETIES.

These deserve to be more extensively grown than at present. One of the best is Admiral Sir T. Symonds, with fine flowers of a deep golden yellow. King of the Yellows is only medium in size, but of a very deep, rich colour; while Queen of the Yellows is both brighter in colour and larger in size than the last named. W. E. Gladstone is a deep golden-yellow flower of good substance, although Professor Fawcett is not without admirers; this has flowers of an intense lemon-yellow, and is considered by some to be one of the best single varieties in cultivation. President Arthur is a bright yellow, and so is Helianthus; both deserve to be better known. Peter Henderson is a showy flower, bright yellow in colour; while scarcely less can be said of Canary, canary-yellow, and John W. Chambers, rich golden-yellow.

A few yellows also exist among the Anemone-flowered varieties, the best being, perhaps, James Western, of recent introduction. The guard petals of this variety are white, but the centre is canary-yellow. Sabine is a pretty flower, deep primrose-yellow in colour; and so is Miss Annie Low, said to be the best Anemone-flowered variety in cultivation. Other varieties include Antonius, bright yellow; Sunflower, sulphur-yellow; Mr. Astie, golden-yellow; Mrs. M. Russell, orange-yellow; and Glück, golden-yellow, one of the best. There are, of course, many more yellow varieties in the various forms, but the foregoing comprise most of the best now in cultivation. C. L.

"Naturally grown Chrysanthemums."

The phrase "naturally grown Chrysanthemums" is frequently to be met with, but, in my opinion, is often used unjustifiably. Commonly it is supposed to mean any method of culture other than that adopted by growers of trained plants and specimen blooms; but are those old-fashioned, much-stopped and much-be-staked plants which still find favour in a few instances entitled to rank as naturally grown? I venture to think not. What I hold to be naturally grown plants are those never artificially stopped nor disbudded in any way, and wonderfully free-flowering and effective many varieties are when thus treated. If the cuttings are rooted as early and in the same manner as those intended to produce three or four exhibition blooms, and also as regularly potted till they are in 10-inch or rather larger pots, the plants being duly supported by a stake and transferred to a suitable open spot, they will grow strongly and branch freely, till eventually fine bushy heads are formed capable of perfecting hundreds of blooms in good-sized bunches. As a rule, only one strong central stake is needed for these plants, the main branches being secured to this with stout strips of raffia. The varieties naturally vary considerably in height, but we want more of the sturdier growers, or those somewhat similar in habit to Val d'Andorre, Fanny

Boucharlet, Hiver [Fleuri, E. Molyneux, and Avalanche. Of medium height and tall growers the most free-flowering with us when naturally grown are Lady Selborne, James Salter, Bertier Rendatler, Elaine, Fair Maid of Guernsey, Peter the Great, Duchess of Albany, Mrs. J. Wright, Source d'Or, Sunflower, White and Yellow Ethel, and the Rundle family. Doubtless there are many others that could be named for this purpose. If perfect, though not large blooms are required, there must be a slight departure from the natural system, as it is necessary to remove all the side buds as early as possible, leaving the sound central bud only. The incurved varieties especially are much improved by this timely disbudding; in fact, unless practised, the greater portion of the blooms would never incurve at all. If tall plants are objected to, then must stopping be early resorted to, this being discontinued directly three or four strong shoots are formed. Allow the latter good room and they will branch almost as freely as the unstopped plants. It is of the greatest importance that the stopping be done while the plants are in small pots. —W. I. M.

EXHIBITING CHRYSANTHEMUMS.

COMPLAINTS are often made, and not without cause, of the exceedingly formal appearance of lines of boxes of Chrysanthemum blooms when arranged for exhibition. It used to be more keenly felt in the days when the incurved flowers were mostly shown, before the modern Japanese types were introduced, when the pompon varieties were only sparingly encouraged, and when the Anemone-flowered varieties were few. The wealth of form and flush of hues now found in the Japanese varieties and their comparative freedom from the uniform appearance presented to view by the incurved and reflexed types, imparted a new and much needed charm to our Chrysanthemum exhibitions, and if a test of public appreciation were made, it would be found that the popular taste more largely favoured the Japanese than the incurved types. At some exhibitions the practice of showing the pretty small-flowered pompon varieties in bunches is adopted, and where they are thus shown with several inches of stem and foliage the flowers raised above the ordinary dead level and well displayed, they are particularly attractive. Unhappily, delightful as they are, the flowers of the pompon varieties are not nearly so much exhibited as they used to be and deserve to be.

At the Chrysanthemum shows held at Reading and Devizes, there is a class for twelve cut blooms of Chrysanthemums as grown, and with 9 inches of stem and foliage. Japanese, incurved, and reflexed flowers are shown, and as the flowers are raised up and well displayed the effect is very good. It is a popular class, too, for at each of the two exhibitions I have named there is a steady increase in the number of exhibitors in this class, and the public are always found crowding about the stands. At Reading there are several classes showing how Chrysanthemum blooms can be employed in various ways for indoor decoration. There is a class for a large hall vase of Chrysanthemums, blossoms and foliage to be employed, and the result is numerous bold and striking arrangements well adapted for the purpose. There is also a class for a small vase of double-flowered Chrysanthemums for table, and the same for the single-flowered varieties, thus encouraging the cultivation of a very useful section. These classes suggest others illustrative of the usefulness of the Chrysanthemum for house decoration.

At the Chrysanthemum show held at Hitchin, prizes are offered for a small table showing the adaptability of the Chrysanthemum for dinner-table decoration. White cloths were generally used, and it would be well if this was the rule. One exhibitor had a brown-tinted cloth, brown vases, and brown-tinted Chrysanthemum blooms, and the effect was painfully inharmonious; there was absolutely nothing to relieve the oppressive monotony of the whole, and yet there was little to find fault with as far as the simple arrangement of the flowers was concerned. Orange, brown, and

yellow Chrysanthemums were mainly employed, but in too many cases the colour of the stands was similar to the prevailing tint of the flowers employed; any Fern foliage is admissible, and generally the decayed fronds of the Bracken were employed instead of something of a livelier green shade.

There is a great danger of the charming flowers of the Mrs. George Rundle type passing largely out of culture for exhibition as cut flowers. They are too small in size to be shown with the larger flowers of the Queen and Princess types, and they do not, therefore, appear in competitions. But Mrs. George Rundle and the two yellow sports naturally shape themselves into symmetrical blossoms; they are small in size, and produced with remarkable freedom. When well grown the Rundle type of flower makes excellent exhibition specimens, though growers now-a-days seem to prefer the larger flowered varieties. At some exhibitions there is a class for a specimen plant each of Mrs. Rundle, George Glenny, and its golden variety, and good plants are always forthcoming. I was highly gratified to see that at the late provincial show of the National Chrysanthemum Society at Hull prizes were offered for two bunches each of the three foregoing varieties, three blooms of each to the bunch. It is to be feared that the advanced character of the season prevented these naturally early-blooming varieties from being seen in their best character, and as numerous as could be desired.

R. D.

CHRYSANTHEMUMS.

MUCH interest would be lost in the growing of Chrysanthemums were novelties not introduced each season necessitating additions to our collections. Unfortunately, many are inferior to existing varieties, and it is difficult to make a selection unless exhibitions and large nurseries can be visited. Even with this assistance the inexperienced make mistakes, for they generally select the finest blooms and expect to be able to grow flowers of equal merit. In nine cases out of ten this is the reverse, as the best exhibition Chrysanthemums require high culture, and can only be grown to perfection by the most experienced cultivators. For conservatories and for all cut flowers exhibition varieties are not to be recommended, for unless grown on the large bloom system they are inferior to the more easily grown decorative varieties. The individual blooms are certainly large, but the plants carry few flowers and have a stiff, unnatural appearance. I am convinced Chrysanthemum societies and nurserymen are making a great mistake by encouraging the taste for large blooms often at the expense of beauty. Why give a certificate to such a monstrosity as *Etoile de Lyon*? It is of immense size, but coarse, of an indifferent colour, and altogether wanting in refinement.

Rewards ought only to be given to novelties that excel any previously sent out either in form or colour, such as, for instance, *Avalanche*; when well grown this a decided advance. Mrs. Alphens Hardy, if half the reports are true, must be a wonder. At present I have not seen it, so cannot give an opinion. The plants received were so weak they did not bloom this season. Having grown all the different classes, I must say the Japanese varieties have given the most pleasure, as the flowers are more graceful, more natural, and more freely produced than those of any other section, a few of the *Anemones* perhaps excepted, such as *Mme. Mary Owen*, white, even more pure than *Elaine*; *Fleur de Marie*, white; *Thorpe, Jun.*, rich yellow; *Sabine*, a lovely primrose; and the old, but valued *Fabian de Mediana*; these must all be well grown, or they will not show their character. Of the single varieties, *Snowflake* and *Admiral Sir T. Symonds* are the most beautiful. Of the incurved and reflexed varieties, *Cullingfordi*, the *Christines*, *Felicity*, *La Belle Blonde*, and *Reine des Blancs* ought not to be omitted. If grown on the bush system and allowed to carry plenty of flowers, they are effective and useful for grouping.

As it is now time to decide what to grow next

year, I take the opportunity of recommending a few that will please the most fastidious (exhibitors excepted), all the best colours being represented. If grown on the bush system and allowed to carry a fair quantity of flowers, a much better result will be obtained than by other method.

The varieties marked with an * must be partly disbudded; the rest may be allowed to flower naturally in sprays. Of novelties I have not yet tested on the bush system, but which have proved good exhibition plants, the following are highly recommended:—

Avalanche
Sunflower
Puritan
M. Bergman
Stanstead White
Eynsford White

Alba fimbriata
President Hyde
Florence Percy
Agnes Flight
Mont Blanc
M. Bernard

The general collection is at follows:—

**Mme. Louise Leroy*
**Mrs. J. Wright*
**Elaine*
**Fair Maid of Guernsey*
**Mme. C. Audiguiet*
**Ed. Audiguiet*
**Mr. Garnar*
**J. Délaux*
**Criterion*
**Belle Paule*
**Val d'Andoré*
**Mlle. Lacroix*
**Carew Underwood*
**M. Astorg*
**M. H. Elliott*
**Hamlet*
Mme. Payne
Charlotte de Montcabrier
Bismarck
Source d'Or
Wm. Holmes
Wm. Stevens
Wm. Robinson
Bouquet Fait
Miss Gorton

**Margaret Marrouch*
**L'Automne*
**Coquette de Castile*
**Hiver Fleuri*
**Triomphe du Nord*
**Mme. de Sevin*
**M. N. Davis*
**Wm. Clarke*
**Mme. J. Laing*
**Bertha Flight*
**James Salter*
**Lady Selborne*
**Etoile du Midi*
**Roseum superbum*
**Mlle. Paule Dutour*
**J. H. Laing*
Mlle. Melanie Fabvre
Soleil Levant
Tokio
La Triomphante
M. H. Jacotot
Thos. Stevens
Mrs. Geo. Stevens
Peter the Great
Margot

HERBERT ROTHERA.

The Cedars, Bramcote, Notts.

OUTDOOR CHRYSANTHEMUMS.

It is to be regretted that Chrysanthemums are not grown largely outdoors. It is not large-flowered sorts that are wanted for outside culture, but free, hardy growing kinds that will produce a mass of bloom.

When visiting a large hardy plant nursery near London in the early part of November in 1888, I was impressed with the value of these small-bloomed kinds for outside culture by the sight of a large patch standing in the open nursery (with not the slightest protection) and giving a mass of colour that could not be surpassed by any plant blooming in July. It must be remembered that was the year when so many lost a large portion of their plants grown in pots by early frost in October. Many of these kinds did not exceed 2 feet in height—just the thing for border culture and beds.

This year we devoted more attention to the Chrysanthemums outside. Our season began with the early summer border sorts. Many of the dwarf-growing kinds are used in borders, and we have some of them still very gay. Added to these we have growing outside such kinds as *Mrs. George Glenny*, *Mrs. Rundle*, *Annie Salter*, &c., giving blooms that would equal many produced by pot plants. We have also some Japanese kinds trained against a wall giving good blossoms. Last year I saw *Julie Lagravère* in fine condition in various cottage gardens in Somerset, Hampshire, and Devon quite late in December.

To show what can be done in the open air in a favourable season like the present in a suitable spot and where the owner has a love for flowers, in a cottage garden in the village of Thorncombe, Dorset, in the last week in November there were growing some five or six dozen large bushes of various kinds of Chrysanthemums. This garden presented such a picture as I have never before

seen in November. This will be readily understood when I say that the Chrysanthemums were grown in masses exceedingly varied in colour, shape of flower, &c. Added to these were still many good blooms of Dahlias of varied colours, such as red Cactus, yellow, white, and purple show kinds. Many of the blooms were as fresh as in August. In this garden many summer flowers were still in bloom, showing the mildness of the season. Nor is this garden situated on the sea-coast, but on a high hill some 10 miles inland. These Chrysanthemums have more beauty and usefulness than the monstrosities which have nothing to recommend them beyond mere size.

DORSET.

FREE-BLOOMING CHRYSANTHEMUMS.

I LEARNT the other day of a gardener residing in a somewhat low-lying situation in one of our home counties who had a grand-looking lot of 600 Chrysanthemum plants, all being grown for the production of fine exhibition blooms for November. They formed a regular avenue of plants in his garden, and were admired by all. Then came the early housing, the early blooming, the awful damping, all the best blooms going off wholesale before the show time had already arrived, and the product of all this enormous labour and great anticipations was two or three small prizes too trivial to be worthy of mention, and 600 plants about the middle of November utterly flowerless. That may be unusual experience, but so far it is evident that it may be repeated, for housing must now always be early, for there is no safety for the buds exposed outdoors, especially in districts where damp prevails after the last week in September. In contrast to this account of a distressing failure, I set the results of a diverse kind seen in two gardens I visited on the 25th ult. when recently at Reading. They were *Maiden Erleigh* and *The Wilderness*. At both these places the houses were I might almost say crowded with plants in full bloom of all sorts, but especially of the Japanese section, whilst at *Maiden Erleigh* Mr. Turton had here and there some few plants carrying big lumpy incurved flowers, then fast dying off, and singularly absurd and ludicrous did these mop heads look when compared with the exceeding beauty found in the clusters of the many other kinds flowering. I did not take note of any; they were of the ordinary varieties, such as would, hard disbudded, have been produced by single blooms, but which left to bloom naturally and freely were doing so in the most bountiful way.

Such white varieties as *Mlle. Lacroix*, *Elaine*, *Ethel*, and *Jane*, and such rich yellow kinds as *Sunflower*, *Peter the Great*, and *Jardin des Plantes*, were specially striking; indeed, these two colours, with some of the rich golden bronze hues, seem to be best for late work, as the deep reds or crimsons, such as *Cullingfordi*, so beautiful earlier, do not retain their colours late, and present a washy and faded appearance. There were some singles in the collection, but Mr. Turton speaks of these as cut flowers for house decoration somewhat depreciatingly, as he finds that they soon flag after being cut, whilst the double varieties will endure well. That is a matter which materially concerns those who grow flowers for cutting, and may largely determine what amount of favour is to be given to the single forms henceforth. At *The Wilderness* Mr. Lees had a very fine display also, his large conservatory being aglow with bloom. In the centre a raised bed was full of plants of *Elaine*, giving literally a mass of white flowers. This block showed plainly that the best effects in house decoration are got out of clumps of self colours rather than in having the plants promiscuously intermixed. At both these gardens there will be plenty of Chrysanthemum flowers till the middle of the month, whilst some of the later plants will give good flowers until the end of the year. I am disposed to think that whatever may be the state of things in the north at least, in the south January flowers will be exceptionally scarce this season; and perhaps it is not a matter of great consequence, as a season of bloom from July till Christmas is long enough for any one kind of flower. By dibbling cuttings of *Mme. Desgrange*

and G. Wermig into spent Asparagus beds in frames in February, Mr. Turton is enabled to have those fine early kinds in bloom in July, so that his season is a long one at least. The injurious effect of damp upon large Chrysanthemum flowers of the show quality may well form a part of the inquiry into the effects of fogs upon plants. Growers could no doubt tell some sad stories of the past season's experience, but the fear of encountering similar disasters another year may also induce the abolition of dis-budding for the production of big blooms in many directions, and the encouragement of clusters of flowers useful for house decoration, and far less subject to damping. Employers as well as growers may also have something to say on this matter, as it is obvious that gardeners who grow Chrysanthemums largely must have other aims than the mere winning of prizes at shows. It may be true that exhibitions have done wonders in popularising the Chrysanthemum, and therefore they merit encouragement, but it is very difficult to understand that all virtue in Chrysanthemum culture for exhibition rests in the production of the biggest possible flowers. It is probable that for one gardener who grows these plants solely for the production of show blooms, twenty grow for the securing of a fine late autumn display of bloom in their own houses. Employed in this latter way, the Chrysanthemum has proved to be a wonderful gain to our gardens, and practically bridges over the seasons, bringing autumn florally hand in hand with the spring, for in houses in which there is a little warmth when the Chrysanthemums are over, there is a wealth of spring-flowering plants, a little precocious, ready to take their places. Outdoors the flowers were beautiful up to the 27th ult, when severe frost spoilt them, but we had a grand blooming season for them all the same.

A. D.

SPOILING THE CHRYSANTHEMUM.

A GARDENING PAPER wants to be funny at the expense of those who regret that the Chrysanthemum is not shown in as pretty a way as it might be. It says:—

The sagacious reformers are, without exception, persons who do not show Chrysanthemums, and only a few of their number really cultivate them. Now we have our rights, and we demand that all flowers shall be black, scented with essence of cloves, and be shown a stalk end uppermost in angular sugar basins.

In the same issue, however, one of its own writers, Mr. Payne, says something more severe than has been said in THE GARDEN:—

The method of staging cut flowers of Chrysanthemums at English shows is a barbarous, and consequently inartistic one. It is a relic of the old Dahlia shows when it was of more importance in the eyes of the florists in the early part of the century to study the properties of each individual flower than to pay regard to the general artistic aspect of the exhibitions as a whole. At the time of day when many of the principal shows were held in the back parlours or club rooms of some local "pub," it was of little moment to study anything beyond excellence of cultivation in the individual flower, but the time is not far distant when other considerations will have to be taken into account.

Even the same paper says further on:—

Let there be classes formed for new methods of grouping or displaying plants and blooms, the prizes to be awarded for novelty combined with good taste. There would thus be opened a field for the inventive and observant to do something better than complain.

So probably, unless the ghost of George Glenny be raised up to declare that everything should be round as a cart-wheel, there may be some chance of seeing the Chrysanthemum at a flower show retaining a little of its beauty of form or habit.

— All who love the Chrysanthemum much, but love Nature more, will thank you for your vigorous protest against the modern methods of growing and showing them. At present rates of running up the

plants and running out the blooms step-ladders will become needful to see and special baskets to carry the single flowers. And where is the benefit of this increase of stature and of size? My height approaches near to 6 feet, but in visiting some large collections of Chrysanthemums this autumn the growers had to bend down their plants to enable me to see or appreciate the marvellous merits of running up two or three shoots to a plant far beyond my natural range of vision. In other cases long vistas of green giants were so fixed to temporary trellises, that there was no means of looking on their tops unless by means of step ladders. I do not say there was no merit in these giant avenues of verdant Chrysanthemums; on the contrary, there was much and novel merit. The plants in the best examples were feathered to the base with foliage of abnormal size, substance, and verdure. The Willow-like shoots were also marvellous illustrations of the results of the concentration of force. The latter is held of such importance by some of our most successful growers, that some plants with one and two shoots of abnormal length and strength were pointed out as far excelling those with three shoots, the normal number under the modern method of growing the Chrysanthemum.

This fancy for three shoots, however, seems a mistake if the object is to concentrate vital force to the uttermost, so possibly we shall soon see a further reduction until single-stemmed plants become the rule. By choosing the strongest cuttings and running them up from rooting to blooming without check or stop, the highest altitude and doubtless the biggest blooms may be obtained. Neither should the latter be despised. To have the flowers of the largest possible size and time them so as to have them in perfection almost to a day for the great show need consummate and special care and skill. Even the instructions to this end have become so technical as to need almost a special dictionary to interpret them. The fact is, the growing of Chrysanthemums for showing has become a sort of fetish—a species of rare and costly delectation for a kind of inner circle or guild, about which the general public know little, and care less. In this pursuit the plant counts for little or nothing, the size and finish of the flowers and the awards being the be all and end all of showing. Horticulturally, too, this inordinate concentration of force is not without its uses and its warnings, to this effect: that under this forcing regimen it is by no means always the fittest, that is the best, Chrysanthemums that survive the longest or succeed the most.

Any finish, too, that can be put into Chrysanthemum blooms through culture should be welcomed, while any artificial dressings or adjustments should disqualify—a law that would surely be gratefully welcomed by all growers, as their ambition is to excel in culture, and not to be rewarded for mere floral millinery.

So long as proprietors and general growers and the public grasp the fact that show Chrysanthemums are grown at great cost for exhibition chiefly, the shows of both may do more public good than harm. But let the belief become general that these are the most picturesque or profitable forms of presenting either, and that all who fail to reach these monstrous examples have failed, and great loss and evil may ensue.

It may be too much to expect that the National or other great Chrysanthemum societies will at once confess that already of height of plants and size of blooms they have had more than enough. But surely, side by side with these giants and monsters, they might open their schedules for collections of the dwarfiest, most freely flowered, and most natural trained plants. For example, instead of the orthodox three or five-shooted examples, terminated with single blooms severely disbudded to one, let bushy plants, with any number of healthy shoots feathered with leaves to the pot and carrying crops of two to five hundred blossoms, be invited and richly rewarded. This would do something—it might be very much—to restore the Chrysanthemum to its original place of honour and usefulness as a decorative plant for the greenhouse,

conservatory, window garden, or sitting-room throughout the winter months.

It is far more pleasure to praise than to blame in any or all cases where praise is possible; hence the pleasure with which we noted the beauty and success of the cut-back plants of the Messrs. Laing at the recent great show.

Old-fashioned growers were generally aware that cut-backs could be bloomed at little more than half the height of maidens. But such old truths need re-stating as emphatically as possible to-day, as upon the fact of their being carefully noted much of the future usefulness and beauty of the Chrysanthemum for decoration indoors and out may depend. In our eager race after height and size through recent years, the decorative nature of more natural grown plants has been sadly overlooked. It is even feared that some of the oldest and hardiest varieties for outside culture may have been lost, though some of the best are not seldom met with in the most unexpected and out-of-the-way places. It seems also probable that through harder courses of culture, semi-starving regimens, and the use of older plants, not a few existing varieties would become hardier, while harder varieties might also be imported from China or Japan. Through a revival of the hardest pompon and others of the smaller-flowered varieties, the raising of seedlings, and more attention to its cultivation in the open air in groups, borders, hedges, &c., as well as for the covering of rough fences, palings, walls and out-buildings, there is little doubt that the decorative value of the Chrysanthemum will assume far more importance in the gardens and landscapes of the future than it has done in the past.—D. T. F.

— The admirable articles in THE GARDEN, Nov. 23 (p. 471), condemning the present system of Chrysanthemum culture will be read with interest and much appreciated by all true lovers of the Chrysanthemum, for the huge blooms elevated on the top of a long stem, which is devoid of foliage for some distance, are extremely ugly. True, the cut-back plants are much dwarfer, but when the flowers on them are reduced to two or three, the plants are then altogether wanting in the grace and beauty of a naturally grown specimen. I was much pleased with those in the temperate house at Kew (noted on p. 490); indeed, they were, according to my idea, the finest lot of Chrysanthemums I have seen this season, the blooms being good, not coarse, the foliage ample, and well coloured; while the plants were allowed to assume their natural bushy character, no more sticks being used than were absolutely necessary for the support of the branches. One result of this rage for big blooms is that many desirable varieties are now almost discarded because their flowers are not large enough, yet some of them are among the very best when grown naturally, as they retain their foliage well, and when required for cutting, the partially expanded buds surrounding an open blossom enhance the beauty of the latter, and, what is more, the flowers in this way last much longer than those huge overfed blooms.—H. P.

Lady Burke.—This is a beautiful single variety, the flowers rich golden yellow, and not much larger than a halfpenny. It is a very free-flowering variety, and just the thing for cutting, as the flowers have substance and a strong telling colour. Some blooms received from Mr. Wildsmith show what a useful sort it is.

Chrysanthemum Peter the Great.—I quite agree with all "B." (page 471) says in favour of Peter the Great Chrysanthemum for growing on the natural system, or rather for greenhouse or conservatory decoration, as plants with from ten to twenty blooms are beautiful objects, and make a fine show, the flowers being so free in outline and form, and of such a pleasing soft colour. For exhibition I do not think it will be much grown again, as *Gloriosum* is likely to supersede it, the rage at present being more for size than refinement and finish.—S. D.

Chrysanthemum Cullingfordi.—Amongst the many qualities which render the Chrysanthemum

mum so useful, that of an agreeable fragrance cannot often be included. The above variety, however, may be pointed out as delightfully fragrant, the flowers having a distinctly violet-like odour. This does not appear to be characteristic of them at all times; at least it is much more apparent in the early part of the day. The beauty of this variety is best brought out by allowing the flowers to develop four or six together at the end of each shoot. It is one of the richest coloured of reflexed Chrysanthemums, being of a deep crimson-maroon. By reason of its robust constitution and the fragrance and colour of its blooms it is worth a place in the smallest collections.

FERNS.

W. H. GOWER.

SELECT ADIANTUMS.

MAIDEN-HAIR FERNS are always admired, and it is no wonder that they are favourites, for

plant was shown at the International Exhibition the only international show, by the way, ever held in England by the Horticultural Society, whilst in Belgium a fine exhibition is held every five years, and the society is flourishing. This beautiful Adiantum was first shown by the Messrs. Veitch, of Chelsea. It was introduced from Barbadoes. Curiously enough, I believe the plant has always been barren, or at least I have never seen a fertile state of the plant, and I have had many thousands through my hands and have seen the plant in many hundreds of gardens; this fact has led to the supposition of its being a hybrid form of *A. tenerum*, but be it sport or hybrid, it is the most beautiful Maiden-hair which has yet been found. A description of the plant is quite unnecessary with such an illustration. Suffice it to say that it is a plant which revels in strong heat and bright light and a fair amount of sunshine. Indeed it requires a much greater amount of the

A. CUBENSE is another very pretty plant, which is a native of marly banks and dry places by the seaside on the island of Jamaica. It is frequently found as a simply pinnate plant, and again with but a pair of short side branches at the base, but I also have it with two pairs of branches at the base. The fronds vary from 9 inches to 18 inches high, with jet black stems and rich deep green pinnæ.

A. CRISTATUM is another magnificent plant, but yet it is one that is seldom seen in good condition. The fronds on a well-grown specimen are each from 2 feet to 3 feet long. It appears to be somewhat plentiful in Jamaica.

A. CURVATUM.—No more beautiful Fern exists than this species when well grown, but a well developed specimen is rarely seen. The fronds are each some 18 inches or 2 feet high and a foot or more broad. It enjoys shade and likes to be kept somewhat dry.

A. DOLABRIFORME is another basket kind, which grows freely in a warm moist stove; in growth it much resembles *A. lunulatum*, but the pinnæ are much larger, and its fronds are permanent and do not die down in the winter months. They are also viviparous at the points, and form a pretty mass of young plants.

A. EDGEWORTHII is a plant which botanically is said to be the same as *A. caudatum*; it is, however, sufficiently distinct as a garden plant to require a separate name; it has the habit of *caudatum*, and is very prolific in forming young plants at the points of the fronds; the pinnæ, however, are somewhat different in shape, less villous, and consequently deeper and brighter green in colour.

A. DIGITATUM is a very pretty plant, belonging to the scandent group. It has fronds each from 3 inches to 4 inches or more high, and about three times divided, the stems being black and shining. *A. Feei* is another climbing variety, better known perhaps by the name of *A. flexuosum*, which was given it by Sir William Hooker on account of the zigzag rachis; its fronds are each several feet in length. The pinnules when barren are deeply toothed, but when fertile they are deeply reflexed all round.

A. FRAGILE.—In this we have a dwarf and pretty tufted species, somewhat resembling a small form of *A. venustum*, and of just such a glaucous hue. It has, however, a peculiar character, in that the pinnæ are jointed to the top of stipes, so that in the event of the plant becoming dry the whole of the pinnules fall away, leaving nothing but bare stems. It is found in Jamaica, growing on chalky rocks.

A. HENSLOWIANUM is a beautiful erect-growing plant with fronds some 18 inches or 2 feet high.

A. MACROPHYLLUM is a beautiful plant with large pinnæ, arranged in pairs on a jet black stem, the barren pinnules being about 3 inches long and 2 inches broad; when young of a rich bright pink changing with age to deep green, the fertile ones narrower. We have now a form of this plant called bipinnatum having a pair of side branches at the base; this adds materially to the effect. I recently received from the Messrs. Rogers, nurserymen, of Lodsworth, Sussex, a beautiful form with streaks of white variegation, for which I cannot suggest a better name than *albo-striatum*; it will become a marked beauty in a collection, and it is not likely to run out of character, as the Messrs. Rogers tell me they have had the plant eleven years and it has always maintained its character, having raised it from a spore.

A. MONOCHLAMYS is a small-growing Japanese form, which grows on the hill-sides in the Straits of



Adiantum farleyense.

all are exceedingly beautiful, and all are useful in a cut state, although some may be used with more advantage than others. *A. cuneatum* is frequently called "the Maiden-hair Fern;" although we have upwards of 100 described kinds and more than one-half that number in cultivation, yet Kew is one of the only places where a collection of kinds can be seen together. In these days of Fern revival I am under the impression that it is a want of knowledge of the kinds to inquire for that is one of the chief stumbling-blocks to their more extensive cultivation, and I therefore introduce to my readers a few of the more choice kinds, and amongst these the subject of our illustration (*A. farleyense*) must ever stand pre-eminent. The history of this plant is somewhat obscure, but I think it was in the year 1866 that the

latter than the majority of Ferns, as if heavily shaded it comes weak. Another peculiarity is that it should not be allowed to get larger than the plant shown in our illustration, as the fronds are apt to decrease in size, and I may say that I have always seen the largest and most beautiful fronds upon small plants. The plants thrive best when the soil consists of fully half light turfy loam.

A. CAUDATUM is one of the most beautiful of basket Ferns; the fronds are somewhat erect, but beautifully curved, and I have only seen this plant non-productive at the points when it has been grown in too dry an atmosphere to allow the young buds to develop. I have had a specimen of this species with nearly a hundred fronds upon the one plant, and these were each upwards of 18 inches long, and nearly all viviparous at the apex. It requires stove warmth.

Korea. It is easily distinguished by the large and bold single sori set in a deep sinus on the top of the pinnules.

A. PALMATUM is another fine species, with very long fronds, which are about twice divided, the pinnules being large, fan-shaped and bright green.

A. WILLIAMSII (the golden Maiden-hair) should not be absent from any collection; its fronds are tall and the pinnules small. The basal part of the stem is clothed with a golden farina, and a little of this is also dusted over the underside of the pinnules, whilst the length of the fronds, coupled with their hardy character, renders them very suitable for using in table glasses with cut flowers.

Other choice kinds of noble growth are *A. peruvianum*, *velutinum*, and *subcordatum*, whilst such kinds as *A. polyphyllum*, *trapeziforme*, *tetraphyllum*, *pulverulentum*, &c., although more frequently seen, are yet not nearly so largely grown as they deserve to be, and even the many small-growing kinds, such as *A. tinctum*, *bellum*, *Pacotti*, *Veitchi*, and a host of others could be easily grown in private gardens in place of having so many plants of the old and very beautiful *A. cuneatum*.

FORCING STRUTHIOPTERIS GERMANICA.

ONOCLEA GERMANICA or, as it is more popularly known, *Struthiopteris germanica* is one of the most handsome, as well as one of the most curious, of all European Ferns. Handsome on account of the delicacy of its fronds, and of the perfect and elegant vase shape in which they are disposed. It is curious from the production of two distinct sorts of fronds; the barren ones, broad, lanceolate in form, and attenuated at their base, measure each from 24 inches to 30 inches long, while the fertile ones, which are produced from the centre, are short, barely 15 inches long, on strong crowns, stiff, much contracted, and disposed in the form of a rigid shuttlecock. The fertile fronds assume a peculiar brownish tint in the autumn, when they alone remain on the plant, as the barren fronds are deciduous and die down early in October, if not sooner. This lovely Fern, which in Europe is found in a wild state only in the central and eastern parts, in Germany, Austria, Denmark, Finland, Russia &c., is also peculiar on account of the rambling character of its underground rhizomes, which, extending to long distances, are exceedingly prolific, the point of each producing a young plant. On that account, and also through its being thoroughly hardy and withstanding any amount of frost, it is an excellent Fern to introduce into out-of-door ferneries of large dimensions, as also into the woods, where, provided the soil be of a naturally humid nature, it rapidly forms a sort of undergrowth of the most pleasing effect. Its noble habit, the lovely pale colour of its fronds, and their delicate texture, well shown when growing outside among other Ferns, with which it forms a striking contrast, are so many characters shown to greater advantage still under artificial cultivation. It is grown extensively on the Continent for the purpose of spring forcing, when the light colour of its foliage is most valuable for decoration. In March or April the young plants are placed in the open ground in a marshy or boggy compost of peat, leaf-mould and loam, or *terre franche* (which is the nearest approach to our loam, although lacking some of its nutritive properties). They are supplied with an abundance of water all through the summer, and rapidly form good strong crowns, which, being potted in November and kept perfectly cold until wanted, are ready for forcing in early spring, when they must be brought out in gentle heat and with a certain amount of air to ensure good substance in the young fronds, which are produced at the rate of from twelve to eighteen to each good crown. S.

The American Feather Fern (*Struthiopteris pennsylvanica*).—The American Feather Fern is so distinct and handsome that it should be added to all collections of hardy Ferns. It is happily

named, for the fertile fronds rise in a cluster from the centre of the plant, and their folded pinnæ which contain the spores render them very distinct and feather-like. The barren fronds are each about a yard long, rather narrow, but graceful in appearance, and of a light green colour. There is a great quantity of this Fern at Drinkstone, both in the hardy fernery and in sheltered positions between shrubs upon the banks of the lake, where, in a light moist soil, it grows into rich, handsome and spreading masses. It is a fine Fern for naturalising about the garden or ground, especially where there is an accumulation of leaf soil or vegetable matter near a lake or stream. It also does well and looks well in association with *Rhododendrons* or *Azaleas*, as it flourishes in the peaty soil these things require.—A. H.

ORCHIDS.

W. H. GOWER.

CALANTHE VESTITA MYLESI.

I HAVE had a great quantity of white, or whitish flowers of this species come to me lately all differing in some degree from each other. Some of the contributors speak in loud praise of the free-flowering character of their plants, but I do not think there can be much difference, as the number of spikes depends entirely upon the strength of the bulbs. The whitest flower which I have ever seen is the form named *Mylesi*, which is now in bloom in the nursery of Messrs. Williams and Son, of Holloway. This, I believe, is a new seedling. The spike is long and the flowers somewhat closely set; the flowers are certainly of the pure *vestita* type; they are thick and fleshy in texture and of the purest paper-white with just a faint tinge of lemon-yellow in the eye. All the other flowers appear to be of a creamy tinge when put beside it, and therefore I have to pronounce this the best pure white form of *C. vestita* which has hitherto come under my notice. *C. vestita*, I observe, is flowering in various collections in great beauty just now, and many good forms of both the yellow-eyed variety (*C. vestita oculata-flava*) as well as of the red-eyed form (*C. vestita oculata-rubra*). Of this latter variety the best form I have seen for a long time is now flowering in the collection of Mr. Howard, The Grove, Teddington.

Odontoglossum crispum (Sander's variety).—There is now flowering in the St. Albans Nursery a magnificent form of this species; indeed, I shall not be wrong in pronouncing it the very finest spotted form known, as it is far superior to the form named *O. crispum Veitchianum* in size and shape, the flowers measuring close upon 4 inches across, the sepals being very broad as well as the petals, thus making a very round and full flower. The surface is blotched in front very heavily with large spots and blotches of reddish brown on a white ground, whilst behind they are suffused with crimson, and the substance of the flower is so great that no trace is visible in front. The lip is also very large and broad, with a cuspidate tip, also very heavily marked with deeper spots and blotches than the petals, with the crests yellow. When it becomes stronger the flowers no doubt will improve.—W.

Cœlogyne Gardneriana.—This, one of the very prettiest of the family when strong and vigorous, is, nevertheless, somewhat looked down upon by many Orchid growers, perhaps because the distichous flowers are each furnished with a large brown bract at the base, and because the flowers do not open well. The pendent raceme, some 9 inches or 10 inches long, bears a two-ranked set of blooms some twelve or fourteen together, each flower being $2\frac{1}{2}$ inches long and of the purest snow-white, saving the lip, which is bright lemon-yellow at the tip. Several spikes of this plant open together form an

admirable picture. This species is easily grown into a good specimen provided the pot is well drained. It should be potted in good rough peat and Sphagnum Moss, and be grown at the cool end of the Cattleya house, and be watered freely when growing. When in flower the atmosphere should be kept somewhat dry, or the pure white flowers are very liable to become spotted. It comes from Khasya and other parts of Northern India, and was recently flowering in Sir Trevor Lawrence's collection.—G.

Dendrobium superbiens.—This species blooms freely. The plant in question resembles very much *D. bigibbum* in its growth, and the blooms are of a warm crimson-purple hue; they vary considerably, but taken all in all it is one of the very best of the Australian Dendrobies, and the Messrs. Williams share with the Messrs. Veitch the honour of having introduced the plant to the Orchid growers of this country. Being a native of the extreme north of Australia and some of the adjacent islands, it is a plant which enjoys every bit of sunshine we can give it with heat and moisture, and it cannot be successfully grown under any other treatment; indeed it thrives with *Crotons* and such like plants.

Cattleya Percivaliana (P. R. W.).—This is the name of the flower sent; it is a beautiful species belonging to the labiate section, and was introduced by Mr. Sander some seven or eight years ago, and has not yet been seen in its beauty. It is said to be found growing in rocky places in the mountains of Venezuela and fully exposed to the sun and light. It naturally grows in the vicinity of streams, and hence it receives a fair amount of atmospheric moisture all the year. It flowers with us from now until *C. Trianae* comes in, and is therefore exceedingly useful, blooming as it does when few others of its kind do, although it would appear to bloom earlier in its native country. The form sent is a very good one, resembling very much the variety figured in *THE GARDEN*, June 8, 1889 (p. 532). It is, however, a very variable plant as far as colour is concerned, but the rich tawny yellow of its lip renders it a most acceptable species.

Oncidium Forbesi.—F. Chater sends a flower of this plant for a name. He says, "I have a spike of bloom bearing thirty-three flowers and it is really beautiful; will it last till Christmas?" There is little doubt but that it will last until the desired time, but do not allow the flowers to rob the plant. One of the chief causes of the loss of so many of this species, we cannot but think, is overflowering. The plant should be placed in a shallow pan and hung up near the roof-glass; the pan must be well drained and the plant made fast with a little peat and Sphagnum Moss, adding some medium-sized nodules of charcoal. Very little material should be used about the roots, and it should be kept at the warmest end of the *Odontoglossum* house during the summer, and wintered in the coolest end of the *Cattleya* house, and given sufficient water at all seasons to keep the bulbs plump.

A group of cut Orchids.—From Mr. Smith, gardener to Mr. J. S. Moss, of Winter's Hill, Bishop's Waltham, comes a beautiful assortment, amongst which may be noted *Lælia autumnalis atro-rubens* of very rich colour, which shows that the plant has been grown in the country. The flower measures fully 5 inches across. This form, if I mistake not, was introduced by the Messrs. Backhouse, of York; it does not appear to be so disagreeably scented as the normal form. A beautiful variety of *Lælia anceps* with light sepals and petals and a large and very brightly coloured lip; also a form of *Cattleya Bowringiana* called *delicata*, the flowers soft rose, the lip bordered in front with rose, white behind, extending quite up the throat, are also included. Mr. Smith says he finds that *Cattleya Bowringiana* requires more warmth, shade, and moisture than most of the *Cattleyas*, and I have no doubt that his views are quite correct. Amongst these also is a magnificent form of *Cypripedium Spicerianum*, with its dorsal sepal upwards of $2\frac{1}{2}$ inches across,

less reflexed than in the majority of forms of this fine plant and of the purest white, saving a tinge of green at the base and a broad central stripe of deep chocolate, whilst at the back it is very brightly coloured, in this respect much resembling a form called *nanum*, lately received from Mr. Howard's garden at Teddington. Fine forms of *Cypripedium calurum*, *C. cardinale*, &c., also came, all tending to make up a beautiful display which will be highly appreciated during the festive season of Christmas.

PROMENÆAS.

WHILST devoid of any striking features, the six or eight species constituting the genus *Promenæa* are amongst the prettiest and quaintest of small Orchids. Once a part of *Maxillaria*, they have, along with several other reputed genera, been reduced to *Zygopetalum*. From *Zygopetalum* proper they differ roughly in their small size, not being more than 2 inches or 3 inches high, and their one or two-flowered scapes. They are not difficult to cultivate and healthy plants flower freely. Considering also the little space they require and the additional interest they give to the Orchid house, they fully deserve a more general notice.

The oldest and best known species is *P. citrina*, a trim and singularly pretty little plant. The flower is $1\frac{1}{2}$ inches in diameter and of a rich, deep yellow, the side lobes of the lip being spotted with crimson, and a blotch of the same colour occurs at the base of the middle lobe. It flowers in July and August, and like all the *Promenæas* is a native of Brazil.

Flowering next after this comes *P. stapelioides*, whose flowers are amongst the most curiously marked in the whole family. In habit it greatly resembles *P. citrina*, although scarcely so robust. The flowers are produced singly or in pairs, on short, deflexed scapes, the sepals and petals being of a greenish-yellow with numerous spots and transverse bars of deep purple, whilst the lip is of the blackest purple except at the margin. The colour and marking of the flowers strongly suggest that of some *Stapelias*—hence the specific name.

Another species to be recommended is *P. Rollisoni*, a neat little plant differing but slightly in general appearance from the preceding. It flowers at this season, a plant at Kew having been in bloom for some weeks. The flowers are pale yellow, almost white, the lip being numerously dotted with crimson at the base. These plants require no special treatment, careful and constant attention being the chief requisite.

Promenæas should be grown in shallow pans and suspended near the glass in the intermediate house. The warmest house has been recommended for them, but my experience leads me to prefer the intermediate house. The thin texture of the leaves indicates the necessity for careful shading, and in this respect it is convenient to set the plants in that part of the house occupied by the *Miltonias*. *Promenæas* thrive in a compost of fibrous peat, Sphagnum, and a few pieces of soft, broken brick, and flower with great regularity provided a sufficiently vigorous growth is made. During winter, therefore, they may be kept moderately moist.

W. B.

Trichosma suavis.—This species is now flowering in many of the Orchid collections around London, and although it is an exceedingly beautiful plant when seen by itself, yet when flowering in numbers, as I saw it lately, it is simply charming, whilst the delicate fragrance of its blooms renders it doubly welcome.—G.

Oncidium Jonesianum.—"J. C. B." sends a very nice box of varieties of this beautiful species, some with pure white lips, more or less spotted with cinnamon-brown, but the one marked 2 is the same as is figured as variety *flavens* and is very distinct, owing to the length of the spikes. "J. C. B." has apparently been doing these plants well, and he says:—

These plants have all been sprinkled with water from the syringe daily through the summer months, and during the hottest days twice within the day, and they have grown well. Now, however, I do not

water them overhead at all. They are grown on bare teak-wood rafts, and have rooted well. I send the enclosed flowers to show that there is nothing in the argument of non-wetting of the leaves being the secret of success in the growth of this plant.

I quite agree with "J. C. B." in this matter also, but I believe the plant grows better in a good warm house during growth, as I have observed that it appears to thrive best in gardens where it is grown in the East Indian house.—H.

Lælia albida.—From amongst the collection of flowers received from "Liverpool" of this species, I do not see more than one form that can be said to be thoroughly distinct, and that is the flower marked No. 5. It is the same as that variety named by Reichenbach *Lælia albida sulphurea*, in which the sepals and petals are of a pale yellow, and the lip similar, saving a narrow marginal border of soft flesh colour, the inner side of the lateral lobes being veined with purple. The other forms differ, it is true, in size and breadth of petals, and also in the intensity of colour in the lip, but there is not one amongst them which I consider worthy of a name.—G.

KITCHEN GARDEN.

RECKLESS DRAINAGE.

LARGE tracts of land in various parts of the country have been undoubtedly greatly improved in value by a good system of drainage, and I hold it to be equally certain that there has been much unnecessary outlay, and even serious harm done, by a reckless resort to this presumably infallible remedy for coldness, dampness, and sterility of soils. Saturated ground must be drained before it can be got into a productive state, this important work being intelligently and thoroughly done as the first preliminary to other improving measures. Seeing, however, how surprisingly conditions vary, even in a single district or garden, it follows that no rule holds good as to the system of drainage to be adopted. Thus it is possible to be too economical in the matter of laying drains, and, on the other hand, worse results may follow if too many are sunk where the natural drainage prevents anything approaching saturation. Many years ago I had a good opportunity of testing the truth of the latter observation, and quite recently I have discovered that the greater portion of the drains in our gardens are almost worthless.

A friend of mine in Essex having decided to plant several acres of ground with standard fruit trees, the intervening spaces to be cropped with vegetables until the trees were of good size, did not at first cut other than surface drains or open furrows, and the ground being located on a gentle declivity, much of the rainfall passed freely away. The surface soil to a good depth was of a fairly retentive loamy nature, resting on a coarse gravelly subsoil, a subsoiling plough being used prior to cropping the ground. The trees on the greater portion of the ground grew away freely from the first, and the other crops were also most satisfactory; but the case was very different in the lower one-third of orchard, neither the trees nor the vegetables thriving satisfactorily, owing, as it was soon apparent, to the water-logged state of the ground. If the owner had been content to drain thoroughly the stagnated portion only, and the rest very lightly or not at all, the results would have been most satisfactory throughout. Unfortunately, he decided to run 2-inch drains, at a depth of about 3 feet and at intervals of about 8 yards, or midway between the rows of trees, from the top to the bottom of the field. An improvement was soon apparent in the trees and crops growing on the previously badly-drained

locality, but the remainder were not long before they gave signs of impoverishment at the roots; the drains robbed them of much-needed moisture, in fact, and not till two-thirds of these were withdrawn or stopped did the trees again make satisfactory progress. It is my belief that there are numerous kitchen gardens in this country that have been equally as recklessly over-drained. In the case of free soil and subsoils resting on any kind of porous under-stratum, there is little danger of saturation in the upper half of a garden sloping in any direction, but it may happen that the water soaking down from higher levels may find its way to near the surface lower down and actually form pools on the top of the ground at the lowest or level part of the garden. There ought to be no difficulty in discovering at what depth water is held if at all unduly by the soil, the drain being laid accordingly. For the naturally well-drained upland positions, if any drains are required at all, these should be not less than 14 yards apart and fully 1 yard deep, 4 feet to 5 feet being perhaps a better depth. In all probability a continuation of these drains to the main drain taken along to a good outlet at the lowest part of the garden would be ample throughout. The outlet must affect the depth of the drains generally, though a very slight fall only is necessary, and in the case of all free-working soils the deeper they are sunk the more effective they become, and fewer in number suffice.

Medium soils resting on a fairly porous subsoil, whether the garden has a natural fall or is on a level, require to be moderately drained. The drains ought to be sunk deeply, or say, if it can be managed, about 4 feet in depth, the distance apart, varying according to circumstances, from 12 yards to 15 yards. Rain first soaks through the ground into the subsoil, where, if the nature of the latter is somewhat porous and it runs away into the main drain very rapidly, the ground is most probably over-drained. There should be no great rush of water directly after a heavy shower of rain, or the goodness contained in the rain will not be absorbed by the soil, but, on the contrary, the latter may be largely robbed of fertility by the rapid transit of water. There is little danger of the latter occurring in the case of heavy clayey soils, these usually being too retentive of moisture and much too cold in consequence. The garden under my charge varies considerably, sandstone cropping up not far from the surface in some places and clay (lower Oolite) in others, clay being abundant in the soil throughout. We rarely suffer from drought, plenty of warmth, rather than moisture from above, best suiting our crops. In several places snow at one time was apt to lie much longer than it ought to, and this, coupled with other signs, served to convince me that the system of drainage was imperfect. It was meant to be thorough, and many years ago was most probably more effective than now. The first proceeding when the draining was originally commenced, and one worthy of imitation, too, was the cutting of a drain 8 feet deep along the upper side of the garden, but outside the walls, so as to carry off spring water, which is very plentiful hereabouts, and also any that drained down from still higher land at the back; 3 inch socket-pipe drains were laid to carry off this intercepted water, but when these were found recently they were perfectly dry, no water evidently having passed through them for a long time. To be brief, the cross drain is completely choked by the roots of forest trees planted to afford shelter to the garden, and instead of the water from the higher ground and springs running down the socket drains it finds its way

into the stoke-holes and other positions where it could well be dispensed with. It is useless to cut another deep drain near the trees, but other deep cross drains have been, or are being, laid inside the garden, and these will do good work. The ordinary drains are in many places 3 feet or more below the surface, fully 1 foot of solid clay being above them. I am not prepared to say they are absolutely useless, but I very much question if they are capable of drawing water through this mass of clay, and would much prefer they were from 9 inches to 12 inches nearer the surface. I am also of opinion that the drains in clayey land ought to be not more than 7 yards apart, and if they are sunk 3 feet or more in depth, they may well be even closer together. In each and every case 2-inch pipes are quite large enough for the small or furrow drains, these being connected with a main drain formed with 4-inch or larger pipes according to the extent of the ground being drained. A good outlet should be formed and well protected, and this being kept clear and examined occasionally, it will soon be discovered whether the work has been well done or not. Where water is scarce it is a good plan to form deep tanks or reservoirs and drain the water into these, a good supply being thereby assured.

W. IGGULDEN.

TOMATO NOTES.

NEVER before, I suppose, have Tomatoes been grown in this country to such an extent as this year. For years past their cultivation has been steadily increasing, but hitherto the demand has kept pace with it. I think it may safely be said that the climax has been reached at last. Not to mention the thousands of tons that have reached us from France and elsewhere, numerous large companies and individual growers in the Channel Islands poured immense quantities of fruit, but slightly if at all inferior to home-grown samples, into our markets, while nurseries where the fruit is either the sole production, or at any rate a leading feature, may be found by scores or hundreds in different parts of the country, but especially in the southern and home counties. Nurserymen who never grew Tomatoes before cleared their houses and planted them by thousands, though the unfavourable season of 1888 seems to have discouraged the amateur production to a considerable extent. On the other hand, though the outdoor crop generally was not a great success, some growers were fortunate, and augmented the supply with large quantities of second-rate fruit, which, coming in when the foreign supplies were nearly over, aided considerably in keeping prices low throughout the whole of the season. The wonder is where such an enormous quantity of fruit went to, and that prices did not fall still lower.

However, the climax has probably been reached, and for the present at any rate any further extension of the supply will only lower prices to an unprofitable point. But in cases of this kind the supply and demand always adjust themselves in time; as soon as prices fall to an unremunerative point some of the growers drop off, the supply is diminished, and the rates rise again. Several growers to my knowledge have this year found Tomato culture not a very profitable business. One of the largest market growers in a general way near London remarked a short time ago that "Tomatoes did not pay," and as I have seen them grown in this and other establishments, I should not think they would. Only first-class samples of the best kinds—fine even fruit, round, smooth, and of good colour and flavour—could command anything like fair prices during the greater part of the season. Though a comparatively hardy and exceptionally vigorous plant, the successful cultivation of the Tomato is by no means easy, especially where a return has to be made over expenditure.

I do not believe it can pay anyone, except, perhaps, a large capitalist who is favourably circum-

stanced in all respects, and content with 5 percent. (or less) on his outlay, or the struggling small grower who performs all his own labour, to grow Tomatoes under glass at the price at which they were selling in the London markets in August and September. Two shillings and two shillings and sixpence per dozen pounds, and in some instances even less had to be taken. This was chiefly, I believe, for outdoor fruit, gathered green and ripened inside. I should, therefore, advise intending growers to proceed cautiously next season, and not put all their eggs into one basket, or, at any rate, to watch the signs of the times carefully. The only description of fruit that commanded anything like a ready sale and fair prices during the late summer and early autumn months this year was such as I have mentioned above, viz., fine even samples of a smooth, round-fruited variety, of good colour, quality and flavour, and the fruits running not much above $\frac{1}{2}$ lb. each, nor less than two or three ounces.

The chief points to be observed in the cultivation of the Tomato are, (1) to keep the plants growing on steadily and vigorously from the first, yet at the same time to ensure a firm, stocky, and short-jointed habit of growth by full exposure to light and sunshine, free ventilation, and a moderate degree of artificial heat only; (2) to set them out firmly in a well-drained and somewhat shallow bed of almost pure fibrous loam, with little or no manure; (3) to ventilate freely whenever possible both by day and night, using a little fire-heat in wet or cold weather rather than limit the supply of fresh air; (4) to keep the plants strictly to one, or at most two stems apiece, pinching out every sign of a lateral immediately it can be perceived, but allowing the main stems to grow unchecked until quite towards the end of the season, or until they have nearly reached their allotted space; (5) to maintain a rather (but not over) dry and buoyant atmosphere, yet not fearing to use the syringe freely once or twice a day in very hot and dry weather, especially during the earlier stages; and, lastly, to keep the plants on rather short commons until one or two trusses of fruit have fairly set, and then begin gradually a judicious yet liberal system of feeding; indeed I regard it as almost impossible to overdo healthy plants that are heavily laden with fruit with liquid and other nourishment during the months of July, August and September.

Pot culture I do not regard as by any means a profitable mode of growing this fruit, except perhaps for a very early crop, and even then I would just as soon have them set out in a low ridge of soil on a slate or wooden stage with a little warmth beneath them.

To pass on to another and more unsettled part of the subject, I may say that in spite of all that has been written, the Chiswick trials, &c., the comparative qualities of the different varieties are as yet very imperfectly understood, and I am still constantly being asked, "What is the best kind of Tomato to grow?" This is by no means an easy question to answer, and for one thing, the reply must depend greatly upon the purpose for which the fruit is required. The varieties now in cultivation are so numerous, and the difference between some of them so slight, while different "strains" of the same thing vary almost more than the varieties themselves.

For productiveness, independent of any other point, a good selection of the old Large Red is, perhaps, still unsurpassed, but the quality is inferior, and the public are now beginning to exercise so much discrimination in this matter, that the form, colour, and flavour of the fruit make a considerable difference in the price, so that even when grown for sale, one of the more highly bred varieties proves fully as profitable in the end, if not quite so heavy a cropper. I have a very high opinion of the "Perfection" class. When well grown it is as productive as many far inferior kinds, while as regards appearance, quality and flavour, it is almost unequalled. If it has a fault, it is that many of the fruit come too large to suit the requirements of shopkeepers, who, as I have already

stated, prefer those ranging in weight from not less than 2 ozs. to not more than 4 ozs. apiece.

B. C. R.

KITCHEN GARDEN NOTES.

PREPARING HOTBED MATERIAL.

EARLY in the new year there is in very many places a need for a considerable quantity of heating material, and this ought to be collected and prepared during December. Hotbeds are required for forcing Potatoes, Carrots, Radishes, as well as Asparagus, Seakale, and Rhubarb, and they are also of the greatest service in raising early Lettuces, Cauliflowers, Brussels Sprouts, Celery, and other plants required for furnishing a well-managed kitchen garden. Those who are in a position to collect abundance of leaves ought to turn these to a good account in various ways. They were never more abundant or so easily collected than they are this season. Oak leaves are no doubt the best, but for ordinary hotbeds we are content to use a general mixture, and with these, strawy manure at the rate of one load of the latter to two of leaves. Both are kept in separate heaps for a time, the better to get rid of noxious gases and violent heat, one turning being sufficient for the leaves and two for the manure. After all have been well mixed together for about a week, one large bed is formed with them and a variety of frames set on. Our hotbed or frame ground is well sheltered by walls, and, in addition, is sunk about 4 feet below the level of the surrounding ground. The position being well drained and sunny, it is admirably adapted for the forcing frames, and after these are no longer required, a little levelling and a surfacing of boards is all that is needed to prepare the site for Chrysanthemums in pots. Every autumn we have at our disposal a fine heap of decayed leaves and manure, which if it does not possess any marked fertilising properties, is yet of the greatest service in lightening heavy ground, while as a mulch for fruit trees nothing equals it. All cannot have their hotbeds in a sunken position, but in many instances it is possible to set apart and level if need be a good breadth of ground in a sheltered position, and there annually form one large hotbed instead of distributing them in all directions. When one large bed is made it retains heat much longer than is the case with isolated beds, while during the summer drought does not affect it, and consequently decay steadily goes on, the whole mass soon becoming fit for wheeling on to the ground. The frames being packed as closely together as possible without blocking the gangways among them, all can be quickly attended to, and if need be, completely covered with mats and litter whenever a severe frost is imminent. When leaves are largely employed in the construction of hotbeds there is less danger of over-heating than is the case when stable manure is freely or solely used. The latter, therefore, whether intended for either isolated or large beds, should be well prepared at the outset, the more violent heat and gases, as before pointed out, being got rid of by fermentation and frequent turnings. At this time of year nothing becomes hot very rapidly, but the heaps should be watched all the same, as it is very unwise to allow the centre to become over-heated, this completely ruining it either for future heating or manurial purposes. This white heat must be anticipated by turning, as it is only the dangerous rank heat that should be got rid of, the best prepared materials being those that continue to steadily ferment and decay long after they are formed into a bed.

FORCING SEAKALE AND RHUBARB.

The old plan of forcing Seakale and Rhubarb where established in open quarters is yet the best, at any rate as far as the quality of the produce is concerned. It has its drawbacks, however, among these being the fact of its slowness in some instances, this being especially the case in cold, windy weather, and if there is a sudden change to warmer weather, there is a danger of an equally quick change in the heat of the bed, and the unwary may find a too strong heat has destroyed all the prominent crowns, or buds on the clumps being

forced. Very narrow beds are of but little service at this time of year, the heat being too quickly blown out of them. Double rows of Rhubarb and either two, three, or four rows of Seakale ought therefore, if possible, to be enclosed in a bed. The clumps in either case must first be covered with some kind of pot, box, or tub. For Seakale we prefer the ordinary Seakale pots as supplied by most potteries and horticultural sundriesmen, but have frequently substituted square bottomless boxes not less than 18 inches deep and made wide enough to enclose either one or two rows of plants. Hereabout the old iron moulds discarded by sugar manufacturers are largely used for covering Rhubarb, these with their "caps" lasting for many years. They are sugar-loaf shaped, and are sufficiently large to enclose a medium-sized clump. When Rhubarb gets too large for the iron moulds, old flour and cement tubs are substituted, and these, if well hooped and taken good care of, will last several years. Rhubarb pots can also be bought, but they are expensive and very easily broken. The first proceeding should be to lightly loosen the surface of the ground about the roots to be forced, and after the pots, tubs, or boxes are inverted over the crowns, so as to enclose the greater portion of them, it is advisable to just cover the buds with fine soil of some kind. A lid of some kind should fit neatly over the pot, tub, or box, and it ought always to be possible to get at the contents from the top, that is to say, without having to move the whole of the forcing material. A hotbed about 3 feet deep and 18 inches wider each way than the outer rows of pots ought to be sufficient for Seakale, though if leaves only are used another foot may not be too much at this early date. Rather deeper beds are needed for Rhubarb, and if leaves in either case are principally employed, they must be kept together with the aid of a covering of straw. Trial stakes should always be kept plunged in or near the centre of the beds and examined frequently. If the heat does not increase sufficiently in the course of about a week or ten days, more fresh or livelier material should be mixed with the old; while, on the other hand, if the heat rises rapidly and the stakes become too hot to hold comfortably in the palm of the hand, the centre of the bed must at once be opened, and kept open till the superfluous heat has disappeared. In the majority of gardens it is unwise to cover up many roots of either Seakale or Rhubarb at one time, a steady supply in moderate quantities being much preferable to great gluts at wide intervals. The best plan is to add to the beds about every fortnight or at the most every third week, much of the old heating material as well as the pots and other coverings being available for the later additions. Seakale if not very hard forced will yield two cuttings without being much crippled, but Rhubarb is more easily exhausted in that respect. Forced roots ought not to be suddenly exposed, but for a time should be lightly protected with straw litter. W. I.

Vegetables.—So fair and mild was the weather up to near the end of November that it is to be feared many will be caught, if not napping, quite unprepared for the change, so suddenly has it come upon us, and late Cauliflowers will have received fatal injury, Endive and Lettuce be nipped, and Celery tops so cut that they will be liable to rot when the frost goes and leaves the stalks hanging over the rows. Fortunate are they who had earthed up close, and more fortunate still those who have used a little long straw to break the force of the cold, as vegetables of all kinds are so soft and tender that a little frost tells. Had it not been for the snow the effects would have been much greater, but this the best of all protectors has done us a very friendly turn by filling in between the leaves of Lettuce and covering up the hearts of Broccoli and affording most vegetables a general shelter. It is more than likely now that we may get a very hard winter. Anyhow we shall do well to be on our guard after this, and when the present frost goes to lay in any early Broccoli or Late Autumn Giant Cauliflower that have escaped where they can be sheltered and covered if occa-

sion requires. We had a lot of the last named with splendid heads, which we hastily cut with most of the stalks and leaves attached and packed them together pretty closely on the floor of a shed. Here they will keep for some time and afford us a supply, and after they are done we shall fall back on Chou de Burghley, which with Brussels Sprouts will keep us going with green vegetables the rest of the winter till sprouting and other Broccoli come in.—S. D.

ONIONS AT EXHIBITIONS.

I OBSERVED at Twickenham Chrysanthemum show the other day very fine samples of various of the Banbury Onions, with which we have been made familiar. They were staged by a local trader. I ventured to inquire whether these bulbs had not been borrowed for the occasion, and was answered in the affirmative. That is a novel advertising use to which to put Onion bulbs, but is, perhaps, rather less objectionable than some other things done with Onions. Still, the purpose of this advertising is to bring into popularity certain huge forms of Onions which I admit are very solid and handsome, but to which on the exhibition table I take exception, on the ground that we seem to be setting up for Onions a diverse standard from what is held for other vegetables. There is hardly any other kind of vegetable with respect to which great size is not a disqualification. Scarcely any judge now favours exceeding dimensions in Potatoes, Cauliflowers, Carrots, Turnips, Marrows, Peas, Beans and other ordinarily exhibited vegetables; and yet he always makes a distinction in favour of abnormal Onions. When prizes are offered specifically for certain varieties it is but natural that size should dominate, as it is the object of the donors to make mere size popular. But committees of horticultural societies may at least lay down some rough conditions for the guidance of judges in their respective classes, and in all cases, so far as vegetables are concerned, were it to be clearly defined that size was in no case to be preferred to beauty and quality, the present tendency to make the biggest Onions the prize-winners or to allow size to dominate in Onions in collections, whilst quality had to be in every other vegetable, would soon be rejected as bad practice, and those bulbs would be selected for awards which have some recognised affinity in size to other vegetables. Potatoes half a pound each are held to be big enough for anything, but, strange to say, in the very same collection of vegetables in which such tubers are shown will be found Onions weighing 1 lb. each, really an absurd size for all ordinary domestic purposes, and we have no other use for Onions. If we want big Onions for baking, and very nice they are so cooked, we can get them cheap and good from the shops. The Spanish Onions come to us now in such fine clean form as to lead to the inference that sometimes they are selected for exhibition. Very possibly these have been made the seed parents of some of our Onions, but they are of a delicate strain and lack solidity and keeping quality. This latter feature, indeed, seems to mark all the very big bulbs generally. They are not the product of ordinary cultivation, as all other vegetables are, but have special treatment. The seed is sown in warmth in February, the seedlings transplanted into boxes thinly or singly into small pots, kept in a frame and gradually hardened off, then planted out in rows on soil which is half manure from old Cucumber beds, and literally forced into abnormal size by this method of culture. Of course, what one grower does, another must do to protect himself, so long as judges require mere size in exhibition Onions, for these bulbs are grown merely to secure huge bulk for show and for no other reason. All good gardeners rely for their ordinary Onion crops upon breadths sown under the usual conditions of culture, and prefer to secure in large quantities clean, handsome, solid bulbs, weighing from 6 ozs. to 8 ozs. each, and which will keep well till May next if needed. Such breadths of Onions as these in gardens are indeed meritorious, and of far more credit to the gardener than are the huge bulbs produced by abnormal methods

to gratify the egotism of some trader. As the smaller bulbs are invariably the favoured bulbs for domestic use, I should like to see the domestic standard adopted in judging Onions at shows, and some 8 ozs. made the maximum weight, the awards being made to quality and beauty allied to other desirable features. A. D.

DESTROYERS.

THE CYCLAMEN GRUB.

ALTHOUGH the larva of the black Vine weevil does not confine its attacks to the Cyclamen, its ravages are perhaps more noticeable in the case of this plant, with the exception, perhaps, of the Maiden-hair Fern, for which it has a great liking. The eggs of this weevil are laid in the early part of the summer, and no trace of injury is to be seen before the plants reach the blooming stage. They grow away all through the summer freely, but during that period the enemy is waxing in strength, and by the beginning of the winter is ready to commence the work of destruction. All at once the infected plants flag, and they will come away bodily from the soil with few or no roots to the corm. The difficulty with this pest is that the perfect insect conceals itself so artfully in the daytime, that it is next to impossible to find it. Even at night one may search in vain, so that numbers may be at work without the grower being aware of their presence. I daresay it would be possible to destroy the grub by watering with some chemical solution, but the difficulty would be to kill the grub without injuring the roots of the plants. Frequently when young plants escape they are attacked after blooming, and when they are repotted the roots should be well cleansed of all the old soil, so as to get rid of any grubs that may be in it. I have frequently taken as many as twenty larvæ from one pot, and if only two or three are left there is not much chance of the plant doing well. Although, so far as I am aware, there is not much chance of getting rid of the grub when once it has found a home in the soil, certain measures may, I have found, be taken that will reduce the danger of injury to a minimum. As before mentioned, the eggs are laid early in the summer—in June, I think—and a favourite place for them is in the leaf-soil that is used for potting. When this is employed for the final shift—say in July—the larvæ are so small that they are not easily discernible. One large Cyclamen grower has lately made a practice of passing a heavy roller over the leaf-mould, spreading it thinly out on a hard floor. At one time he suffered much from the grub, but since adopting this practice the losses have been but few. This is a plan that might easily be adopted by those who are troubled by the grub, but there is an even better way of checking it. The important point is to hinder the weevil from depositing its eggs in the compost. If this can be done, it stands to reason that the danger is in a great measure averted. If the leaf soil is covered up with a good thickness of litter, few or none of the weevils will find their way to it. If this is done in their breeding season the leaf soil will be guarded against their attacks, and, so far as I am aware, they do not go to the loam; but I think that if rotten manure is employed this should be protected in the same way. By doing this the compost will be free from grubs, but of course there is the liability of the eggs being deposited at the base of the corm after the plants are potted, and this may happen to young ones before they come into their blooming pots. A knowledge, however, of the habits of this weevil will indicate a means of reducing this danger to a minimum. The early part of June is sometimes warm, and when this is the case, air is left on frequently at night. I would advise that, whether in the case of frames or houses, this be not done till that month is well out. It is at night that the insects work, and with unerring instinct they make for the plants that will best nourish the grubs. If the house or frame is kept close they cannot well make their way in, and by July the danger is well nigh over. The grub has been so destructive in many places

of late, that it is possible the above remarks may be of service to sufferers from its ravages.

J. C. B.

THE NARCISSUS FLY.

In the *Revue Horticole* of the present year (p. 263) mention was made of the ravages of the Narcissus fly (*Merodon equestris*) on the bulbs of Narcissi, and it was stated that imported bulbs were especially affected by this pest. As Narcissi are grown, as well as other bulbs, on an extensive scale about Haarlem, it may not be out of place to state how we are circumstanced as regards the *Merodon*.

This scourge has been known in Holland for the last forty years, but it has been proved that the insect was introduced in bulbs of the double Narcissi of Constantinople coming from Italy or the south of France. The bulbs on which Réaumur found the *Merodon*, and of which he published an account in 1838, probably came from the last-named country. Bouché, of Berlin, in 1845 mentioned that he had found the *Merodon* in Narcissus bulbs which had been sent to him from Italy and the south of France. It is plain that the origin of this insect must be sought for in the regions of the Mediterranean, and that it has been introduced from these parts into Northern Europe and perhaps into America also.

In the Netherlands, for a long time past, every possible means has been adopted to vanquish this enemy. In 1853 the Industrial Society of Haarlem awarded a prize to M. F. W. van Eden for an essay on the subject, and more recently (in 1882) the General Society for the Culture of Bulbous Plants at Haarlem discussed the matter at their meetings, and subsequently published a paper on the insect by M. A. C. Groenewegen (May 15, 1883), and a fuller treatise on the same subject by Dr. J. Ritsema Bos. The remedy proposed by M. Groenewegen is to search for the chrysalides and remove them from the soil just before the plants flower, as at that time the insects are found near the surface of the ground. This plan is very generally adopted in the neighbourhood of Haarlem, and with such success that it is only in very rare cases that the insect is found in the grounds of careful cultivators, and the bulbs sent out by respectable establishments may be depended upon as being, except by the merest chance, quite free from the Narcissus fly. Dr. Ritsema Bos published in the "Archives du Musée Feyler" (2nd series, vol. ii., 2nd part, Haarlem, 1885) a treatise on the Narcissus fly, in which the life-history of the insect is described in an exhaustive manner, and a method given for destroying the larvæ by placing the bulbs in water. The practical results, however, of trials which were made of this remedy showed that steeping the bulbs in water for twenty-four hours dislodged and killed about one-third of the larvæ, but that the remaining two-thirds were not killed by keeping the bulbs even from five to eight days in water.

Haarlem.

J. H. KRELAGE.

Grubs in Carnations.—The pale yellow little grub about a quarter of an inch long that plays such havoc with Pinks and Carnations is very troublesome again with me this year. I suppose it comes from some insect that deposits its eggs in the leaves, as it commences there and eats its way downward towards the root. When it gets to the hard woody growth of the previous year, it, so far as my observation goes, stops. Some varieties are attacked more than others. I have found the green-leaved mule Pinks and Dianthus suffer most, but the white Glove and Paul Engleheart Carnations have been hit pretty hard, and all kinds suffer more or less. Hand-picking has been recommended, and it answers if resorted to almost daily, as then the grubs can be caught while in the leaf and destroyed. But it soon reaches the stem, and then the only way is to cut off the stem at a point below that which the grub has reached, which ruins next year's bloom. As one cannot be always hand-picking in October and November, what seems to be wanted is accurate information about the insect and its habits, so as, if possible, to prevent it laying its eggs

in the leaves. Will someone who has investigated the matter say what he knows about it?

—A. J. B.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

THE last meeting of the year was a fitting finish to an unusually good series of fortnightly gatherings of the society. It was one of the most interesting held, by reason of the comparative rarity of the exhibits.

A first-class certificate went to each of the following:—

CYPRIPEDIUM NIOBE.—It is no exaggeration to describe this as the daintiest gem amongst Lady's Slippers that has appeared of late years. Three plants in a pan were shown by Messrs. J. Veitch and Sons, of Chelsea. It is the result of a cross raised by Mr. Seden between *C. Fairreanum* and *C. Spicerianum*. From two such parents we might expect a beautiful progeny, and this we have certainly obtained. The hybrid has the character of both, resembling *C. Fairreanum* in the petals, which have the same characteristic bull-horn shape as in that delicate beauty. The colour is deep green, lined and suffused with dull brown, and the lip, shining as if varnished, is of a lighter colour. The staminate is like that of *Spicerianum*, but not so bright, and a distinct likeness to the same species may be traced in the dorsal sepal, which is fully $2\frac{1}{2}$ inches across, with the characteristic central longitudinal stripe. On either side are stripes of the same rich purplish colour, a strong contrast to the pure whiteness of the upper portion and the deep green colour at the base. It is a good grower, and unquestionably a hybrid the Chelsea firm may be proud of.

LÆLIO-CATTLEYA PALLAS.—This is a good form, but nothing more, the colouring wanting brightness, especially in the lip. It is a cross between *Cattleya Dowiana* and *Lælia crispa*, and unfortunately we have very little of the beauty of *C. Dowiana*, even in the lip, which is of a rather dull purple-lilac colour, relieved at the throat by a network of fine golden veins running into the interior, the frilled margin being edged with a very faint lilac shade. The sepals are in the way of those of the *Lælia*, and the petals intermediate between the two and delicately tinted.

CELIA BELLA.—*Celia* is a small, but interesting genus of epiphytes, of which *C. bella* is the brightest ornament. It is rather late in the day to certify the plant, as it has been long in cultivation, and is figured in several of the leading works. An excellent specimen crowded with flowers was shown by Mr. D. Cullimore, gardener to Mr. Malcolm Cook, Kingston Hill. It is a pretty Guatemalan species, and has long, deep green arching leaves, the upright radical scapes, each about 5 inches in length, bearing several of the funnel-shaped waxy flowers. The sepals and petals are of about equal length and half expanded, as in *Cologyne Gardneriana*. The sepals are richly coloured with magenta at the apex, and there is a spot of the same shade at the tip of the petals, the lip clear sulphur-yellow and sharp pointed. It is not often we see a plant so finely in flower as this specimen.

An award of merit went to each of the following:—

CHRYSANTHEMUM MRS. ALPHEUS HARDY.—We have heard and seen sufficient of this much-praised novelty to make further comment unnecessary. From Messrs. Pitcher and Manda, East Dulwich, S.E.

CYPRIPEDIUM T. B. HAYWOOD.—This is an interesting cross between the distinct *C. Druryi* and *C. superbiens*. The flowers are of bold shape and prettily and lightly coloured, exhibiting the same characteristic central stripes as in *C. Druryi*. From Messrs. J. Veitch and Sons.

CYPRIPEDIUM GALATEA MAJUS.—This is of the same polished character as *C. oenanthum superbum*, and a hybrid between *C. Harrisianum* and *C. Chantini*. It is a handsome and useful

Lady's Slipper, brightly coloured and of robust growth. The dorsal sepal is white at the upper portion, the remainder deep green, shaded with a purplish colour, and richly and thickly spotted with deep chocolate; the lip and petals are pale claret-purple. We can scarcely have too many *Lady's Slippers* of the character of this and *Niobe* described above. From Mr. Ballantine, gardener to Baron Schroeder, The Dell, Egham.

CARNATION WINTER CHEER.—This is a splendid variety, vigorous in growth, compact, and dwarf in habit, and throwing up a profusion of rich scarlet flowers, each of excellent form, full, broad, and robust. Several plants of it were shown by Messrs. Veitch and Sons, sufficient to indicate its unusual value at this season of the year.

ORCHIDS were the principal things of the meeting. A basketful of rare kinds came from the St. Albans Nursery of Messrs. Sander and Co., amongst other species being the new *Cattleya O'Brieniana*, fully described on p. 526 of *THE GARDEN*, Dec. 7, 1889. It is quite a distinct Brazilian species, and its unusual colour, a kind of lilac-rose, will find it many admirers. *Dendrobium Slatterianum* was shown with *D. bigibbum* for comparison. There is a strong likeness between them, but the two are distinct. The same firm also exhibited *Sophranitis grandiflora*, its carmine-coloured variety *coccinea*, and also *rosea*, which has flowers of a rose-carmine shade, besides a new species of *Odontoglossum* named *O. Wattianum*, recently described in *THE GARDEN*, and of which we hope to publish a coloured plate. It has something of the luteo-purpureum character, the sepals and petals rich yellow colour, blotched heavily with brown; the lip pale primrose-yellow, except a central suffusion of deep crimson, while there are numerous spots of the same colour round the column. *O. nevadense* and *Aerides Savageanum*, described recently in *THE GARDEN*, completed the series from the St. Albans Nursery. A bronze medal was given to Mr. Evans, gardener to Mr. J. S. Hodgson, Lythe Hill, Haslemere, for a plant of the snow-white Columbian *Masdevallia tovarensis*, the prettiest and most useful species of its genus. The plant had 162 spikes, carrying altogether 346 flowers—a beautiful mass of white bloom, as one can well imagine. If there is an Orchid that should be grown largely for decoration it is *Masdevallia tovarensis*, now a feature in all good collections. A well-grown plant of *Vanda Amesiana*, bearing a strong spike of its fragrant flowers, was shown by Mr. E. Hill, gardener to Lord Rothschild, and Mr. C. Ingram, Godalming, sent *Cypridium Lathamianum*, a hybrid between *C. villosum* and *C. Spicerianum*, the character of the two parents being well portrayed in the offspring. Mr. E. G. Wrigley, Victoria House, Dukinfield, had a specimen of *Lælia albidula*, carrying several of its graceful arching racemes of flowers, and also one of *Oncidium Forbesi*, represented by an unusually good form, the flowers large, rich brown, with here and there traces of deep greenish-yellow showing through, the margin rich yellow. Mr. J. Charlton Parr, Grappenhall, Heyes, Warrington, sent *Cypridium Lceanum*, a cross between *C. insigne* and *C. Spicerianum*, and resembling closely *C. insigne* Maulei. Messrs. J. Veitch and Sons showed several cut blooms of hybrid *Rhododendrons* and a plant of *R. Little Beauty*, a hybrid between *R. Malayanum* and the Japanese variety *R. Monarch*. It is about intermediate between the two parents; the flowers are about half the size of those of *Malayanum* and deeper in colour, while they are carried in a fairly large truss. The same firm showed a brightly-coloured Orchid named *Lælio-Cattleya Stella*, a hybrid between *L. elegans* Wolstenholmei and *L. crispa*; and *Carnation Marie Louise*, white, striped magenta. Messrs. H. Cannell and Sons, Swanley, exhibited *Chrysanthemum Crimson and Gold*, a single variety, rich crimson variegated with gold; it is scarcely beautiful, but showy; and *E. W. Clark*, an incurved Japanese type, the flowers large, deep purplish-crimson, and faintly scented with violets. This is no fancy; it is perfectly characteristic of some varieties of *Chrysanthemums* to have an odour of violets, though some regard it as imaginary. The same firm had Chinese *Primrose*

Punctata grandiflora, a pretty single rose-coloured flower, and two stands of zonal *Pelargoniums*, the brightest winter indoor flowers. A few of the best are *Amy Amphlete*, pure white; *Hyacinth*, rich scarlet; *Mrs. Wildsmith*, beautiful rose colour; *Swanley White*, white; *Mme. Patti*, shaded with salmon in the centre; and *Stella Massey*, soft rose. An interesting exhibit was the plant of *Hæmanthus hirsutus* from Mr. Froud, gardener to Mr. J. W. Ford, Chase Park, Enfield; the plant has two hairy leaves, fully 8 ins. across, and from between them rises a short, greenish coloured, hairy scape bearing a head of white flowers, relieved only by the golden-coloured anthers—a pleasant contrast. From Sir Trevor Lawrence's garden at Dorking was exhibited a specimen of *Anthurium Burfordiense*, a noble kind, robust in growth, and having a large spathe of the richest sealing-wax colour, the spadix creamy white in the lower portion, the remainder pale yellow. A very showy exhibit was *Bouvardia elegans variegata* from Messrs. Charles Lee and Son, Hammersmith. It is a sport from *elegans*, the leaves well variegated and the flowers scarlet, a crude mixture of colours which might please some. A group of plants of *Adiantum imbricatum*, considered a form of *A. Capillus-veneris*, came from Mr. G. Masters, High Legh Gardens, Knutsford. The plants are like *A. farleyense*, the fronds almost as large and the pinnae quite as bold; these are much cut at the edge, giving a crested appearance to the plants. A welcome friend was *Narcissus monophyllus*, one of the Hoop-petticoat Daffodils, from Mr. T. S. Ware. Several pans of it were shown, and there is no more delicate beauty of the winter than this charming flower. All who have a greenhouse should not be without it. Mr. Ross, gardener to Sir G. Macleay, Pendell Court Gardens, sent several spikes of *Arundo mauritanica*, a handsome feathery and graceful Grass, which is quite hardy. The spikes exhibited were cut from plants in the greenhouse, as out of doors they soon get damaged. If it can be established well in the hardy garden it should share popularity with the showier *A. conspicua*. Two large boxes of *Eucharis amazonica* blooms came from Mr. Miller, Ruxley Lodge Gardens, Esher.

FRUIT AND VEGETABLE COMMITTEE.—There was very little of either. Mr. H. Deverill, Banbury, Oxon, had a collection of Onions and three stems of Brussels Sprouts The Orton, which were given a cultural commendation for their unusually fine growth. Excellent Mushrooms for the season from an outdoor bed came from Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher. The finest exhibit of fruit was the bunches of Lady Downe's Grape from Mr. J. H. Goodacre, Elvaston Castle Gardens, the clusters finely finished and even; the same exhibitor sent fruits of Ham Green Favourite Tomato, very fine considering the lateness of the season. A splendid Smooth Cayenne Pine-apple was shown by Mr. Ross, Welford Park Gardens, Newbury; it was the finest we have seen this season, and the same exhibitor had a seedling Apple, named *Atalanta*, from *Scarlet Nonpareil*; as far as appearance goes it is a useful fruit. Messrs. W. and J. Brown, Stamford, Lincolnshire, sent a number of seedling Apples which it is impossible to judge without knowing the quality and other particulars of each. Mr. G. W. Cummins, The Grange Gardens, Surrey, exhibited Apple Ram-borough, which is like an enlarged King of the Pippins, richly flushed with red. The fruits of the Tree Tomato (*Cyphomandra betacea*) from the Rev. W. Wilks, Shirley Vicarage, Croydon, were exceedingly fine samples.

The council have lately had before them the very difficult work which always has to be done at a year's end—viz., determining on the names of three members of council whom they will recommend (according to the provisions of the charter and bye-laws) for retirement in the ensuing year. The retiring members are not eligible for re-election, and when all have laboured so hard for the society it is very difficult to say whose absence will be least detrimental. The same unenviable work occurs in the appointment of the several committees, who have done such good and excellent work in the past

year; for though in this case the retiring members are eligible for reappointment, the council is of opinion that, as in their own body, so also in the committees, a small infusion of new blood every year when it can be obtained is desirable, and there is probably no member of any committee who would not be thankful for a year's rest from labour.

A vote has been taken on the question of changing the hour of the fruit, floral, and Orchid committees from 11 a.m. to 12 noon, and in compliance with the wish of an overwhelming majority of the present members, the council have determined to adopt the later hour for next year.

The following plan of arrangements, meetings, lectures, &c., has been drawn up and adopted. Other gentlemen besides those named have been invited to contribute papers, but it would hardly be courteous to mention their names until they shall have signified their consent. The meetings, &c., will be held at 3 p.m. in the Drill Hall unless otherwise stated:—

- Jan. 14.—“A Method of Winter Gardening,” Rev. W. Wilks.
 Feb. 11.—Annual General Meeting at 117, Victoria Street.
 March 11.—“*Hippeastrums*” (*Amaryllis*), Mr. Harry Veitch, F.L.S., and Mr. James Douglas.
 March 25.—“*Saladings*,” Mons. Henry de Vilmorin.
 April 8.—“Spring Flower Gardening,” Mr. W. Ingram.
 April 15, 16, 17, 18.—Daffodil Exhibition and Conference at Chiswick. Readers of Papers: Mr. James Walker, Rev. G. H. Engleheart, Mr. J. T. Bennett-Poë, Mr. F. W. Burbidge, F.L.S., Rev. C. Wolley Dod, &c.
 April 22.—*Primula* and *Auricula* Society's Show. “On Indian *Primulas*.”
 May 13.—“Hardy Spring Flowering Shrubs and Trees.”
 May 28, 29.—Great Show in the Inner Temple Gardens.
 June 10.—“Herbaceous Peonies,” Mr. Geo. Paul and Mr. R. Irwin Lynch.
 June 24.—Exhibition of Tea Roses by the National Rose Society. “Hardy Herbaceous and Alpine Plants,” Rev. C. Wolley Dod.
 July 8.—“Cultivated Lilies.”
 July 22 and 23.—Carnation, Fern, and Selaginella Exhibition at Chiswick. Carnation Society's Show.
 22.—Conference on Carnations. Readers of Papers: Mr. M. Rowan, Mr. H. Turner, Mr. R. Dean.
 23.—Conference on Ferns and Selaginellas. Readers of Papers: Mr. J. G. Baker, F.R.S., Mr. C. T. Druery, Mr. J. Birkenhead, Mr. E. J. Lowe, F.R.S., Professor Bower, F.L.S., Mr. W. H. Gower.
 Aug. 12.—“On Fruit Drying by Evaporation as Practised in America,” Mr. E. W. Badger.
 Aug. 26.—“Hollyhocks,” Mr. James Douglas.
 Sept. 9.—“*Gladiolus*,” Mons. V. Lemoine and Mr. J. Kelway.
 Sept. 23 and 24.—Exhibition of Dahlias and Grapes at Chiswick.
 23.—Conference on Dahlias. Readers of Papers: Mr. T. W. Girdlestone, Mr. Shirley Hibberd, Mr. Walter H. Williams, &c.
 24.—Conference on Grapes. Readers of Papers: Mr. T. F. Rivers, Mr. R. D. Blackmore, &c.
 Oct. 14.—“On *Crinums*,” Sir Charles Strickland, Bart.
 Oct. 28.—“Trees and Shrubs for Large Towns,” Dr. Masters, F.R.S.
 Nov. 11.—“Chinese *Primulas*,” Mr. A. W. Sutton.
 Dec. 9.—Ordinary meeting.

NATIONAL CHRYSANTHEMUM SOCIETY.

DECEMBER 11.

THE last meeting of the season was naturally one of the smallest, and no certificates were awarded. It is impossible to see the colours of the flowers in the Royal Aquarium, usually in a condition of semi-darkness, and on Wednesday last the light was as wretched as in the Drill Hall on a foggy November day. A fresh and beautiful lot of blooms, many of them cut from old-fashioned varieties, but which are quite as beautiful as some of the newer additions, came from Mr. Taylor, gardener to Sir John Lubbock, Bt., High Elms, Kent, who grows the Chrysanthemum simply to give plenty of flowers for cutting. In his collection were such favourites as *Progne*, Mons. Astorg, Val d'Andorre, Mile. Lacroix, Mrs. Heal, and Lady Slade, all of fair size

and just the thing for filling bowls and vases. A large collection was exhibited by Mr. Owen, of Maidenhead, and amongst them the following varieties: *Mrs. J. Wannawaker*, a large-flowered incurved Japanese variety, the florets light pink, silvery reverse. *Gaspard Rozain* is exceedingly promising; it is a Japanese flower, not too large, the lower half of the flower rich rose and the centre pure white, a pretty contrast. *Mont Blanc* is a very full and big incurved Japanese variety, too coarse and large except to those who like bulky blooms. *W. W. Cowles* is another variety of considerable promise; the flower is large, petals broad and orange-red in colour, something of the same kind of shade as *Val d'Andorre*. *Ada Spaulding* is a beautiful flower of a pinkish colour, and another good kind is *H. Waterer*, which is a Japanese variety also, and yellow shaded with brown. *Faust* is a good incurved, of a rose-purple shade. A variety of the Japanese section that deserves notice is *White Elephant*. It is folly to give it such a name. The flower is of fair size and of a delicate peach colour. Mr. J. Brown is a striking yellow flower, but no improvement over *Sunflower*. A gem for cutting is the *Anemone*-flowered *Mrs. Charles Pratt*, which is of the purest white, and in this respect like the beautiful *Fleur de Marie*. *L. Canning* is a medium-sized flower, pure white, and useful for decoration, but not for exhibition. Of *Sunset*, a large single variety, it is sufficient to say we have already too many coarse types to require any additions. Messrs. H. Cannell and Sons, Swanley, showed the same varieties as described in our report of the Royal Horticultural Society, and there were a few other exhibits of minor importance.

Monstrous bouquets.—I have seen a good many displays of hand bouquets, but none to equal that at the recent Birmingham Chrysanthemum show. There were two classes provided, and in all about twenty bouquets were shown, there being scarcely an indifferent specimen among them. The premier prize bouquet in the open class was of immense proportions, and altogether too big to be of any real service, but it was so beautifully made, the flowers used being very choice, that the judges could not well do otherwise than make the award they did. In all probability the flowers used in the construction of this bouquet, and which included numerous Orchids, *Eucharises*, *Pancratiums*, *Lilies* and *Roses*, must have cost double the value of the first prize (£1), and the same may be said of the greater portion of the other competing bouquets. It is generally admitted that these huge bouquets are a mistake, that is to say, are appreciated on the exhibition table only, and why not, therefore, limit their size? Instead of competitors being allowed to show bouquets 2 feet or more in diameter, and which literally swamp the rest, why not stipulate that they should not exceed 15 inches across? This is done at Bristol with good results, and why not at Birmingham and elsewhere? This would be the means of attracting bouquets that would perhaps serve as models to private gardeners who may have to make them occasionally, and, in any case, would give the latter class of exhibitors an opportunity of competing with professionals. They cannot do this, as a rule, while the present fashion of making monstrously large bouquets prevails, simply because they have insufficient materials to work with.—W. I.

Death of Dr. Ward.—This gentleman, whose death occurred recently at Southampton at the age of eighty years, will long be remembered by orchidists. He was an early grower of the plants he loved, and his name will be perpetuated by *Dendrobium Wardianum*, one of the finest of its genus. Dr. Ward had but a small collection of Orchids at his death, just to remind him of olden times when his collection was full of choice and rare things.

BOOKS RECEIVED.

“*Les Fougères rustiques*.” By Mons. H. Correvon, Geneva.
 “*Orchids: their Culture and Management*.” Part 7. By W. Watson and W. Bean. London: Upcott Gill, 170, Strand, W.C.

WOODS & FORESTS.

CONIFEROUS TREES.

CONIFERS when properly planted and arranged in conspicuous spots in the landscape not only afford variety, but likewise impart a furnished appearance during winter when hard-wooded deciduous trees have a bare, uninviting aspect. Although coniferous trees do not display any great variety of foliage as compared with the brilliant tints exhibited in autumn by deciduous trees, yet they afford considerable variety in size, shape, and colour. When planted on unsuitable soils and exposures they never exhibit their true character, and in some cases rather prove an eyesore than an ornament. Where coniferous trees have been introduced, they not only add variety, but likewise afford considerable shelter during the dull months of winter, when deciduous trees naturally have a bare, naked appearance. It is to be regretted that coniferous trees have sometimes been misused in the formation of woodland scenery by planting them anywhere and everywhere without paying any attention to the soil and its proper preparation previous to inserting the trees. As the results of such treatment have in many cases turned out to be all but a failure, the upshot has been that in some parts of the country the whole, or nearly the whole of this interesting tribe of trees has gained a bad character. The experienced planter will, however, in most cases be able to grasp the situation and deal with it according to its merits, and from the large quantity of coniferous trees of different species and varieties to be found in public nurseries he will have no great difficulty in making a selection to meet his requirements. The Junipers exhibit great variety in foliage and fruit, and as they are nearly all hardy and capable of growing on poor soil, they may be planted on bare, exposed situations with a reasonable prospect of success. In addition to the well-known common Juniper (*J. communis*) I would strongly recommend the Chinese Juniper (*J. chinensis*) to the notice of the planter, not only on account of its hardiness, but also on account of its great beauty. The male form of this species when loaded with bright golden catkins in early spring is remarkably attractive, and as the foliage shows a variety of tints on the same plant, it makes a magnificent specimen for a well-kept Grass lawn. The contour of the plant is strictly conical. There are some varieties of this species with a pretty large proportion of their branches of a whitish colour, which makes a fine contrast with the glaucous green of the principal branches; while the foliage of another variety is mixed with that of a golden hue. On cold, exposed situations, where the soil is of a poor texture, I have planted the black Austrian and Swiss Stone Pines (of which there are several varieties) with perfect success. In spring, when the buds of the former are clothed with a white cottony substance which appears like burnished silver, the contrast between this and the dark glossy foliage of the branches is remarkable. Less hardy species of Pines and other Coniferæ may be planted with success in situations not so exposed as the former if proper precautions are taken in preparing the sites for the plants. When planting Conifers in proximity to established hard-wooded trees, the ground should not only be thoroughly broken up, but likewise all roots and chips of wood removed in order to render the soil as clean and pure as possible for the reception of the plants. One great cause of failure in renovating and improving plantations of this sort is the mistake

of allowing the roots of the established trees to gradually take possession of the fresh soil where the young tree is planted, and thus rob it of its legitimate food. I have no hesitation in saying that the cause of many of the unhealthy dwarfed species of Coniferæ to be found here and there throughout the country can be traced to this. In order to obviate this state of things, my practice has been to cut a narrow, deep trench where necessary, in order to check the roots of old trees and prevent them from extending into the fresh soil. This trench should be kept open for a series of years, until the young trees get thoroughly established. J. B. WEBSTER.

FIREWOOD—WHAT WOOD IS BEST?

NEVER, perhaps, was the subject of English firewood more worthy of consideration than at the present time, when timber, speaking generally, is almost a drug in the market, and thousands of unsaleable trees are lying about on almost every average sized estate in the country. Many people, and perhaps rightly, too, will maintain that particularly in districts where coal is plentiful it is very questionable whether there is any advantage from burning wood. I am of this opinion, as I have proved that even could wood be procured at three-fourths of its present price (firewood price), it is more expensive than coal as sold now-a-days in most of our English towns. No doubt on many large estates where there is a superfluity of unsaleable wood it would be utter folly not to have such converted into firewood, more particularly as such work gives employment to the woodmen when the inclemency of the weather puts a stop to general outdoor work. But this of itself is no proof that the firewood when prepared and ready for the grate is not equally as expensive as coal, for when the rent of ground on which the wood was grown, the felling, and converting into firewood are considered, it will be found that firewood is equally as expensive as is household coal of ordinary quality.

To those who have an old-fashioned Irish grate and who have forests of their own, the wood fire is decidedly an acquisition, and as such the best woods for the purpose of fuel will now be considered. As a rule, the heaviest wood burns longest, but for a bright and cheerful fire, the elements of the wood's composition must be duly considered, as if these are not of an inflammable nature, the wood cannot and will not burn with that rapidity and brightness which are usually desired. I have had frequent opportunities of testing the majority of English-grown woods, and with the intention of publishing a list of the best to be used as firewood, the notes from time to time recorded I now give as follows:—

Yew, where it can be had in quantity, is far preferable to any other firewood yet tried, for it burns very slowly and clearly, gives out a great heat, and emits no sparks; indeed, I have come to the conclusion that Yew in heating power more nearly approaches coal than any other English grown timber. True, it is difficult to procure Yew in sufficient quantity for fuel, but this by no means lessens the great value I have placed upon it for this purpose. Between Thorn and Holly I cannot well decide, but certainly, so far as lasting properties and heat-giving are concerned, they approach nearer to Yew than any other wood with which I have experimented. The Thorn is a sadly misused wood, for far too frequently in the grubbing out of old division fences the wood is burnt upon the ground, being wrongly considered as unfitted for converting into firewood. Amongst our forest trees, the Beech, in my opinion, produces by far the best firewood, it burning brightly, emitting a great heat, and being fairly lasting. Ash comes next, and a very pleasant fire it makes, even when used in a green state. It gives out a powerful heat, but burns rapidly. Old Oak gives out a fierce heat, but it wants a good draught to carry off the smoke. Elm I do not much care for, it making, as Scotch folk say, a "dour" fire, although when thoroughly ignited it burns fairly well. Birch I think highly

of, but, Pine-like, it emits sparks, particularly the bark. It makes, however, a nice, pleasant fire and burns cheerfully.

Of Hazel I can speak in the highest terms, but it is hard to get in the quantity desired. Hazel wood sends out a great heat, burns vigorously and most pleasantly, and is particularly clean and free from smoke. Sycamore firewood smoulders away, while Spanish Chestnut emits sparks almost as bad as any Pine, and Horse Chestnut is only second-rate, so far as heat-giving and lasting qualities are concerned. But what about the Pines? Unless with properly constructed grates the wood of resinous trees when used as firewood is highly dangerous. For my own part I would prefer a fire of Scotch Fir to that of any other wood, that is so far as a brightly-burning fire is concerned; indeed, perhaps no other wood can impart that glow of comfort and rural happiness that is associated with the Pine log. It, however, wants constant attention, for the consumption of the wood is rapid, and the sparks are anything but safe in a carpeted room. The wood of *Pinus Laricio*, owing to its containing such a quantity of resin, burns like a torch, and so does that of the Austrian Pine, *P. austriaca*. The wood of the Lebanon Cedar I prize highly, on account of the delicious perfume given off whilst combustion is going on. Do not use Cedar wood for heating the room in which hams and bacon are stored, for it imparts a taste to these that is anything but palatable. In the highlands of Scotland the roots of the Scotch Pine are highly valued as firewood, while Larch, when it can be got, burns with unusual freedom and great brightness. Spruce Fir firewood burns nicely, but consumes rapidly. This also applies to the Silver Fir, Cluster Pine, and common Larch. The Cypresses burn slowly with a steady heat, but send forth volumes of unpleasant smoke. I am referring particularly to Lawson's and the Tufted Cypresses (*C. Lawsoniana* and *C. torulosa*).

A. D. W.

The Tulip Tree at home.—This noble tree has been justly regarded by all who have seen it as the pride of the American forest. A special feature is given to its foliage by its broad, lobed, and curiously truncated smooth leaf, the top of which appears as if transversely cut off. In America its stem is as tall and straight as the mast of a ship, growing without a limb to nearly 100 feet in height. The Tulip tree is easily known, even from a distance, by the straightness of its stem.—H. C.

Height of trees in England.—It would be interesting to know the greatest height attained by trees, whether native or exotic, in England. I say advisedly England, as in Ireland and Scotland I believe they rarely exceed 100 feet. Writing from memory, the following are the highest trees recorded in THE GARDEN, viz.: Lime at Hampton Court, 120 feet; Douglas Fir at Dropmore, 124 feet (Frost, who planted it, lived to see the tree attain this height in 1886); Elm at Hatfield, 130 feet; Spruce Fir at Fountain's Abbey, 135 feet; Silver Fir (afterwards cut down) at Longleat, 144 feet. This last was, I think, the highest tree mentioned of those that had been accurately measured, but one of your correspondents speaks of a Silver Fir at Hampden House, Bucks, as nearly 200 feet. Surely if he is not far astray, for he does not say he measured it, this must be by far the highest tree in Britain.—T.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1889, thirty-six vols., price, cloth, £27; whole calf, £36; half morocco, £32 8s.

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No. 944. SATURDAY, Dec. 21, 1889. Vol. XXXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

THE GRAPE ROOM.

ONCE more the season for cutting and bottling the main crop of winter Grapes is at hand, and the question first and foremost is the condition of the room in which the bunches may be kept for four or five months in a fresh, plump, and satisfactory state of preservation. Cutting all the bunches in a single day and transferring them to bottles of water for a long time was considered a very bold step, but steadily the system worked its way, until at the present time nine-tenths of the winter Grapes grown are safe in the store room by the second week in January. Then for a season there prevailed an impression that the end of the year was the only period suitable for bottling with any degree of certainty. This idea, too, has given way, as we now cut and bottle Hamburgs in October, Muscats in November, and find the condition of the clusters is of more importance than the month or day of the month for cutting. Thin-skinned Grapes of all kinds, quite ripe by the middle or end of September, may be cut so soon as the foliage is ripe enough to part freely, and the store room being suitable, not only will they keep better off than on the Vines, but the latter, freely exposed to the elements, have a long and decided rest, fuel is saved, and the gardener is relieved of a load of anxiety. The same rule holds good in the Lady Downe's—I ought to say the Gros Colman—house, as this handsome Grape is driving the better variety out of the market grower's vine-ries. Years ago late Grapes, including the now much-neglected West's St. Peter's, were allowed to hang till March, and then finding the sap on the move many an old grower allowed his Vines to break, rubbed off the foremost buds, and pruned when the young leaves were large enough to prevent bleeding. These late sorts now have a good three months' rest at least, and where the Vines receive Muscat treatment they can have four—really and truly the key-stone of success in the production of the enormous bunches and berries now generally met with. Viewed from these points of vantage, one can see at a glance that bottling gives rest to the Vines, freedom from anxiety to the grower, reduced fuel bills to the owner, equally good Grapes to the consumer, and extra house-room for plants which require a minimum of fire-heat from December to April. Such being the changed conditions, I need not say to those who have been lax, put your Grape room in order, or to those who have not yet commenced bottling, lose no time in fitting up a dry, frost-proof, well-ventilated store-room. Light even is not an absolute necessity, but it is a great convenience when examining the bunches, and the same may be said of fire-heat—a good servant when the room is damp and the berries are attacked by mould, but a very bad master where the store is dry and the temperature ranges from 45° to 50°. If cash admits, the millionaire may build an ornate store with hollow walls and fit it up as expensively as he fits up a model dairy, and then perhaps his Grapes will not keep better than his neighbour's suspended in a dry, well-ventilated cellar, to which fire-heat can be applied when his greatest enemy, damp, is striving for the ascendancy. Given, then, a room of some kind fitted with

stands or racks for holding bottles or troughs, these should now be filled with soft water to which the addition of a piece of charcoal is quite immaterial. The room should then be cleaned up, moderately fired and ventilated to expel moisture, when it will be ready for its future occupants. I give preference to common wine bottles placed in racks at an angle of 45°, as they are almost hermetically sealed when the stalks of wood are inserted; consequently they lose very little water by evaporation, an important matter where damp is prevalent. A dry calm day should be chosen for cutting with all the wood that can be spared to ensure its passing well down into the water, that beyond the bunch being left intact, as shortening or the removal of sub-laterals allows moisture to pass by the bunch into the atmosphere. As each bunch is cut it should be carefully examined for faulty berries and transported with all the care possible, and when the work is finished a little fire-heat for a day or two may assist in dispelling moisture. The Vines having been kept dry at the root, the bunches will absorb pretty freely at first, especially where a fresh wound has been made by shortening back, but once the cells are filled and the bottles at the end of a week or so are replenished, there will be very little waste afterwards. A close watch, nevertheless, must be maintained, not only for waste of water, but also for faulty berries which escaped notice at the time the bunches were detached for storing.

MANAGEMENT OF LATE VINES AFTER THE GRAPES ARE DETACHED FOR STORING.—Having been kept without liquid food for three months, more or less, it is easy enough to imagine the tyro making a rush to the hose or water barrel, and right freely the Vines would take copious supplies from the internal borders. But time is on the wing; we have passed the turn of the year, and pruning must be thought of. If we water first and then prune the Vines will bleed; therefore we must prune first, dress each cut with styptic, and after a week has passed the internal roots may have the first watering. The Vines meantime must be cleansed, also the house, and possibly painted, when they may be tied up to the wires if old and on the spur system, along the front in a horizontal position if young and yearling rods predominate. The borders also may be pointed over and relieved of all loose mulching and inert soil, when another moiety of their allotted quantum may be given, and so on until the borders to their lowest depths are restored to a moderately moist growing condition. If the Vines are weak and the borders are over-rich, a little weak liquid at this stage will do them no harm; but this is not an absolute necessity, as the surface roots will derive immediate benefit from a dusting of crushed bones and wood ashes, which will be covered over by about 2 inches of fresh loamy compost. The house, as a matter of course, from the day the Grapes are cut, will be kept dry, airy, and cool by abundant ventilation, and plants liable to be affected by frost will not be admitted, the one great object being complete rest until the buds commence swelling naturally. But, by way of turning the whole question round, we will assume that the inside borders require re-making. Well, this being so, the top-dressing will have been omitted, and the buds being slightly on the move, the roots will be in the best possible condition for lifting and relaying in fresh compost. If the external borders have been protected by shutters, these must be removed immediately after the Grapes are cut, when a good covering of fresh stable litter will keep out frost and at the same time

supply ammonia, which may be washed in by full exposure to the elements. W. C.

CHRISTMAS DECORATIONS.

THE Christmas season is near, with its bright and happy associations, and already busy hands are at work in the shrubbery and wood to gather in the berried Holly and trailing Ivy to deck the church and hall in celebration of the great social festival. There is no more pleasing custom, sanctioned by the use of ages, than the decoration of churches and houses at this happy season. Fashion changes, and in decorations she shows the same Will-o'-the-Wisp restlessness that ever marks her fitful actions. In the olden days there were few outward symbols of the character of the season. In the village church, within whose walls the bright tidings of "Peace and goodwill towards men" seemed to come with truer force, there was little decoration. The village beadle stuck a sprig on each pew, and a few bunches here and there in odd corners, just to remind worshippers of the day of days; and it would be a happy sign if we lessened our lavish display and returned to the same simple, homely, quaint, and sparing use of things, as in the days of yore. Great slaughter is made amongst shrubs at Christmas, especially where the garden is small and the selection of material limited. It is different in the large park and woodlands where a few cartloads of greenery can be removed without injury to the natural scenery. In the small garden of a few acres an annual cutting makes sad havoc, even with a tender care for the shrubs and climbers, and this just to please the eye until Candlemas Day, when the dusty heavy wreaths and scrolls are consigned to the fire. The past few years has seen, as in harvest festivals, when the church is made a reflex of the greengrocer's shop, an increase in the use of Evergreens, that everyone who thinks of the reckless cutting of good shrubs must deplore, when the church and house could be made as Christmas in its aspect by a less extravagant use of the outward expressions of that spirit which should pervade the festive season. It would be a misfortune to have no decorations, but there is a happy medium between the rigid economy of olden days and the reckless profusion of the present age. Decorations are now made works of art in their finicking and elaborate details, which are laid on frames of wood, carried out in set devices to represent some symbol of the Christian faith. The choicer variegated shrubs and climbers are worked into these arrangements, which are paltry, unreal, and without the warmth and cheeriness of the bushes of green leaves that hung in the aisles of the old village church. If there are no berries on the Holly, bits of wool coloured with red or wax are stuck on and made to represent the delightful woodland shrub. This is unpardonable in a church, where even paper scrolls in the likeness of variegated shoots of climbers are used indiscriminately, and give as great a shock to the sensitive artist as the wretchedly executed texts and bannerets. In the home the less decoration the better, and here a greater detail in the designs may be shown which would be inappropriate in a church. In a building of noble architecture and adorned with choice and delicate tracery small designs are utterly lost, and hide the beautiful and elaborate work that is the glory of the cathedral and church. But in the home, intricate devices are appropriate if used well and worked out with taste, as they create less dust and dirt, harmful to the health. Pretty decorations can be made with Pampas plumes dyed in various

colours, and Grasses with sprigs of Holly intermixed. Such arrangements judiciously used are infinitely more tasteful and pleasing than heavy masses of foliage, and there is less need for material. A decoration last year in a London church would bear repetition as a piece of delicate adornment with a sparing use of shrubs and plants. Care had been centred on the font, fringed round the base with thin wreaths of Ivy and Everlasting Flowers, with here and there sprays of winter Heath and the coloured bracteate heads of Poinsettias. Round each of the marble pedestals were strings of Silver Holly, and over the richly carved bowl were sprigs of the mystic Mistletoe, the whole as graceful and tasteful as any decoration it has been my pleasure to inspect. A font in a church not far removed was a mass of evergreen, as lumpy and heavy as the cumbersome wreaths that hid the graceful pillars and occasionally the use of much valuable growth. In the country where the hedgerows are aglow with the crimson fruits of the Dog Rose and Dogberry, sprigs of these may be gathered for the enrichment of the decorations, and if used carefully and judiciously, the country lane will not suffer by the removal of a few of its brightest winter adornments. Decorations of all kinds are carried to excess in this present age of striving after effects. Our forefathers were content to hang a bunch of greenery at the corners of the street and to wreath the market cross, but fanciful designs showing intricate details of execution are now in fashion and on the increase. Perhaps we shall return to the simplicity of our predecessors; if so, it will be to the advantage of the church, home, and the shrubs of the garden. C.

KITCHEN GARDEN.

SPAWNING MUSHROOM BEDS.

I QUITE agree with what Mr. Muir says (GARDEN, Dec. 7, p. 530) with regard to spawning Mushroom beds at a higher temperature than is generally done, and would much rather have the heat of the manure at 90° than 75°, as at that temperature I always find that the spawn runs better. In addition to the warmth a good deal depends on the condition of the manure as regards the spawn running. To have it in proper condition it should be gathered as soon as made and before it gets into much bulk, as when a quantity is thrown together it ferments violently and becomes white or burned, and all the ammonia is driven out in the steam it gives off. Another thing that tells much against the quality of Mushroom manure is allowing it to become wet by being exposed to rain, which washes the juices out and detracts from its strength. The way to manage is to collect the manure daily as soon as it is thrown from the stables, and spread it to a depth of 6 inches or 9 inches in an open shed or some such place under cover where it should be turned over daily for a week or ten days, when, if it has been fermenting during that time, it will be fit for making the beds. I never care to have these more than a foot deep, and in putting the manure together always like to have it beaten down firmly, which is not only necessary to the growth of good Mushrooms, but also prevents the manure from over-heating and checks any tendency it has that way. After lying in this way for a couple or three days, if the temperature does not exceed 90°, the bed or beds will be fit to spawn, and the easiest way of doing this is to dibble holes about a foot apart and to thrust into each of these a piece of spawn the size of a small Potato, and then shake a little hay over the whole. This is important, as the hay not only keeps the heat very uniform, but absorbs the steam, and I have always found that spawn works much better under such a covering than it does without, and soon runs over the bed. This it does in about

three weeks, when soiling over is necessary and should not be delayed, and when it is done it is a good plan to cover again with hay, the same as before, and leave it on till the Mushrooms show. In some houses that are not well adapted for the growth of these, it is necessary to have hay or some covering always on, as then an atmosphere and conditions are created that the house lacks. These are stillness and moistness of the air and an equable warmth, without which it is next to impossible to cultivate Mushrooms with any degree of success. As to growing Mushrooms in open sheds, that may be all very well for autumn and spring when the weather is mild and favourable, but to have a constant supply during winter one must have a house or cellar where the temperature ranges about 55°, which suits Mushrooms better than one higher or lower, and one cannot maintain this in a shed that is open. We all know that tons are annually grown outdoors, but this is only done by thick and careful covering with light straw and mats, and then the crop stands still at times, or ebbs and flows according to the weather. I should think that in and about London there are numbers of railway arches that might be utilised for this industry if closed at the ends, as they would make splendid houses or places for beds, and so be turned to useful account. S. D.

KITCHEN GARDEN NOTES.

SUPPLEMENTARY MUSHROOM BEDS.

WHERE the space in Mushroom houses proper is somewhat limited, it often happens that no beds are formed near midwinter, simply because there is no room for them. The consequence of this may be a scarcity of Mushrooms early in the spring, this being at a time, too, when they are frequently in great demand—the London season having commenced. In any case, if beds can be formed now in any sheltered shed, disused cellar, or even in the open air, the chances are a very profitable crop of Mushrooms will be obtained without much trouble beyond the formation and spawning of the beds. If the beds fail in any of these makeshift or unheated positions it would most probably be due to the paucity of heating material used, shallow beds rarely heating satisfactorily at this period of the season, and even if the heat does rise to a good height, it soon drops far too low. To avoid this, much deeper beds than usual must be formed. Droppings being plentiful and thoroughly well prepared by frequent turnings, the best plan is to form a ridge-shaped bed; such, in fact, is absolutely necessary in the open, this being fully 42 inches wide at the base, tapering to a width of 6 inches, the height being 3 feet. If very firmly and evenly put together, a good portion of short stained straw being retained with the manure, shelter from cold winds, frosts, and rain being also afforded, it will heat strongly, nor will it get cold again for many weeks. Should a nearly flat bed be preferred for a shed, glazed pit or other covered-in position, this ought to be not less than 20 inches deep at the back, and nearly, or quite as high in front. Small beds, or any say not more than 6 feet long and 4 feet wide, soon become cold, and droppings being scarce, it is advisable to form a very much larger bed with the aid of fresh leaves. It is surprising how well the latter answer. A bed formed here in a cool shed late in 1888, and almost entirely of leaves, commenced to bear in March, the crop being one of the best I ever saw. Not only were the Mushrooms very numerous—large clusters being pushed up all over the bed—but the quality, too, was better than those who pin their faith entirely on horse droppings only would have us believe possible from a bed composed principally of leaves. Oak leaves are undoubtedly the best for Mushroom beds and for heating purposes generally, these being of greater substance or rather more durable than the rest, but we cannot collect Oak leaves separately, and are obliged to be content with a general mixture, Elm and Beech being more plentiful than Oak. In any case, or whatever kind of leaves is used, these require to be prepared by being thrown into a conical heap to ferment, a covering of straw litter hastening this, and also

keeping the leaves together. Directly the centre of the bed is quite hot turn it inside out, treating it similarly a second time in a few days, also watering gently if the leaves become too dry to ferment properly. Being thus sweetened and steady decay started, the time has arrived for making them into a bed. This should be at least 30 inches deep and firmly trodden together. We have tried surfacing over the beds of leaves with about 6 inches of prepared horse-droppings, and also mixing a rather greater quantity of the same, but nearly exhausted with the upper 12 inches of the bed, the latter plan answering best, probably owing to the manure rendering the steady decay of the leaves a greater certainty. In other respects the treatment of these beds is much the same as is found to answer well with those formed of manure only, the spawning being done before the heat of the bed has declined below 80°. Those at all experienced in the matter may venture to spawn a bed when the heat is nearer 90° with the best results, as it is not often the heat rises to a much greater or dangerous height. As a rule, the beds may be safely cased over at once with 2 inches of fine fresh loam, and if the trial stakes denote no great rise, then the sooner the beds are thickly covered over with soft dry strawy litter the better. Where many err is in not using abundance of this covering material, especially during the winter months. The sides as well as the surface of the beds should be enclosed by a depth of 18 inches of litter, this both excluding cold outer air and also conserving the heat of the beds. When once the beds are soiled and covered in, nothing further ought to be done, the Mushrooms being allowed to come up in their own good time.

PEAT MOSS LITTER.

I have not had much experience with this for Mushroom beds, and may be wrong in my estimate of its usefulness for the purpose. Mushrooms can certainly be obtained from beds composed of this litter and droppings taken up with it, but the crops are thin and no good clusters form. If taken good care of it is apt to heat rather violently at first, and must therefore be well prepared prior to use. Should it, however, become saturated with moisture, this soon taking place when the heap is being prepared in the open air in showery weather, it seems almost impossible to dry it again sufficiently. To counteract this difficulty I once mixed some quite fresh and dry Moss litter with what had been used in stables and allowed to become very wet, at the rate of one part to three of the latter. The dry litter absorbed a considerable portion of the moisture from the old material, and a fairly fresh heat was generated both in the heap and a week later on in the bed. Eventually we obtained a fairly good crop of Mushrooms, but there were no clusters. When extra moist and steamy beds are spawned, small lumps of spawn are simply thrown away. The bricks ought to be broken into not more than six squares, and if surrounded by a little old and dry Mushroom bed manure, there is then less danger of their being destroyed.

PREPARING FOR VEGETABLE MARROWS.

It may appear somewhat premature to advise upon the preparation of beds for Vegetable Marrows, but it is not so. In the more southern districts especially there is little or no real need to prepare beds especially for the purpose, plants grown in ordinary well-manured garden soil producing abundance of fruit. In colder districts the case is very different, a certain amount of bottom-heat at the outset and raised beds being necessary to grow them well. Those, however, in warm localities who may have plenty of spare space or a large frame-ground outside of garden walls may also, with advantage, prepare a large bed for this crop. Instead of rubbish of a perishable nature generally being thrown into one large heap to rot down quickly, or it may be got rid of in some other manner, the wiser plan is to wheel or cart all together near where the Marrow bed is to be formed. The rubbishy portion of leaves, sweepings, trimmings of walks and shrubs, kitchen garden rubbish, and anything else of a fairly perishable character, all being gradually collected into a large, flat, and un-

even heap, will be all ready for throwing up into a big conical mass next spring. In all probability the latter proceeding will cause a certain amount of heat to be generated, and early in May it should again be turned, this time, however, being formed into a square flat-topped bed about 3 feet or rather more deep. The plants will require the benefit of small heaps of soil and hand-lights or some other protection at the outset, but, thanks to the little warmth underneath, will not be long before they cover the bed, an early and abundant crop of Marrows being obtained without much further trouble. Nor is this the only advantage claimed for the system of culture. After the Marrows are destroyed by frost attention should at once be turned to the heap of decayed and decaying material of which the bed was formed. This being turned with forks, all sticks and anything of a woody nature burnt, and stones wheeled away, there is left a grand heap of soil suitable alike for lightening heavy soils and also for mulching fruit trees generally. Wherever it is used, either as a mulching or for mixing with the top-spit at planting time, abundance of root fibres are invariably kept near or attracted to the surface. It is also admirably adapted for mulching Asparagus beds, being far better for this purpose than the cold decayed or half decayed manure too often used.

W. I.

Big Tomatoes.—Can any reader of THE GARDEN say what is the highest recorded weight of a Tomato? A friend who grows Tomatoes largely for market had one this autumn that weighed 1½ lbs. This was of the Perfection strain. I do not remember having heard of a Tomato so heavy as this, for in a general way half a pound is considered a very good weight, although it is not uncommon to meet with fruit that are double that size. The house in which this large Tomato grew is 376 feet long, and is planted with late Grapes, Tomatoes, as is much the custom now, being grown until the Vines come into bearing, when, of course, owing to the shade it is impossible to grow any other kind of fruit under them. The Vines are planted on raised borders, but the whole of the soil through the house was deeply stirred and well manured. The Tomatoes were planted in rows about 3 feet apart, and trained up to single stems. In this way they enjoyed a free root run in good ground quite equal to what they would get in open fields. There is perfect convenience for watering, so that when necessary the whole of the soil could be thoroughly moistened. Defoliation was practised, though not to the extent that is frequently done, and I have never seen a finer crop of fruit. In one day upwards of 1000 lbs. were gathered, and the plants are even now ripening off their late fruit. Owing to the failure of so many outdoor crops this year indoor Tomatoes have realised good prices this autumn. When Tomatoes make from 6d. to 8d. per lb. at that time their culture is decidedly profitable.—J. C. B.

Rubbish heaps.—It is surprising at what a rate so-called rubbish accumulates in gardens; but surely rubbish is the wrong name for such valuable matter, which may be used in many ways for various crops to such good account, and made to enrich the soil even better than can be done with ordinary manure, as its effects are more permanent. This being so, every care should be taken of such gatherings, and the way to treat them now is to turn over the lot that is in a fit condition to decompose and get all well mixed up together, after first sprinkling over the mass a dressing of lime, which will sweeten the whole and help materially to render it fit for the roots of plants to feed on when wheeled on and dug into the land. If it is intended to prepare ground for the planting of Asparagus, Seakale, or Cabbages, a few bushels of salt will be a valuable addition to the mixture, as each of those crops likes it, and nothing suits the three better than the *omnivium gatherum* of the rubbish heap, where weeds are thrown and all sorts of vegetable matter are brought together to rot. In preparing for either of the crops referred to, the way is to trench the rubbish heap stuff in, keeping it low down and leaving the top rough for the

frost and weather to act on. In spring all will be in fine order for planting, and those who so make use of their waste material will be surprised at the highly beneficial results that will follow. For Raspberries, bush fruits, and Apples, I have found the rubbish-heap stuff of great value, and would strongly recommend its use for any or all of these before planting, or in case of the last-named it may with great advantage be trenched in about the roots of the trees, or be buried around the stems in a circle 10 feet or so across, but it should always be kept from the surface on account of the seeds of weeds that are in it. Stuff that will not rot quickly, such as hedge trimmings or anything woody, should be burned or charred, and the ashes saved for seed beds or mixed up with the general heap, but if for the first-named use, it is important that they be under cover or kept dry, as otherwise they lose much of their virtue.—S. D.

NOTES OF THE WEEK.

WE see the unfortunate term "landscape-architect" is being used by the American landscape gardeners. The term is very descriptive of the formal, hateful work frequently done by these and others. It might be very well applied to the Crystal Palace in the stony parts and to one or two things in the Central Park.

Pyracanthus Lelandi.—This hardy shrub apparently berries most profusely even in a young state, and quite small plants full of coral-red berries are now very beautiful in Messrs. Williams and Son's nursery. They should be most useful for Christmas decoration.

A large Darlingtonia.—Mr. Burbidge writes that he has a pitcher on this fine Californian plant, now measuring 3 feet 9 inches high. We saw many fine tufts of this plant in its native country, but none of them were quite so high as this. But then they had a very hard fight with the common Rush—our common English—which was matted through them, both enjoying the boggy spots.

Pernettyas as pot plants.—It would be well to use the Pernettya more as a pot plant for the conservatory and greenhouse, as the plants have a distinctness of character that gives a much needed variety. In the conservatory at Syon House there are several large plants placed here and there, and these were potted up when the berries began to colour. They are smothered with the brightly and variously coloured fruits.

The dwarf Cornel (*Cornus canadensis*) is, properly speaking, perhaps a miniature shrub, but of such a dwarf character as to associate well with other peat-loving plants which we grow in our rockeries. All through the summer and autumn months it has flowered without ceasing, and now the bright coral berries and pretty rosy bracts are very beautiful. Coming from Canada, it is, of course, perfectly hardy, loving a rather damp and partially shaded peaty bed. It may be increased freely by division of the roots.

A new Chrysanthemum catalogue.—It is proposed that a new edition of the National Chrysanthemum Society's catalogue be issued as early as convenient in the coming year. This work will be aided materially if catalogues containing novelties for the select lists, with all corrections and additions, be forwarded at once to Mr. Lewis Castle, Hotham House, Merton, Surrey, and to Mr. George Gordon, 1, Stile Villas, Wellesley Road, Gunnersbury.

Cypripedium insigne.—I send you by this post a few blooms of *Cypripedium insigne* which at this season of the year are exceedingly useful, lasting a long time in perfection. The plants from which the flowers were cut have been in bloom since the beginning of October, and are carrying from thirty to fifty flowers. We grow them quite cool.—T. C. CUCKNEY, Edenhall, Lantrathby, Cumberland.

— I enclose a flower of *Cypripedium insigne* for your opinion, as I think that it is much finer than usual. The plant is bearing twenty flowers like the enclosed.—D. DOWDESWELL, Woodstock Park Gardens, Sittingbourne.

*** Very fine form.—Ed.

Eucharis amazonica.—Herewith I beg to hand you a photograph of a group of six pots of *Eucharis*, grown at Edgemoor House, Burnley, the residence of Mr. Edward Keroyd. The plants are in good health, and are generally grown on the shady side of the stove under the foliage of Palms, Ferns and ornamental-

foliated plants. These plants usually flower three times yearly, and the photograph was taken at the commencement of October, 1889. They are now throwing up flower-spikes again. A good heat is maintained in the stove. There appears to be no doubt but that *Eucharis* requires a good heat with an open or porous loam.—W. GOLDBY, Edgemoor Nurseries, Brierfield, Lancs.

*** The photo showed a group of well-grown plants full of flower.—Ed.

The Clyde disaster.—Mr. F. Horsman, Hollybrook, Colchester, hon. sec. to the "Hall and Fraser Fund," writes: "I am pleased to report that the sum reached is £450, including a donation of 20 guineas from Mr. G. N. Stevens, Tulse Hill."

Oncidium tigrinum.—I have sent a flower or two of *Oncidium tigrinum* which I consider is one of the most beautiful and most sweet-scented of the *Oncidiums*. Is not this a good form of it, especially the lip? The plant is carrying a spike with eight blooms and has been in flower quite a month.—WM. CLARK, The Gardens, Eversley, Herne Hill.

*** A good form of a beautiful *Oncidium*, with flowers of a strong Violet-like fragrance.—Ed.

Tasmanian Apples.—Tasmania is coming well to the fore in shipments of Apples; they promise the forthcoming season to be both large in quantity and profitable. This colony is fortunate in being admirably represented here, its agent-general (the Hon. C. N. F. Braddon), fully appreciating the importance of this branch of commerce, is sparing neither pains nor energy to make the efforts of consignors in that island successful.

Vilmorin-Andrieux and Co.—At a banquet recently given to the *employés* of MM. Vilmorin-Andrieux and Co. a most interesting ceremony took place, viz., the presentation of a bronze statue, "David and Goliath," to M. Henry L. de Vilmorin (the head of the firm) on the occasion of his promotion to the grade of *Officier de la Légion d'Honneur*. This *objet d'art* was accompanied by an address signed by 448 *employés* of the firm, congratulating him on the honour recently conferred upon him.

Italian forms of the Christmas Rose.—Amongst the new forms of Christmas Roses we have been more struck with the Italian forms than any others. They seem to have an unusually robust constitution, retaining their large, healthy, dark green leaves until the flowering season. The flowers, too, are large, pure, and borne in greater profusion than in any of the older forms we have been cultivating, excepting *H. angustifolius*. It remains to be seen, of course, whether the plants will retain their robustness under cultivation, and if so, there will be no dearth of Christmas Roses in future.

Pears in Norfolk.—Pears are not a profitable crop here, away from the shelter and warmth of the walls. There are very few kinds that I find constant and good. It may be that the cold sea-fogs we occasionally have and low night temperature check their growth, causing them to spot in early summer. The following seven sorts I can recommend for a cool district as being the most reliable; Autumn Nelis, Jersey Gratioli, Comte de Lamy, Doyenné du Comice, Suffolk Thorn, Beurré Hardy, and Soldat d'Esperen. One would suppose early Pears like Fondante d'Automne, Williams' Bon Chrétien, Beurré d'Amanlis, Beurré Superfin, and Marie Louise might be depended on, but they are never presentable unless the summer has been unusually fine.—WM. ALLAN, Gunton Park.

Crocus Imperati.—In sheltered places south of London this lovely spring-flowering *Crocus* is now in full flower, a striking proof of the unusual mildness of the season. I never recollect having seen it so gay until the beginning of February. It is being largely grown for spring bedding, and its never failing to produce abundance of its lovely flowers would be of itself an ample recommendation apart from its great beauty. *C. Cambessedes*, a very small, but pretty flowered species, keeps on flowering all through the winter months. It has somewhat the aspect and habit of *C. lœvigatus*, commencing to flower about the end of October, and continuing at intervals in open weather until April.

Crocus Korolkowi.—This charming species is generally placed in the spring flowering group, but in the neighbourhood of London it is in full flower

now, and very charming and welcome it is in the open air. It is amongst the hardiest of the garden Crocuses, and when doing well develops wonderful corms, the largest of which will compare favourably with those of a fair-sized *Gladiolus*. It is the only orange *Crocus* found east of the Black Sea, its habitat being about half way between the west Caspian district and the Ala Tau Mountains, in Central Asia, where the charming *C. alaticus* is found. The flowers are produced in great profusion, medium sized, of a bright orange colour, the outer segments being suffused with brown markings. It is a lovely species and should be in every garden.

Bignonia venusta.—This is an old-fashioned climber, introduced as far back as 1816 from Brazil, and a large plant of it is rambling over the rafters in the large conservatory at Syon House, Isleworth. It is seldom seen in these days of novelty-seeking, but there are few climbers of its kind that can make such a vigorous show of leafage and flower as this long-introduced *Bignonia*. The long racemes of flowers hang gracefully down, and they last in fresh condition for a considerable time even when cut for vases, in which their grace and beauty are well set forth. Mr. Wythes values the plant and finds that it does well in a soil composed of good loam, peat, and a fair share of well rotted manure. Of course, it should be planted out and not allowed too free a root-run. A great point is to well ripen the wood; the plant, therefore, should have every ray of sunlight possible. It can be easily increased either by cuttings or layering.

Iris Bakeri.—This bulbous *Iris*, which is nearly allied to if not a variety of *I. reticulata*, and was obtained from Max Leichtlin last summer, is now in flower here in the open border without any protection or shelter. Since the beginning of the month alternate rain and frost have prevailed here, the minimum temperature on several nights having been between 21° and 24°, so the flower is as hardy as any of its class, as well as the earliest. Next in earliness of those which I have is *I. Histrio*; then comes *I. reticulata* var. *cærulea*, both of these beginning to flower three weeks or so before typical *I. reticulata*. I always regret to see a spring flower out before February, as our climate is too inclement for them, but this year the very wet summer started bulbs unusually early. Many flowers of *Crocus Imperati* are already out, and Daffodils are in some instances 6 inches high.—C. WOLLEY DOD, *Edge Hall, Malpas*.

Orchids at Mr. Bull's.—This is not the season to expect a large array of Orchid flowers in a London nursery, but there is an interesting display at Mr. Bull's of several species and varieties. *Cypripedium insigne* and its various forms, of which punctatum violaceum is the prettiest, are in full beauty; also *C. Warneri*, a form of *barbatum*, and a native of India. It is a neat, shapely flower, bright, coloured with vinous crimson, and showing little of the usual green shading common to *Lady's Slippers*. *Odontoglossum Alexandræ*, *Ada aurantiaca*, *Sophranotis grandiflora* and *violacea*, *Oncidium cheiroporum*, *O. cucullatum*, *Phalenopsis nubigenum*, *Forbesi*, *tigrinum*, *Lælia albida*, *Vanda Sanderiana*, and *Lycaste Skinneri alba*, besides other kinds, were also in flower. This is a good list for Christmas in a Chelsea nursery, where fogs are thicker and more sulphureous than in any district of London. Even the buds on *Angræcum sesquipedale* are destroyed by the mists of the past few days.

Horticultural Club.—The usual monthly dinner and conversazione was held at the rooms, Hotel Windsor, on Tuesday evening, the 10th inst., Mr. John Lee in the chair. There were present also Messrs. J. H. Veitch, Philip Crowley, H. J. Pearson, C. E. Pearson, A. J. Pearson, H. Veitch, W. Herbert Fowkes, James Walker, George Bunyard, J. H. Stott. The subject for discussion was insecticides and the best method of applying them. It was opened by Mr. C. E. Pearson, who gave a very interesting account of experiments tried with various insecticides, and afterwards Mr. J. H. Stott exhibited in

operation his very ingenious invention for the distribution of insecticides, which was considered by those present as likely to be extremely useful. Mr. Bunyard stated that Bitter Aloes had been found much stronger and more efficacious for the destruction of aphides than Quassia, and that the Cape Aloes were much stronger than any other; the black fly on Cherries was considered the most difficult of all to deal with, and requires a stronger solution. It was stated by Mr. A. J. Pearson that great care must be exercised in the use of Quassia and Aloes in a vine, as they once had a house of Grapes so tainted with the bitter flavour that they were useless. It was generally admitted that *Stephanotis* was also the worst plant for mealy bug, and that the best, if not the only way of getting rid of it was to wash the plant with methylated spirits applied with a camel's-hair brush. A very interesting discussion took place, and Mr. Lee proposed a vote of thanks to Mr. C. E. Pearson for his valuable paper.

Nicotiana colossea.—M. Godefroy-Lebeuf writes us recommending this beautiful plant for the subtropical garden, and in a recent issue of *Le Jardin*, an interesting history of it appears. The writer mentions that several years ago he sold to Mme. D. de Saint Germain-les-Corbeil some clumps of Brazilian Orchids, and with commendable thoughtfulness, the gardener, Mr. Mason, saved the rubbish from the cleaning of the plants and put it into a propagating pit. Several seedlings came up and *Nicotiana colossea* amongst the number. This was singled out by its vigorous growth and planted out in the open, where it is of annual duration only, but under glass it is perennial. It runs up between 6 feet and 9 feet in height in one season under glass, and has leaves of great length and breadth. No flowers are produced in the open air, but cuttings will root in spring or autumn.

Saxifraga luteo-purpurea.—This natural hybrid between *S. aretioides* and *S. media* is blooming nicely in the open air at the present time (December 15). It seems strange in a genus like this that we have so few known hybrids, and very tantalising, as the hybrids we know are the freest-flowering and the most easily cultivated of the groups to which they belong. The present may be known to some of our readers as *S. Frederici-Augusti*, under which name it was distributed from the Continent. It has, however, nothing to do with that species, which has purple flowers and short, broad, blunt leaves. The present plant forms dense mats of small rosettes, the leaves narrow and pointed, dark green with encrusted margins; the flowers are borne in good sized bunches of a rich primrose-yellow. It is one of the freest of the *aretioides* section, and easily managed on the open rockery in a loose chalky soil.

Orchids at Beckenham.—Amongst lovers of Orchids is Mr. C. E. Brotherston, The Elms, Beckenham, who has a choice collection of various species and varieties, and a few of those in flower now are the delicately beautiful *Lælia albida* carrying over three dozen flowers, *L. acuminata*, *L. anceps*, *Gongora biconensis*, *Odontoglossum maculatum*, the well-known *O. Rossi majus*, and *Sophranotis grandiflora*, all old favorites. Besides these is a good form of *Odontoglossum membranaceum* named *roseum*, a handsome variety, the flowers similar to those of the type, but of a clear beautiful rose colour, delightfully pure, and barred distinctly with brown at the base of the sepals and petals. Also worth mention is *O. maculatum splendens*, a distinct variety, with larger flowers than usually seen, and handsomely coloured with rich brown. Now that Orchids are regarded as plants not impossible to cultivate, nor requiring elaborate treatment, the list of cultivators is steadily increasing, and such kinds as we have mentioned always well repay for care in their culture by a free display of bloom.

Chrysanthemums for cutting.—In a recent article on Chrysanthemums for cutting only, a number of useful varieties for the purpose were given, and these in full freshness and beauty late

in November. On Dec. 10, a number of kinds were still blooming with their wonted freedom at Chiswick, and the names of a few of the finest must be of interest and value to those who want plenty of good bloom through the early winter months. Ralph Brocklebank was still beautiful, also *La Joyeuse*, as free and graceful a flower as one can conceive for cutting; it is utterly informal. *Rubrum perfectum*, *Helianthus*, a single variety, and the same as Gold and Crimson, described on p. 594; *Adonis*, purple and white, very pretty and free; *Orange Beauty*, rich yellow, shaded with brown, and bearing a prodigal display of bloom; *Osiris*, rose and white, the flower delicately tinted with yellow in the centre; *Star of Whyke*, white; *Rosea superba*, *Moonlight*, *M. A. Vilmorin*, rich yellow and chestnut-brown; *Yellow Ethel*, *Nuit d'Automne*, rich crimson-magenta, white in the centre; *Don Quixote*, rose and white, very pretty, and *Angelina*, an incurved variety of average size, were as fresh as many Chrysanthemums are in the height of the season. Such single kinds as Crushed Strawberry and Ellen Terry were covered with flowers, long graceful sprays that delight the artist, who sees in them expression, light and shade, and charming grace not found in the heavy exhibition blooms. It will be easy to cut handfuls of flowers from some of the plants at Chiswick even at Christmas.

Traveller's Joy (*Clematis Vitalba*).—The recent paragraphs in THE GARDEN relating to this native climber remind me of a remarkable specimen here. It is growing out of the side of a dry gravelly bank; the main stem over a foot in circumference, rises about 20 feet high, sways and dangles with the wind, and looks like a large cable with one end suspended and the other slung up to the bank. It then lays hold of an Ash tree about 50 feet high, the whole head of which is covered in the summer with the foliage and flowers, and in winter with the feathery seeds of the *Clematis*. These, by the way, are rather a nuisance, as they are carried about by the wind, and in quarters of the garden that are not annually disturbed come up in abundance, and large numbers have yearly to be destroyed. This *Clematis* must be a very long-lived plant, as during forty years, beyond increase of girth, this example has changed but very little. Perhaps it is the only hardy climber we have that conveys an idea, however little, of the aspect of the tangle of a tropical jungle, where everything is woven and entwined in the embraces of the magnificent and far-reaching climbers embellishing the loftiest trees with beauties not their own.—J. M., *Charmouth, Dorset*.

A "Mentone" house at Chase Lodge.—In the pretty garden at Chase Lodge, Mill Hill, there is, besides the delightful house of Chrysanthemums, not 8 yards, as given on p. 522, but over 80 yards, or about 300 feet long, a winding grove of greenhouse plants, which for the most part are planted out in the borders. This grove is called the Mentone house, and is about 200 feet long and 16 feet high. There are large rambling specimens of *Abutilons* running to the roof of the house and full of bloom, especially the pure white *Boule de Neige*, *Acacia dealbata*, large plants of *Grevillea robusta*, each with a stem thicker than a young sapling, *Cestrum* (*Habrothamnus*) *aurantiacum*, tall *Pelargoniums*, *Camellias*, *Justicia speciosa*, and the *Loquat*, a handsome warm house plant when it makes a good growth, as at Chase Lodge. The *Acacia dealbata* spreads over a wide space, covering it with a dense canopy of foliage, now enriched with masses of the lovely yellow flowers, as light and graceful as the sprays of Chrysanthemums hard by. At the edge of the narrow borders is *Farfugium grande*, and on one side Ferns and creeping plants. This house, planted as naturally as it is possible in a confined area, makes a cosy retreat in winter and a shady nook in summer, and there is always something in flower, while the Vines planted here and there give good crops of Grapes. The natural bank of flowers and Ferns on one side adds to the beauty and naturalness of the arrangement.

FLOWER GARDEN.

THE PINK JAPAN ANEMONE IN THE GARDEN AT MIREHOUSE, KESWICK.

EVERY garden lover knows and has the fine white Japan Anemone. We think its very popularity tends to drive out the older forms. On a pleasant autumn day in the kitchen garden flower borders at Mirehouse, near Keswick, we were pleased to see the fine effect of bold and picturesque masses of the old pink form. It is a precious plant, as well worthy of a place as the white form, and has all the

places, the Traveller's Joy is just the plant, and it is one of the attractions of our hardy fernery; but so fast did it ramble, that we had to cut it in, as it began to smother everything underneath. I should think it would do well to graft, at a height, some of the Clematises, such as Jackmani, on it. Clematis montana is also fine for climbing up trees, as it is a very fast grower, and one of the first to flower in spring.—S. D.

WINTER AND SPRING DECORATION OF FLOWER BEDS.

THE frost and bad weather we have experienced of late have made a clean sweep of flowers in beds and borders, which only a very short time ago looked quite gay, as besides numbers of Chrysan-

When in this state they are highly ornamental, but, unfortunately, the birds will not let us have them long, unless the bushes bearing them are protected by netting.

What adds so much to the usefulness of Aucubas is the ready way they lend themselves to transplanting, as owing to the quantities of roots they make so close around the stem they may be lifted and moved at almost any time without feeling much check. To make plants of them as telling and bold as possible they should be placed in groups in the borders, giving them the projecting or most prominent parts and conspicuous positions for such as are planted singly, and these should be varieties with large leaves, as being more effective when standing out by themselves. Next to Aucubas, Hollies are perhaps the most desirable, but they do not transplant so readily, and can only be moved safely when they have been shifted annually so as to induce plenty of fibres. The way to make good use of Hollies is to group the green and one variegated kind together by placing the first mentioned in the background and others of silver or gold-leaved in front, when the one shows the other off to the greatest advantage.

The same remarks apply to the Yews, which should be planted in similar fashion; and then the Retinosporas, Thujas, and others of that class are very effective in beds during winter, and form pleasing objects as central figures to group other plants round; and the same may be said of the Golden Yews, which have a fine effect when making their young growth in spring, at which time they are all aglow with rich colour. Of a less stiff form and appearance than any of those mentioned are the Bamboos, which are remarkable for their graceful habit, and, when judiciously placed, they lend a charm to any garden, as their contour is always pleasing and distinct from that of most plants. The hardiest of the whole of the varieties is B. Metake, but for elegance B. falcata is the one to grow. This, however, requires a somewhat warm and sheltered position for the canes to stand without being injured by frost. In places where it does well the rods grow from 20 feet to 30 feet in length, and arch over under the weight of their beautiful foliage, which is as delicate in its colouring as that of the well-known Adiantum cuneatum. Having provided for the winter ornamentation of beds and borders in the matter of suitable shrubs, the next thing is to turn our attention to early spring flowers, and among these there is a wide range to choose from. First, and perhaps most important of all, are the bulbous plants, or those that are tuberous-rooted, and the majority of these may now be purchased cheaply, but they ought to have been got in and planted some time ago, although it is not too late to do this now, and have a fine display when the weather favours their blooming.

Hyacinths and Tulips should be planted about 3 inches below the soil, which ought previously to be well broken up to a good depth, and after the bulbs are in, they should be covered over with leaves or Cocoa-nut fibre to keep out the frosts. In borders, Hyacinths and Tulips look best in patches of three or so, all of one kind together, but in beds they may be arranged in rows of distinct colours, and be edged with Golden Thyme, Cerastium, Primroses, Forget-me-nots, Violas, or any other spring-blooming plants ready to hand, but the less formality in the beds the better they look. Crocuses and Snowdrops may always be used separately around Hyacinths and Tulips with very good effect, and they also are very telling in the foreground of borders, where they should be planted in large clumps here and there.

The Anemones must not be forgotten, as they are most effective and useful for spring work, as not only do they light up a garden, but they are valuable for cutting, their fine many-tinted flowers being very effective. The way Anemones show off to the greatest advantage is in mixed colours, except it be A. fulgens, which may be planted as an edging to the others, or in bold patches in front of the borders. Anemones like a loose



The pink Japan Anemone in the garden at Mirehouse, Keswick.

best qualities of a true hardy perennial. Our engraving is from a photograph kindly sent by Lady Jane Spedding.

The Traveller's Joy (Clematis Vitalba).—Some people appear to think it necessary to have chalk in the soil to get this Clematis to grow; but from what I have seen of it, I am of opinion that it will flourish without a particle of calcareous matter, and it certainly does so here, where plants of it are rambling up and down wild Cherry trees, the slender stems looking like ropes as they droop from branch to branch, which they clothe and ornament with silvery carpels that are very attractive during early autumn and winter. For semi-wild

themums there were many other things in bloom. It is of no use, however, to lament this, and what we have to do is to look round and see how the beauty of such flowers can in a measure be replaced by other plants, and though it is impossible to have the flowers at this dead season, we can enliven our gardens by making good use of those that have bright or ornamental foliage, and now there is a rich variety of these plants to choose from. First and foremost amongst them the Aucubas may be mentioned, the kinds of which have been so increased of late years through raising seedlings as to quite embarrass us with riches in respect to these, as they may be seen with very long broad leaves, both plain and blotched, and, in addition, plentifully-berried plants are now very common.

rich sandy soil that is well drained by being above the ordinary level, and when so favoured they are sure to succeed. S. D.

SOME GOOD BIENNIALS.

THERE are a few good biennials that are of the highest importance and value in the garden, and they are so easily raised in quantity, that even small gardens should have them. The Foxglove is certainly one of the best of these, and even in its typical form it is desirable, whilst still more beautiful is the pure white form, which comes fairly true from seed saved from isolated plants. But even better than these are the fine-coloured and spotted-flowered types with individual blossoms nearly as large as those of a *Gloxinia*. The Foxgloves should be boldly massed in and about the shrubbery or in the wilder parts of the garden and grounds, as it is only where they are grown extensively that we can enjoy their great beauty. They will flourish upon dry and sandy banks where few other flowers would grow. The *Verbascum* are biennials of the greatest merit and of exceeding beauty. The best is *V. phlomoides*, a kind which as yet has not become very popular in gardens. Without a doubt it is the best of the whole genus, and it lasts in flower for several months, for, unlike the Foxglove, in which the flowers open from the bottom of the spike upwards till all have expanded, the flowers upon this Mullein are in clusters upon the spike, and they open in an irregular and protracted manner, and one spike may have flowers upon it for quite three months. The flowers are of a beautiful shade of soft yellow. *V. olympicum* is another fine Mullein, but it can hardly be called biennial, for often it does not flower till the third or fourth year. It is a handsome plant, having immense long woolly leaves which are of a greyish white colour. *V. phlomoides* can be extensively used in large gardens in bold masses in the shrubbery, or in fine groups in the mixed border; but *V. olympicum* requires a special position to fully develop its beauty and great stature. A sunny spot at the foot of a wall suits it admirably, and if it does not flower for two or three years, the huge rosette of leaves is highly ornamental, and it is worth waiting a year or two to enable the plant to gather strength. The flower-spike often reaches a height of 9 feet, branches out, and bears thousands of yellow flowers, which are smaller than those of *V. phlomoides*. *Verbascum phoeniceum* is another very handsome kind and a useful border plant. It is altogether a smaller species, rarely attaining more than 4 feet in height, but the flowers are large and showy and quite distinct in colour from those of any other member of the family. In this respect they are somewhat variable, but the prevailing tint is a kind of violet-blue overlying a yellow ground. Where the Mulleins do not occur in a wild state, it is desirable to scatter seed of and introduce several British species about the wilder parts of the garden, as when once introduced they would probably perpetuate themselves. Of these the best are *V. Thapsus nigrum*, *Blattaria* and *pulverulentum*.

Lamarck's Evening Primrose (*Oenothera Lamarckiana*) is another beautiful biennial which can be easily naturalised, but at the same time it well repays cultivation. In bold masses it has a striking effect. The flower-spikes last for several months. This is only one of an extensive family, but most of the other *Oenotheras* are perennials, and amongst the most valuable hardy plants we possess. *Celsia cretica* is allied to the Mulleins,

and is classed as a biennial. Treated in this way, however, it is rarely satisfactory, as it is liable to get too forward and suffer in winter. It is best treated as an annual and raised very early in the year. It will then come into flower in late summer and continue throughout the autumn and far into the winter, for early frosts do not stop its blooming. Its rich yellow polished buds and yellow flowers are extremely beautiful. Late in November I saw some groups in a border, and they were then flowering freely, and in the same garden they are sometimes potted up, when the main spike being shortened back lateral ones break out. These dwarf, branched plants are very pretty in the conservatory early in the year, as they open their flowers freely. A biennial plant rarely seen in gardens is *Michauxia campanuloides*. In a warm sheltered border where it could attain to its full stature of 8 feet it would have a striking effect, but probably in most places it will not attain to a greater height than from 3 feet to 6 feet. It belongs to the Bellflower family, has Campanula-like flowers, which are borne on branched pyramidal heads, and are white tinged with purple. It sometimes flowers the second and even the third year, but it is best treated as a hardy biennial. Such a distinct and handsome plant ought certainly to be more frequently seen, for it is very rare to see it outside of botanic gardens. *Lunaria biennis* (Honesty), in its purple and white forms, is very pretty during May and early June. It should be grown in masses in the shrubbery borders, simply sowing the seed where it is required and thinning out the plants. It is easily naturalised in the wilder parts of the garden upon warm banks of light soil. In addition to the charm of its sweet flowers, the flat silvery seed-pods which succeed them are highly ornamental and most useful in a cut state in winter mingled with Pampas and other Grasses. All of the subjects enumerated can be had in quantity by sowing seed upon a warm border in June or July, and they will make strong plants to put out in the autumn for flowering the next year. Doubtless, as the value of these fine biennials is more recognised, they will be more extensively grown and boldly used in better ways than by growing single plants in the mixed border. A. H.

Origin of some Tulips.—In the notes accompanying the coloured plate of *T. vitellina* in THE GARDEN, December 7, the doubtful origin of some of the varieties now in cultivation, including the one figured, is referred to. I am able to give some hints about the history of some of these varieties, as they are of Dutch origin. Many of them have been obtained from seed by the famous Tulip grower, Vincent van der Vinne, at Haarlem, whose unrivalled collection was offered for sale on May 13 and 15, 1863. In the catalogue of that sale, the varieties obtained from breeders by M. Van der Vinne before 1853 are marked with an (*). To these varieties belong *T. elegans* (now considered a hybrid between *acuminata* and *suaveolens*), *T. fulgens* (supposed to be a hybrid between *Gesneriana* and *suaveolens*), *T. retroflexa* (noted as a hybrid between *Gesneriana* and *acuminata*), *T. vitellina*, *T. flava*, *T. maculata major*, *T. fulgens variegata*, *T. carinata rubra*, *T. carinata violacea*. There was little demand for these Tulips at the sale, and my firm was the principal buyer; some of the varieties had already been sold before. The supposed origin of some of these Tulips, although nothing positive can be said upon it, may be right, as the species supposed to be the parents—*acuminata*, *suaveolens*, *Gesneriana*—were cultivated long before at Haarlem. As for *T. Gesneriana*, I think it is well to observe that the Tulip now generally sold under this name must not be considered the parent of all the varieties classed as *Gesneriana*.

The dark brilliant red *T. Gesneriana*, one of the finest Tulips for bedding, is an introduced Tulip of which the origin seems to be doubtful, and to which M. Van der Vinne, who introduced it, gave the name of *T. Gesneriana*. As this was the first Tulip of such a fine colour in the collection, it is very likely that it was used for hybridisation by the eminent grower who was its first possessor.—J. H. KRELAGE, *Haarlem*.

NOTES ON HARDY PLANTS.

Aralia (Fatsia) japonica.—At no time, either indoors or out, can this shrub be more beautiful than now in the open; we have had no frost to speak of, the foliage is magnificent, and there is an unusual abundance of blossom. These statements are made in reference to two specimens that have long stood out of doors in the open ground, one for eleven years, and the other about five years. The plant is certainly as hardy as can be after it has become fairly established. There is only one condition of culture that I think can be said to be somewhat special in regard to these plants, and it is that the roots be in stony and well raised soil, so that it is quite impossible for the moisture to lodge. The soil should be light. The leaves of specimens, however well grown in pots, cannot compare for size, texture, and colour with those of plants doing well in the open.

Veratrum nigrum.—I believe this noble plant will yet be largely grown. It is a long time in receiving the recognition that it well deserves, and it cannot surely be known. It is a vastly superior kind to the other varieties with greenish white and green flowers and downy foliage. There can be no mistaking *V. nigrum* with its massive compound panicles of black-brown flowers and golden anthers. The leaves, too, are as bold in size and form as those of the commoner sorts, with the advantage of a smooth and shining green surface. The flowers last for two or three weeks on the plant, and longer when cut. Let me strongly recommend it as a striking object in the borders, but especially for cutting; the bold spikes employed with Grasses are at once unique and beautiful. All the plant wants is a rich deep soil and open situation.

Daffodil growth.—This is doubtless in a more advanced state than usual, and yet I am inclined to believe that the early growth is more apparent than real. Though I am not a large Daffodil grower, I have for years observed that the growth of Daffodils is more visible in the early part of December than a month later, and for some time I was puzzled as to the reason. The cause, however, I think, is very simple and natural, and it is that after there has been considerable frost action on the surface, the soil becomes so expanded as to partly cover up the growth that had been made, and I am inclined to believe that the reason why growth seems more advanced now than usual is partly because there has not as yet been much frost to lift the surface soil. Any person may satisfy himself as to these facts by a little observation from now henceforward, and I have little doubt that the observer will learn that the Daffodils have a less forward appearance in a month hence than to-day. There is another question, however; when the frosts hold off for an unusually long time the Daffodils grow, and, say by the end of December, they might be more above the surface than desirable, when a sudden and keen frost might injure them. As regards the so-called white Ajax section, which I have grown successfully for many years, I have always practised the giving of a good mulching of leaf-mould and loam about the latter end of November, and I believe that this has proved beneficial in protecting the tops and invigorating the roots. This year, through the kindness of several friends, I have been put in possession of a numerous and choice collection of Daffodils, and those which were planted in the months of August and September have grown amazingly, and I purpose applying the same treatment as to the sorts I have long grown.

Anemone blanda.—This winter-flowering gem has come forward at a rapid rate within the past

month, so much so that its buds are ready to burst open with a little sunshine. The cultivation of this *Anemone* is in no way difficult if given a light rich loam with a mixture of leaf-mould; so it has taken care of itself for very many years among various sorts of strong growing things, but the better way of growing this variety is to have it in pots in a mixture of sand, rich loam, and leaf-mould, shaking out the tubers every summer and repotting them not later than the end of August or early September. So treated the tubers push vigorously, and are ready to flower well in a cold frame in midwinter, where the flowers are finer, and owing to the protection of glass they remain in beauty for a very long period. If I did not wish to have the flowers in midwinter in a cold frame I would still pot the tubers early; they might be plunged in any convenient corner and transferred into the most desirable positions about the end of the year, when the beds and other favourite spots are most at liberty.

Iris reticulata.—In the open garden this bulbous, and perhaps the most satisfactory *Iris* of its section, is in a very forward state. From many years' experience of it I know, fortunately, that it may be left entirely alone, and that it is capable of making a pleasing show under almost the worst conditions of weather. Here again, however, we have a case where much improved results are to be had by the assistance of a cold frame, or a greenhouse so slightly warmed as to merely exclude frost. In a cool greenhouse I have just seen a batch showing colour, and my friend expects to have a show of these sweet flowers for Christmas Day, which from present appearances I should think he will have. Considering how easily this bulb can be managed and the time at which its richly coloured and highly perfumed flowers may be had, it seems to me that flower-lovers have been very slow in appropriating it. One thing, however, I am sure of, and that is when it is once known it is not likely to soon be put aside.

Autumnal tints of herbaceous plants.—I read "American Notes" (pp. 525-6) with great interest. I could not, however, help having my doubts as to what was said about the orange and scarlet colour of *Lysimachia clethroides*. Of course, I do not deny that the plant may do all that is claimed for it, but we might just as well keep in mind that the results described came about not merely because the plant happened to be this particular plant, but they happened in the American climate, and, as we know, climate is nearly everything in such matters. I have grown this plant many years, and I never saw any colour of leaf to attract notice. Still, others might have seen coloured foliage—say on the limestone. As a matter of fact, climate and local conditions are as conducive to autumnal tints as the plants themselves. With me there is hardly anything better than the *Aquilegias*, *Thalictrums*, and *Euphorbias*. The American dwarf *Phloxes* when grown well exposed are effective, but I should scarcely class these among herbaceous plants, and even at their best in this country these do not nearly approach for autumnal leaf colour those to be seen in their wild homes. For high colour the *Euphorbias* rank first with me, and yet they are not so useful as some of the *Aquilegias* and *Potentillas* that (owing to their form) are so well adapted for indoor use.

Hardy Primulas.—In some collections these die off rapidly at this season, and especially if the weather happens to be open. In nearly all cases it will be found that the grub of the hard and dingy black weevil is the cause, eating its way along every particle of root and even into the stems or crowns at the surface of the soil. I could never feel sure of even my strongest plants until I adopted the system of repotting in summer. So destructive are these grubs, that, however well the genus *Primula* may be otherwise accommodated, the plants are never safe where the pest exists. It is also a curious and interesting fact that it shows a decided preference for plants of the order *Primulaceæ*. I find that *Dodecatheons*, *Tridentals*, *Soldanellas*, *Cortusas*, *Androsaces*, *Cyclamens*, and *Lysimachias* are all troubled with it when left

undisturbed at the roots for some little time, and I believe that the weevil constitutes the chief cause of loss of the *Dodecatheons* of which one hears so much. In the winter the grub makes its way into deeper quarters on the approach of strong frosts, and those who have *Primulas* in pots may then remove them more readily than when active.

Woodville, Kirkstall.

J. WOOD.

Panicum plicatum.—I would like to call attention to this very beautiful Grass, which when fairly developed rivals a Palm in its graceful grandeur. It grows freely in an intermediate temperature, rapidly reaching a height of 5 feet or 6 feet, with large plicate leaves 2 feet to 3 feet long and often over 4 inches in width, which curve over, strongly suggestive of a simple fronded Palm. If kept cut back it throws up numerous shoots, which are very useful for mixing with cut flowers, but if allowed to go on unmolested, it is, I think, still more effective, and in my case has frequently been mistaken for a Palm. It also seems to stand house work well, and does not mind draughts in an entrance hall, even in winter. It produces seeds in abundance, which germinate readily, so that there is no difficulty in increasing it. There are, I think, two varieties—perhaps I have two species. The larger has its leaves quite glabrous, bright green, and sometimes with curious little transverse as well as longitudinal folds and dense panicles of flower. In the other there is a tendency to red both in the leaves and flowers; the former are somewhat hairy and the panicle more lax. The whole plant, too, seems smaller.—GREENWOOD PIM.

Darwin Tulips.—In THE GARDEN of 7th of September last (p. 224), Mr. Burbidge in speaking of these Tulips hopes that they will find their way to one of the Royal Horticultural Society's shows of 1890. It is my intention to exhibit them at one of the meetings of the Royal Horticultural Society if they should be in flower at a suitable time. I must observe, however, that these Tulips lose most of their brilliancy if shown as cut flowers. They ought to be seen in the open field in full sunshine when well expanded, then the brilliancy of their colours is unrivalled. Visitors to the late Paris Exhibition, where these Tulips were planted in six large beds, have had an opportunity of comparing them with *T. Gesneriana* mentioned by Mr. Burbidge. The Darwin Tulips were planted at both the irregular ends of each bed. Those who have seen them in flower will agree with me that among the Darwin Tulips, all of which were superior in form to *T. Gesneriana*, the dark red varieties were much more brilliant than the flowers of that variety. Darwin Tulips were much admired in Paris when in flower, and got a *premier prix avec mention*, and especially in consequence of this show the gold medal was bestowed on us. The prices of these Tulips when compared with those of other novelties are not extravagant. — J. H. KRELAGE, Haarlem.

Yucca elata.—This *Yucca* is peculiar to the dry, desert region west of the Rocky Mountains, situated on both sides of the boundary between the territory of the United States and that of Mexico. Engelman, at the time his classical monograph upon the genus *Yucca* was written, considered *Y. elata* a southern and arborescent form of the stemless *Y. angustifolia* of Northern New Mexico and Colorado (*Y. angustifolia* var. *elata*). He was fortunate enough to see it growing, however, during a journey which we made together to the Santa Rita Mountains, in Southern Arizona, during the autumn of 1880, and became convinced that it had best be considered a distinct species. The Arizona plant may be distinguished from the allied Colorado species by the tall, stout trunk, 10 feet to 12 feet high, with a diameter of 8 inches to 10 inches at the ground, and by its long flowering scape 7 feet to 10 feet high, naked below, and bearing a much-branched panicle often 5 feet long. The perianth is spreading, $3\frac{1}{2}$ inches to 4 inches wide when fully expanded (those of the allied species are more globose), the segments being waxy white and deliciously fragrant. Young plants begin to flower before they form a trunk, but even these are easily

distinguished by the tall, naked scape and by the shape of the flowers. A full panicle of flowers of this *Yucca* is an object of surpassing and surprising beauty. *Yucca elata* was first detected by the botanists of the Mexican Boundary Survey more than thirty years ago, but it is probable that it has not been introduced into cultivation until quite recently. Seeds have now, however, been distributed among several European gardens, through the agency of the Arnold Arboretum.—*Garden and Forest*.

Columbines.—In reply to "J. I. R.," in THE GARDEN, December 7 (p. 519), so far from double Columbines being common or particularly favoured, the very reverse is the case, and no one prefers them to the beautiful and elegant single forms, and especially those long-spurred kinds which are known as species and hybrids. The common doubles are known as garden forms, and although even these when growing on tall stems in irregular clusters look pretty enough at a distance, the flowers are not pleasing individually. It is one of the charms of the *Aquilegia* that, apart from individual merits in the flowers, the plants always have a graceful appearance, so that for ordinary garden purposes, even the double forms, especially the pure white and the deep blue, are grown. None the less, no one who has grown *A. chrysantha*, *cærulea*, *californica*, or the hybrids of these species would for one moment prefer the double forms. I have never yet heard any pronounce other than strong admiration for the forms just named, whilst all the old garden forms, double or single, have attracted comparatively little notice in comparison. The hybrid products of the species named are so wonderfully robust and free-flowering, that strong plants in full bloom far excel all others of the family. My own experience is, that very few double Columbines are grown now. In any case, I seldom see them, and as our lovely spurred forms seed so freely and are so easily raised from seed, it is no matter for surprise that these should be elbowing the double forms out of existence.—A. D.

THE FLOWER SUPPLY.

ALTHOUGH the weather in October was cold and a sharp frost or two took place in that month, the weather since has been unusually mild, and just lately very warm and sunny. The result is that there are quantities of flowers now out in the open, and growers of *Chrysanthemums* under glass are complaining of the slow sale they meet with for their blooms, and seem to be wishing for the destruction of those outdoors so as to create a quicker demand for the others. This may be all very well from their point of view, but the gardeners' interests are quite different, and being able to run and cut from the borders has been a great help, and has enabled many of us to keep greenhouses and conservatories gayer than we otherwise should. To maintain this supply and be more independent of pot plants, we have been lifting a lot of the outdoor *Chrysanthemums*, and taking them up with large balls and planting them in rich light soil on the floors of Peach houses or vineries where we could find room. To keep them from flagging, the plants are frequently watered overhead through a fine rose. Although the flowers are not so large as those from pot plants, they come in very handy and are much later, which adds to their value, and from present appearance they look like lasting on to near Christmas. For this latter season and after, I am of opinion that *Chrysanthemum Burridgeanum* will be very useful, and some two months ago we took up and potted some of these, and they are now looking quite fresh and full of flowers, and appear as if they would go on for the whole of the winter. If so, the best plan will be to sow later than when they are required for border work, and to grow the plants in pots plunged outdoors, keeping the blooms picked off, say, till the end of October, as then they would be kept in full vigour and flower profusely when stood under glass. In borders they are now quite a mass of bloom; and Tea Roses are also gay, and here and there, in sheltered places, *Dahlias* are still unfolding, and we cut a good many

to-day (Nov. 13). The most persistent bloomer and the most useful small white for church work and other similar uses, is Guiding Star, which produces beautifully-formed flowers that have long stems and stand erect. Unfortunately, this variety only forms very spare tubers, that are not large nor fleshy enough to live through the winter unless unusual care is taken to preserve them while dormant. The best way of managing is to grow a few plants in pots, and so keep them for stock for propagating from, and the kind is so good as to deserve extra attention. With the Chrysanthemums over then comes the strain, as it is such a dead time of year that few forced things can be had, and it is only by falling back on such plants as are easily moved by a little heat that a supply can be maintained. Calla æthiopica is one of the readiest, and if some of those that have been well grown outdoors are now put into some warm light houses they will soon begin to show bloom. Spiræa japonica is another easily-managed plant that forces well, but the best way to deal with it is to bury the crowns, after potting, under damp Moss, Cocoa-nut fibre, or half-rotten leaves, as then the hearts are kept in nice condition. As soon as a few shoots can be seen the plants must have light let on them gradually till they can stand full exposure. Lily of the Valley requires similar treatment, but it needs more heat thus early to get the crowns to start freely. There are lots of early-flowering Rhododendrons that may soon be brought on, and these can be bought very cheaply, well set with buds; and the same with the hardy Azalea mollis, of which there is no end of varieties of the most beautiful shades of colour; but, unfortunately, they have no scent, and if perfume is desired, then the Ghent kinds, the flowers of which are as sweet as those of the Honeysuckle, must be obtained.

S. D.

COLOUR IN FLOWERS.

NOTWITHSTANDING all that may be said or felt in favour of quiet contrasts and harmonies—and a good deal may be said in their favour—yet it may well be doubted whether many of our pictures and landscapes might not gain greatly in brilliancy and distinctness could Nature or art be induced to wipe out fully half of our more tame blends and mixtures from both. For just as—artists, please pardon the odoriferous comparison—"too many cooks spoil the broth," so may too many and too tame colours the painting or the landscape. And how many of both are sat upon, marred, ruined through their neutral backgrounds. Neutrals! What has the planter, the painter to do with neutrals of mauve, pale lilacs, and purples of unspeakable dullness? Necessary for backgrounds! What, in presence of illimitable fields of green Grass, boundless lakes, rivers, seas, and a measureless expanse of sky? These encompass our landscapes in all directions, furnishing them often with an excess of background or sober colouring, needing none of our fussy additions of ashen greys, slaty purples, magenta-lilacs to tone them down. Quite the reverse. What with our mania for coniferous plants and evergreen shrubs and trees, most of our landscapes are sat upon with sombre nightmares, almost as dark as night, and as capricious as visions of goblins. What they most need is lighting up, not toning down. Hence, the majority of them would be vastly improved could half of their gloom be cut or planted out with a vigorous stroke of axe or spade or both in close succession.

Landscape gardeners and floral decorators have gone on planting out or whittling down decisive colours, until few or none of them remain in many a garden and landscape. In its natural, perhaps necessary, reaction from the mere scarlet fever of glitter and glare, fashion had led the way along the shady side of art so jealously and persistently as to threaten to sacrifice brilliancy to insipidity.

Many causes besides the caprices of fashion have contributed to bring about this sombre result. Among these variegated foliage and multi-coloured flowers have been the more patent; while variegation was confined to two colours, such as white or green or purple and gold, little injury was done to the colouring of landscape or flower beds or bor-

ders. But with the advent of tricolor many-coloured leaves and flaked, spotted, or multiple-coloured flowers, there was a rapid advance towards mumble-jumble in the furnishing of landscapes and gardens, and for this obvious reason the more colours in any one leaf or flower the less effective its colour in any general combination, such as a garden or landscape or picture.

If this be so, and it is, then our first step towards improvement is the wiping out of insipid multiple-coloured plants and flowers and an immediate hieing back to unicoloured, and as much as may be to primary colours, as red, yellow, blue, and the negation of colour white. If these in a tolerably pure state abound in garden, landscape, or picture, neither can well fail in brilliancy or beauty, for these colours are not only bright in themselves, but through their natural contrasts harmonising and complimentary blendings suggest or virtually produce most or all of the most satisfactory shades of colour. But to do this effectually the primary colours must be tolerably pure in and of themselves. The more mixed the less beautiful and the less potential in the evolution of new and higher beauty.

This has long been felt, though possibly it may not before have been expressed in this way. The strong desire that has recently grown up for self-coloured Dahlias, Carnations, Hollyhocks, Phloxes, and other border flowers, the decline and fall in popularity of tricolor Pelargoniums and other multiple-coloured leaf-plants for furnishing purposes are a few of the signs that reveal the finger-posts of taste pointing towards the primary colours as a way of escape from the mess and muddle of indefinite and indefinable mixtures.

The same tendency is seen in the larger grouping of trees and shrubs, not only of the same genera and species, but of the same variety, in bolder masses of one sort. For example, mixed beds of Roses are giving place to groups of one variety of Rose, such as La France, Duke of Edinburgh, Boule de Neige, and Gloire de Dijon. The hieing back to old species of Dahlias, such as coccinea, or the massing in quantity of such novelties as Glare of the Garden, are all straws carried in the same direction on the current of public opinion that point unmistakably to the fact that the next decisive step forward in landscape gardening and decorative art will probably be in the direction of greater purity and simplicity of colouring, aggregated into bolder and larger contrasting or harmonising masses. By weeding out nondescript, insipid coloured plants and flowers, more room would be made for the survival or introduction of the fittest; while each of the latter might be made, through skilful planting, to exert its full force towards the furnishing and enriching of parks and pleasure grounds, gardens and landscapes.

D. T. F.

Taste in gardens.—"J. I. R." (GARDEN, Dec. 7, p. 519) tells us "some wretched florist" has degraded the Snowdrop with a sort of double-frilled petticoat. I never before heard that the Snowdrop was a florist's flower. "J. I. R." says, "What can be more splendid than a single Tulip?" with which most people agree, but what does he mean by saying, "Yet the florist must give us a double formless object in which all this splendour and glory are lost and replaced by a flat messy lump, &c." I must confess it is news to me that the florist's Tulip is double. I never saw one, and none that I have ever seen figured were double. None of the fine flowers which formed the collection shown two or three years ago at South Kensington by Mr. Barlow were double. I may be wrong, but it seems to me "J. I. R." has not got his story aright. Perhaps the Rev. Mr. Horner, Mr. Barlow, Mr. Douglas, or some other florist would inform us.—H. P. B.

—An unpardonable mistake is made by "J. I. R." in saying that the Privet is never lovely at the best, and that it gives a deadly monotony to gardens. The common Privet, whether in flower or fruit, is one of the prettiest and showiest of hardy shrubs. It may not be so in a town garden,

but that should be no just reason for condemning it wholesale.—A. D. W.

ROSE GARDEN.

T. W. GIRDLESTONE.

ROSE ARCHES.

THE success that has been obtained with the Rose arches portrayed in the accompanying engraving is to be attributed to a great extent to the employment in their formation of a variety of Rose well adapted to the purpose. The number of varieties available for the covering of arches is strictly limited, and the chief cause of failure lies in the constant attempts to make use of utterly unsuitable Roses. The only Roses with which completely satisfactory Rose arches may be made are the old-fashioned climbers, such as the Ayrshires and the Evergreen Roses, of which Splendens and Félicité-Perpétue may be instanced as the best types. In a hot climate, such as that of Portugal or the Azores, no doubt Maréchal Niel and Cloth of Gold might be effectively employed, but in this country these varieties are not hardy enough, and none of the Dijon Teas are at all well adapted. Gloire de Dijon itself, the freest of the family, is otherwise the least desirable of them all, for its flower-stems are far too stiff and rigid, and it sheds its leaves so early that the plant almost always has a lean and bare appearance. Bouquet d'Or, infinitely handsomer in habit and foliage, is not free enough, and these two are the best of the race. It is not improbable that some of the modern climbing varieties of Rosa multiflora may be valuable for this purpose, the red Max Singer, raised by Lacharme, being one of the most free and vigorous; but it is hardly possible that the old-fashioned climbers will be surpassed, except in the matter of perpetual blooming.

The best of all Roses for covering an arch are unquestionably the varieties of Rosa sempervirens, on account of their combined good qualities of hardiness, freedom, vigour, and persistent foliage, and the most beautiful member of the family is Félicité-Perpétue. This peerless Rose makes a most wonderful display with its masses of snowy flowers gleaming against a background of dark glossy foliage, like a dazzling complexion framed in raven tresses. The amount of bloom produced by this Rose, which, by the way, hardly ever has its name spelt correctly, is simply marvellous, the plant being literally smothered with the innumerable trusses, each of which consists of an almost infinite number of blossoms. If a pink-flowered variety as a companion be needed, perhaps Flora is the best of the section. Of the Ayrshires, which flower somewhat earlier than the Evergreens, the best are Splendens, most free and hardy, the white flowers margined with pink, especially in bud; Alice Gray, a very charming white variety, though hardly perhaps so free as Bennett's Seedling, also white; and Ruga, a graceful pink Rose.

Of genuine red Roses that make a fine

arch there are very few indeed. Long-worth Rambler is bright, very vigorous and free, and perhaps the most generally useful for the purpose; but Reine Olga de Wurtemberg might be made effective, for its vigour is immense, while its brilliant colour and ever-blooming habit are points greatly in its favour.

Among single Roses, *Rosa multiflora* (syn., *polyantha*) makes a splendid arch, growing with unbounded vigour, and early in the summer becoming sheeted with snowy blossom. Its only garden variety with double flowers that has yet proved of value as a climber is Laure Davoust, but this also makes

the neglect into which it has been allowed to fall; this is The Garland (or Wells' White), a Rose of very distinct character, producing myriads of semi-double white flowers, and altogether a most graceful variety in habit, foliage, and inflorescence.

A couple of plants of any one of the above varieties of Roses planted on each side of an arch will quickly meet over the top, and form a most beautiful object in the garden. It is desirable that a Rose arch should consist entirely of one variety, although, of course, it is not material how many plants of the variety are employed; but it rarely happens that much time is saved in the end by planting

of the arch should be rounded, without any sudden break of outline either at the spring or at the top of the arch. There should be nothing in the form of an arcade over which to train the Roses, or one of the greatest charms of a Rose arch, namely, its beauty when seen from below, is lost; but each arch should consist of a single rod, upon which a few 6-inch cross-bars may at first be fixed, in case it may be desirable in their early stages to tie out the long shoots a little apart from each other for their better ripening, and even these cross-bars will not long be found necessary.

As for the size of the arches, 12 feet by 10 feet is generally found a convenient width and height for an arch over an ordinary 6-foot path, and it is especially important that the arch in any case should not be too narrow, for these climbing Roses are liable to become bushy at the base, and if planted too near the sides of a narrow path, may become very inconvenient. But with careful consideration of these essential points and the employment of first-rate varieties for the purpose, Rose arches may without the least difficulty be formed, and when well placed in skilfully selected positions may rank among the most beautiful and striking features in the Rose garden.

The following notes were sent by Mrs. A. S. Wakefield relative to the Rose arch here engraved:—

The annexed engraving is taken from an arch composed entirely of the old white clustered Rose. Near to it are three others almost as large, two of them being of the delicate blush pink Ruga Rose. The arches are each quite 12 feet high, 10 feet wide, and in places as much as 4 feet through. They are a great ornament to the charming old-fashioned garden in which they are placed, and it is strange Rose arches are not more frequently used, as nothing can be more lovely when the plants are in flower, and the arches are always a feature even in winter, especially when sufficiently high and spanning a wide walk. Two iron rods braced together at intervals form the arches, and although the arch now figured must be at least thirty or forty years old, others in the garden only four or five years old have a handsome appearance. Besides the Rose arches there are other interesting features in this garden, which must have been laid out originally with great taste, and probably was an early example of the style introduced by the poet Shenstone. It contains some quaint old greenhouses, one with coloured cut glass in which is a fine Black Hamburg Vine certainly more than 100 years old, and which still bears abundant crops. A curiously formed artificial pond, the earth from which has been thrown up into a mound over an ice house, on the top of which are large Elm trees, summer-house and walks, an Ivy-covered Gothic bath-house, a fine Plane, and a magnificent Cedar are also picturesque objects.

Dressing of Rose blooms.—The National Rose Society has done well to check a pernicious practice. The dressing of Rose blooms is on the increase, but the proposition adopted at their annual meeting, reported on p. 546, will stop the tricks and arts of exhibitors. It was stated that at one of the southern exhibitions it was difficult to tell whether the flowers belonged to the *Chrysanthemum* or some other "low" flower, and that foreign petals were inserted in



Rose arch in the garden at Belmont, Uxbridge. Engraved for THE GARDEN from a photograph sent by Mrs. A. S. Wakefield.

an admirable arch Rose, festooning its every support with huge trusses of very full and pretty pink flowers.

Rosa moschata (syn., *Brunonis*) is more effective when grown over an arch than in almost any other position, although it can hardly be misplaced, provided only that it has sufficient space; and of its garden varieties, all are pleasing, and, but for the fact of not being absolutely hardy, make a pretty arch—Rivers' Musk being perhaps the best.

There is one other Rose which is difficult to class exactly, but which in no way deserves

more than two plants, one at the foot of each upright.

The most important points to consider in making Rose arches are their position in the garden, and where there are several of them near together, their position in regard to each other, the due proportion of height to width and of both to convenience, and the form as well as the material of the framework of the arch itself.

To begin at the end, the frame of the arch may be best made of iron gas-piping of about 2 inches or 2½ inches diameter, and the form

the blooms to give them fullness. We may now hope to see Roses shown fairly. But what does the Rev. H. B. Biron, who suggested this excellent addition to the rules, mean by a "low" flower? It would be interesting to have a list of such things.

ROSES IN AMERICA.

THE past season has been very unfavourable for outside plants; the continued deluge of rain has checked growth and covered plants with black spot, and if the imported plants are a fair sample, the Europeans have suffered even more, for more wretched plants I have never seen. The stems were weak and completely ulcerated with mildew.

Indoor Roses have been little better; the air was saturated with moisture for months, and hot, although the sun was seldom seen. In some instances Teas, although in appearance healthy, would suddenly put on an unhealthy look and drop all the leaves. In some cases the young growth entirely damped away, and if not, the young shoots were spotted as if sprinkled with acid. That crop was lost, and if the plants were not previously in good condition they might as well be thrown away. This occurred in places celebrated for Rose growing, and where plants and flowers had been of the best quality last season.

The same kind of weather was fatal to ripening wood on hybrids for early flowering, and although generally covered with sashes they continued growing up to November. The result was an almost general failure with early-flowering plants. In one case 3000 plants of *Magna Charta*, grown for blooming early in December, went blind and in other cases partially so, the growth being weak and short, with deformed flowers. American Beauty has been in some cases wonderfully fine; it is a grand large Rose, and among the most fragrant grown, whatever its real name may be.

The best in the market, and probably the best ever produced, are grown by a neighbour of mine, planted on benches in very light houses. He has four houses of this variety all heated by steam. The soil used is almost pure sand with abundance of decayed cow manure and ground bones. This proves that some varieties of Rose can be grown to perfection in a light soil, although it was stated when this variety was distributed that nothing but a stiff soil would grow it well.

Why do the European nurserymen continue to graft and bud Roses? One plant of any variety on its own roots is worth ten worked on any variety of stock, and no one here will buy worked plants if they can get others. I was of the same opinion in England; there the winters occasionally killed the tops, and here the top gets killed in winter and the stock in summer. The stock will not stand the dry hot summer or the drying required to ripen wood for early flowering. JAS. TAPLIN.

Maywood, New Jersey, U.S.A.

Government gardens as seed shops.—I wonder what the nurserymen and seedsmen would say in England if Government gardens, such as Kew, Dublin, or Cambridge and others, were to open a big seed shop and plant nursery, and sell at prices so low that nurserymen could not possibly afford to sell at? Such is the state of affairs in India. I think now-a-days seeds at any rate ought to be struck out of the catalogue of things for sale from Government gardens in India. The Agri-Horticultural Society of Calcutta is simply a big seed concern. The Saharanpur gardens also do a large trade. This is really robbing the many established seedsmen in India of their legitimate trade. Years ago it was a boon to many to have seed from such places, being about the only way to get them except from England direct; but now-a-days one sees in almost every newspaper firms of good repute advertising seeds from the various head seedsmen in Europe. I imagine superintendents of Government gardens generally have enough to do without going into a seed and general nursery business—at least they ought to have. This is the means employed to bring up a revenue from the gardens; the

bigger the revenue, the more the superintendent is thought of. The means employed would not be allowed in England or any other European country. If a surplus stock of plants accumulates in such Government places, I say give to deserving people who require them, or sell only to nurserymen. Once the public know that plants and seeds cannot be got from Government gardens, then the nurserymen and seedsmen will do better out here. As it is, there is scarcely a chance.—INDIAN.

TREES AND SHRUBS.

THE SIBERIAN SALT TREE.

(*HALIMODENDRON ARGENTEUM*.)

To those in search of a beautiful plant for their maritime garden, and one that is well able to hold its own with the rather unfavourable surroundings to which trees and shrubs on the seacoast are subjected, I can confidently recommend the Siberian Salt Tree as one of the most distinct and valuable. Not only so, but what renders it of still further value is the fact that it is one of the least exacting as to soil of the few shrubs that have been found suitable for seaside planting, and everyone who has had some experience of maritime grounds knows full well that, generally speaking, the soil in such places is rarely of the very best description.

Salt in some form or other would seem to be the only necessity required by this shrub, for it cannot survive long nor wear its usual bright appearance unless such is naturally in the soil, or otherwise artificially administered in the way of an annual or biennial top-dressing. This is, however, a small and inexpensive matter that, for the sake of so ornamental a shrub, will be performed without a grudge. It would not be right for me to infer that the Siberian Salt Tree will not survive without an admixture of salt in the soil where it is planted, for such is not the case, but that it, particularly old plants, are much benefited and resuscitated by it I am fully convinced.

From 5 feet to frequently as much as 8 feet may be considered as the height to which the Salt Tree usually attains, it being bushy in proportion, and well clothed with silky deciduous leaves. The flowers are of a bright rosy-purple and individually large, sweet-scented, and produced in rich abundance on medium-sized plants. June and July are the flowering months of the Salt Tree, but occasionally during favourable seasons the flowers are produced by the middle of May.

Under good cultivation this shrub wears a bright and charming appearance, the foliage being so thickly covered with fine silky hairs as to impart to the whole plant a light, but pleasing silvery appearance, and which tint is, perhaps, most discernible at the time when the foliage has become perfectly developed.

Introduced as it was to this country over a century ago (in 1779), it may seem somewhat strange that the Siberian Salt Tree is such a stranger in our gardens, for unless it be with the seeker out and lover of rare and meritorious hardy shrubs, few others are aware that so distinct and ornamental a plant is offered in at least a few of our nursery lists. It cannot, however, be too prominently brought under notice, for it would be a pity did so valuable a seaside shrub remain longer in partial obscurity.

I know of a by no means favoured spot on the English coast where amongst almost pure sand, and in company with the Aleppo and Cluster Pines, the large-fruited Cypress, stray Austrian and Laricio Pines, and numberless maritime shrubs, the Siberian Salt Tree finds a most congenial home, and withstands without a shadow of harm the ozone-laden blast of the Atlantic. But as a standard, or rather single specimen for some favoured spot on the lawn this shrub is likewise equally valuable, for it is of neat habit, peculiarly pleasing in its silvery-tinted foliage, and as free and beautiful a flowering plant as could well be desired.

That this by no means overpraising note will be the means of further extending the planting of the Salt Tree is to be wished, and anyone who has a good-sized plant in their garden will, I feel sure, substantiate my remarks. A. D. W.

ACANTHOPANAX RICINIFOLIA.

THIS great tree *Aralia* of Northern Japan promises to become one of the most striking and remarkable ornamental trees which can be grown in the climate of the Northern States. It was introduced several years ago into the Arnold Arboretum, where the largest of the two specimens the Arboretum possesses is now 9 feet high, having grown at the rate of about 1 foot a year. Although planted in low ground and in an exposed situation, they have shown no signs of suffering during the most severe winter they have experienced here. Flowers have not appeared yet, but the deeply divided and sharply lobed leaves, fully a foot across and borne on petioles 9 inches or 10 inches long, serve to give an idea of what this tree will look like if it ever reaches in this country the size which it attains in Japan. There is no plant in the collection which presents, even in its young and undeveloped state, an appearance so dissimilar to our native vegetation.

The following popular account of this plant, extracted from Rein's "Industries of Japan," may interest the lovers of rare trees who have not access to the work itself: "This beautiful tree is distinguished by its great, lobed, shiny leaves, its white flower-umbels and black fruit of the size of pepper-corns, resembling, like its flowers, those of the *Aralia* and *Ivy*. Like *Magnolia hypoleuca* and *Æsculus turbinata*, it is scattered in the high mountain forests of Japan from Kiushiu to Yezo, but is most numerous in the north. In Yezo, trunks of from 9 feet to 12 feet in circumference and 90 feet in height may be seen. I often found them in Hondo quite as high, but generally not so thick. In high forests the trunks are often somewhat bent, and do not branch until they are 60 feet high. Their dark, thick, rugged bark makes them as noticeable as their beautiful foliage. The white wood shades often into brown, and is moderately light, rough-fibred, and more or less porous. Cross cut, it shows year-rings, but no pith rays. The pores are of two kinds; one sort microscopic and scattered about in the thick summer-wood; the other apparent to the naked eye, and denoting the spring girdles. According to Böhmer, the Ainos make their canoes out of the large trunks from 18 feet to 27 feet long." *Acanthopanax ricinifolia* is sometimes found in gardens under the name of *Aralia Maximowiczii*.—*Garden and Forest*.

A dwarf Japanese Hemlock.—Among the plants introduced into this country from Japan by Mr. Thomas Hogg is a dwarf, compact, pyramidal variety of the Japanese Hemlock (*Tsuga Sieboldii*), which does not seem to be much known yet beyond the borders of the Flushing Nursery. It is an attractive and interesting plant, nevertheless, well suited to occupy a place in a small garden, and well worth cultivating in any collection of Conifers.

A fine Conifer.—The owner of this place (Mr. G. R. G. Carlyon), who is a regular subscriber to your valuable paper *THE GARDEN*, has requested me to ask your assistance in naming the enclosed Cypress, a beautiful specimen of which is growing in a neighbouring garden. The tree itself has a spreading habit; the side branches grow horizontally and their extreme diameter from tip to tip is almost equal to its height, and yet the tree is fairly pyramidal in outline. I believe the tree from which the enclosed specimen was taken is quite distinct in appearance from *C. macrocarpa* or *Lambertiana*, and indeed from any other Cypress with which I am acquainted. Mr. Carlyon is very desirous of ascertaining the name of this Cypress if possible, as he would be glad to purchase a few plants of this variety. Would you also kindly say whether the Cypress readily propagates from cuttings? and if so, when is the best time to strike them? A

reply in your paper at your convenience would greatly oblige.—VIRIDIS, *Tregrehan, Cornwall*.

* * The name of your Conifer is *Cupressus Knightiana* (Perry). In Veitch's "Manual of the Coniferae," *C. Knightiana* is said to be the hardiest of the Mexican Cypresses, and the only one from that country available for planting in England. It requires a sheltered situation. It was introduced in 1840 and has become quite rare.—ED.

STOVE AND GREENHOUSE.

DIPTERACANTHUS HERBSTI.

THIS is a plant which has, I believe, been classed with *Eranthemum* or some allied genus. It is a useful plant for blooming all through the winter, and as such I wish here to bring it to the notice of my readers. This plant is worthy of being increased and universally distributed, and there should not be a garden, in this country at least, with a stove in which it should not be found, because just now the plant or plants would be laden with beautiful flowers, and they will continue to produce them for two or three months. It is now about thirty years ago since this plant first flowered at Kew, and I believe it was named after Mr. Herbst, from the supposition that it had been sent by him from Brazil; but if I do not make a mistake, I have heard him assert that the plant was not sent home by him, neither had he ever seen it in Brazil, so that the seeds of some other contributor had been mixed up with those of Mr. Herbst. Curiously enough, no other collector has ever gathered seeds of this plant, and so its native country remains unknown. Why is it that the plants belonging to this Order (*Acanthaceae*) have been so much neglected? They have very showy flowers, which are produced in great abundance, and very many of them open their gay blossoms during the duldest time of the year, *i.e.*, late autumn, winter, and early spring. They may be grown into good sized plants in a couple of years, and indeed there are very few of them that are worth retaining longer. Cuttings will flower the first year. The plants should be cut back after flowering. Before the eyes begin to break, the old soil should be shaken away, the plants repotted, and grown on for the second year. These two-year-old plants, if properly managed, will become handsome specimens and bloom profusely. The soil in which they do best should consist of about equal parts of peat, leaf-mould, loam, and some thoroughly decomposed manure, and when the plants have become well rooted, an application of weak liquid manure once a week will be found highly beneficial.

D. HERBSTI, like the whole of this tribe, has opposite leaves, which are deep green, with a feathery streak of white on each side of the mid-rib. The plant is of shrubby habit, and on the upper part of the stems the flowers are produced in quantities from the base of the leaves. It continues to bloom for some two or three months. I suppose the reason of this and many others of the Order having lost favour is because the blooms are not available for cutting, but this is of little consequence, as when in flower they give a fine display in the plant house through the winter. The flowers are produced in about fives from the axils of the leaves and are sessile, the calyx being of a deep reddish purple. The tube is very slender, erect, and some 2 inches long, when it suddenly enlarges, becoming abruptly bent, forming a stout tube 1 inch long, and which, with the slender tube, is of a soft rosy purple hue, the

limb in front being composed of five recurved lobes, which are pure white. G.

THE WARM GREENHOUSE IN WINTER.

IN addition to the indispensable *Pelargoniums* R. V. Raspail and Guillion Mangilli, I have found the following single zonals, *viz.*, *Lelia*, *Constance*, Colonel Seeley, *Herminius*, *Mme. Colson*, W. H. Williams, and *Queen of the Belgians* very useful all through the dull months, and they are just now giving us some fine trusses of flower. These are all spring struck plants, grown on in cool pits through the summer months and transferred to a warm greenhouse in September, where with a minimum temperature of 50° they come quickly into flower and continue in bloom for some three or four months. It requires a little judgment during the hottest of the summer weather to give these plants plenty of light and air to ensure a firm, sturdy growth and at the same time avoid a very burning sun, as this means incessant watering and the impoverishment of the soil by the time the plants are required to be at their best. *Sparmannia africana* and *Eupatorium riparium* are flowering with the *Pelargoniums*, and form a pleasing contrast to the bright colours of the latter as well as furnish useful material for vases, wreaths, &c. A few dozen *Libonia penrhosiensis* are flowering freely on a shelf; this variety is considerably better than *floribunda* both in habit, leaf, and flower, and from its pendent habit, and bright-coloured flowers is a useful plant for the edges of large vases, jardinières, &c. There is no brighter nor more pleasing plant at this season than the *Bouvardia*, and the warm greenhouse would hardly be complete without a batch of this favourite flower. I did not altogether like the look of our plants early in the autumn, but the removal of a portion of the top soil and a top-dressing of good friable loam, to which a little liquid manure had been added, has done wonders for them, and they are now a mass of flower. A few dozen *Cyclamens* are just coming into bloom and will be welcomed for more than one purpose, for it is a charming flower and one that is steadily increasing in favour. A few plants of *Epiphyllum* raised at intervals break the line of the *Cyclamens* and form a very pleasing contrast to the white varieties of the latter flower. I wonder the *Epiphyllum* does not find a place in every garden, as it is of easy culture, and there are few even among the more costly flowers that are more bright and beautiful during the dull months than this old-fashioned succulent. Another old favourite that is easily grown and that makes a nice vase plant, with a long blooming season, is *Cypripedium* *insigne*, and a batch in 8½-inch pots is now flowering freely. There are few things that give less trouble than this old Lady's Slipper, and although many of the new varieties are doubtless far more beautiful, I think a well-flowered plant of *C. insigne* with say a dozen large, well-developed blooms in an 8½-inch pot is not to be despised. One more flowering plant in the same house that I may notice is *Golfussia anisophylla*. The individual blooms are comparatively insignificant, but the plant flowers with great profusion, and a few nice little specimens dotted here and there amongst the brighter colours have a very pleasing effect. The winter-flowering *Begonias* are also at home amongst the things already enumerated; three very free-flowering varieties are *fuchsioides*, *Digswelliana*, and *Saundersi*. There is, I find, an idea still prevalent amongst amateurs that many of the above-named plants will flower freely through autumn and winter in any ordinary greenhouse, and that it is only necessary to keep out frost to get plenty of bloom; it is as well, therefore, to reiterate the statement that a minimum of 50° is absolutely necessary to keep up a continuous supply of flowers during winter in what I have called the warm greenhouse. E. BURRELL.

Claremont.

The Hawthorn forced.—There are few things more delicious than the perfume of the Hawthorn, and a small bush of it brought into bloom in early spring will fill a good-sized conservatory with grate-

ful fragrance. Although some few make a practice of forcing it, the generality of flower lovers have probably never enjoyed it in this way. It is not too late to pot up a few plants, and if they are put into a temperature of 60°, they will come into bloom in March. Paul's Crimson Thorn may be treated in the same way, and will give equally good results.—J. C. B.

WORK IN PLANT HOUSES.

FORCING HARDY PLANTS.—The usefulness of hardy plants that are forced in winter depends on the way they are treated whilst being brought into bloom. Flowers of this character that have been brought out in heat during the winter months are often comparatively useless through their want of endurance either on the plants or when cut. With few exceptions, such as *Lilac* and *Lily of the Valley*, the hardier the plants are the less able are they to bear a high temperature, which if used, especially during the dark winter months, causes the flowers to come so thin that they will not last. Next to the moderate use of heat, it is important that the plants should be stood as near the roof of the house or pit in which the forcing is carried out as they can be got. Not only does the extra light they get when so placed tend to give substance to the flowers, but the motion in the atmosphere that is constantly going on just under the glass has a similar influence. For most plants of the description in question a night temperature of 50° or 55° will be found better than a higher, and it may be well to remind those who have not had much to do with this kind of work that it is necessary to be guided by the weather as to the amount of heat that is used, as fire-heat is more forcing than solar heat. A temperature of 50° on a hard frosty night has as much effect in bringing the plants on as 55° has when the weather is mild. As much moisture should be used in the atmosphere as necessary to help the growth of the flowers, but no more. Any excess in this direction is sure to be seen in their soft, unsatisfactory condition. On this account the repeated syringing that is sometimes practised should be avoided; once a day for most things is sufficient. In all cases the varieties of the different kinds of plants that are naturally inclined to bloom the earliest when out of doors should be used the first, leaving the later ones until further on.

ABUTILONS.—One of the best properties in *Abutilons* is that the plants keep on flowering. Their distinct character and appearance adapt them for any kind of arrangement where small flowers are wanted. The white variety *Boule de Neige* is still one of the best, and should be grown in every cool stove. This, with the dwarfest of the yellow-coloured sorts, is the most useful. By choosing the most compact growers, and standing the plants out of doors through the summer so as to keep the branches short-jointed, they will now be in a condition to give a maximum amount of bloom without occupying much room. The production of flowers is regulated by the growth the plants continue making; consequently it is necessary to keep up the vigour by manurial stimulants applied either in the form of surface dressings of some well proved fertiliser or of manure water. If the latter is used it should be given once a fortnight. A temperature of 55° in the night will answer for the next two months, after which a few degrees more may be used.

GENISTAS.—These are easily managed, will flower freely in either a small or a large state, and all the flowers if need be may be cut without doing the plants the least injury for use in subsequent years. The plants can also be stood without suffering in dark corners in conservatories or in halls or rooms whilst they are blooming. The bright yellow colour of the flowers is very effective when the preceding summer's growth has been well ripened by a lengthened exposure to the sun out of doors. The plants may now be put in heat. A temperature such as recommended for the *Abutilons* will be sufficient. Syringe freely once a day so as to get the water to the leaves right through the centres of the plants to guard against red spider, to which

Genistas are more subject than some things, and if the plants were at all affected by this troublesome insect during the past summer it is more than likely that some of the eggs are only waiting for the necessary warmth to bring them to life. Inattention to this matter in the winter when little is seen of the insect often causes much trouble in spring before the usual time for its appearance.

ACACIA ARMATA.—This is another old yellow-flowered plant that should be made more use of in winter than one often now sees. It will bear cutting to any extent, and with fair treatment the plants will last for any reasonable length of time, even if their heads are confined within limits that most of the Acacias would not bear. Every bit of wood that was made last season and that has attained any strength will bloom, provided it was well matured. To effect this, the plants should have been out of doors during the greater part of the summer, where the sun had full play on them. The condition which this treatment brings about is necessary when the plants are to be forced thus early, otherwise many of the shoots will run to growth instead of flowering. As much warmth as advised for the two preceding plants will suffice for this Acacia. The flowers do not last so long as those of some things; therefore it is better not to start more plants at one time than are necessary to give the supply required.

EUPHORBIA SPLENDENS.—Brilliance of colour and continuity of blooming make up for the comparatively small size in the flowers of this plant, for high-coloured flowers are effective for button-holes and sprays, or for arranging in the small-sized specimen glasses now so much used for table and other decoration. The plant does well for covering a wall where plenty of light can reach it, or trained against the glass at the end of a house or pit where there is enough heat to keep up the necessary growth. Where the plants are grown in pots bush fashion of sufficient size to bloom in quantity, there is the advantage of being able to move them about to any house or pit where the requisite amount of heat is kept up. It will stand a high temperature, and used often to be met with on the end of a Pine stove. Pot specimens that are movable should now be put in a warm stove, where they will keep on blooming almost as freely through the winter as they do in the summer. This Euphorbia does not require very much root room, neither does it so often need repotting as things of quicker and more vigorous growth, but the drainage must be efficient. A little weak manure water is necessary at times whenever the plants are moving freely. It may be propagated at any time of the year. Where there is a deficiency of stock, cuttings can be put in now. Larger pieces of the shoots may be used than would answer with many plants, as the wood will form roots after it has attained a harder condition than most things; consequently there is something gained by using good-sized pieces. If these are put in now, they will make good plants by next autumn. Like some other things with wood of a somewhat succulent nature, it is best to let the base of the cuttings dry up before putting them in after they are severed from the plants; a day or two will suffice for this, during which time they may be laid on a dry surface in the stove. Put them singly into small pots, drained and filled with a mixture of sand and finely sifted loam. Less water should be given than would be required by cuttings of ordinary plants; neither should they be confined under propagating glasses or in a striking frame, or they may rot. In a warm stove temperature roots will soon be formed; later on, when plenty of young fibres are present, move the little plants into 4-inch pots and grow them on in a brisk heat.

FERMENTING MATERIAL.—The practice of plunging stove plants in bottom-heat is now all but discontinued, except for a few kinds, such as some of the bulbous species. Yet no stove is complete without a pit in the centre that will hold a body of tan or leaves sufficiently large to maintain a brisk heat for several months. There is a decided saving in the use of a pit of this description, as its construction costs less than a stage that

is non-perishable, and if wood is employed it very soon rots. In addition to this, as has before been pointed out when the subject has been touched on, the cost of renewing the fermenting matter once a year is more than covered by the saving in heat which is effected by it. A sufficient body of tan will keep up a heat of from 85° to 90° for three months, during which time, as a natural consequence, it helps to raise the temperature of the air within the house by the heat that rises from it. Apart from this, the elements which it gives off are more conducive to healthy growth in the plants than anything that can be done in this direction for them by other means. The present is the best time for renewing the material. Where tan can be had fresh from a tanyard, so that it has not had time to ferment before being obtained, it is the best. In all cases it is advisable to discard the old that has done duty during the past year; it will, as a rule, contain worms that are better got rid of, so that any retention of a portion to mix with the new, as sometimes done, entails more loss than gain. Tread in and raise it enough above the sides of the pit to allow for it settling. Where clean Oak leaves are to be had they are the next best to tan; they will not generate so much heat as tan, but when a sufficient body is got together they will give off enough to help the heating apparatus for a long time. As a means for supplying the bottom-heat required for cutting-striking during the next eight or ten weeks, when the striking frame is usually over-taxed, a bed of this description will be found a great boon. T. B.

ARUM LILIES IN AMERICA.

"J. M." (GARDEN, Nov. 16, p. 455) is correct when he states that it is best to keep these plants in pots. It is worse than waste of time to plant them out of doors. The flowers are most required for winter and early spring decoration. If extra large flowers are required in the spring, a lot may be planted in a house with a temperature of about 50°, in plenty of light, rich soil, and given plenty of liquid manure they will bloom finely, but there is often a green tinge in the flowers. I turn my plants out of doors early in June, and give no water from that time until after potting in September, but this year we had so much rain that the pots had to be turned on their sides to check growth and get the soil dry enough to shake clean away, which is done when potted. All offsets and old leaves are cleared away and the plants repotted in rich soil with good drainage into pots of the same size as before—6 inches to 7 inches. If the ball is too large for the crown to be covered in these sizes, the bottom is entirely cut away and the plant dipped in lime to prevent rotting. If large masses are required for decorating, several roots may be planted in a pot, according to the size required. Some rotten manure, ground bones, or soot should be put over the drainage and the pots should not be filled too full, as after the plants are growing freely a top-dressing of rotten manure is required, and also abundance of water. If allowed to get dry and in a dry atmosphere thrip and green-fly will be troublesome, for which a good fumigating with tobacco is a remedy. After potting the plants are placed in full sun out of doors and watered but little until they begin to grow; they are placed under glass when there is risk of frost. Under this treatment and if placed in a house with a temperature of about 55°, the plants begin to bloom early in November, and continue to do so until June, after which the flowers are of no value. If they were, I would then plant some in a moist place out of doors, and would get perhaps some flowers all summer. At this time (Dec. 1) my plants are in full flower. I recollect in England a lot of plants being required for flower at Christmas; they had been growing all summer and potted very late, and scarcely a flower was open at that time, although grown in a temperature of 70°.

JAMES TAPLIN.

Maywood, New Jersey, U.S.A.

Ruellia Herbsti.—Of stove plants now in bloom especial mention may be made of this fine old plant, whose merits as a winter flower are too

generally overlooked. It forms a quick-growing branching specimen of a somewhat upright habit, clothed with lanceolate leaves, which are on the upper surface dark green and reddish beneath. The flowers, which are borne in large terminal heads, are as much as 3 inches in length, peculiarly curved, and of a rosy purple colour. They are generally much lighter in hue just at the mouth of the flower. Like most of the Acanthads, this *Ruellia* is of easy culture, for cuttings strike root readily, and grow away quickly in any good potting compost. By far the better plan is to propagate them annually, as the old plants are never so satisfactory as young ones, being more liable to run up naked at the base. In common with some other members of the same genus, the *Aphelandras* and *Eranthemums*, this *Ruellia* succeeds better in the coolest end of the stove than it does in a higher temperature. It is also known under the name of *Dipteracanthus Herbsti*, and is said to be a native of Brazil. —T.

GARDEN FLORA.

PLATE 732.

THE CARNATION.

(WITH A COLOURED PLATE OF CARNATION HARMONY.*)

DURING the last few years the Carnation has taken its rightful place as a hardy garden flower. All who love beautiful and delicately perfumed flowers are fascinated with the Carnation, its rich and varied colours always being attractive. Under certain conditions the culture is very easy. A great deal has been written about the way florists treat their Carnations as exhibition flowers or plants, and they have been rather severely taken to task for coddling their plants and dressing the flowers for exhibition. At one time there might have been a good deal of truth in such accusations, and the florists were very much to blame for the position in which they placed themselves. Instead of promoting the culture of their favourite flowers by pointing out the road to success, and showing how easy it was, a mystery was thrown over their whole proceeding, and even gardening itself was believed by many to be a hidden and mysterious art. The mixing of composts, whether the plants were to be grown in pots or planted in the open air, was altogether too complicated for ordinary cultivators to think about. Even Mr. Thomas Hogg, of Paddington Green, whose treatise on the Carnation was published in 1839, did not approve of the nostrums used for Carnations, but in his own mixture recommended "eight or nine loads of manure to five loads of loam or maiden earth." Other cultivators used pails of blood and barrow-loads of sugar bakers' scum in their composts, so that even when a knowledge of the constituent parts of the composts had been obtained, the filthy mixtures were enough to unsettle the mind of the greatest enthusiast. At page 29 of the sixth edition of Hogg's treatise it is stated that—

When the plants begin to spindle or shoot up to bloom, they require to be supported by sticks about 4 feet in length; some of tall growth, as Humphrey's Clarence, Fullbrook's Grenadier, Wood's Ambassador, &c., require sticks 5 feet long. There must have been giants in the earth in

* Drawn for THE GARDEN by H. G. Moon at Gravetye Manor, Sussex, August, 1888. Lithographed and printed by Guillaume Severeys.

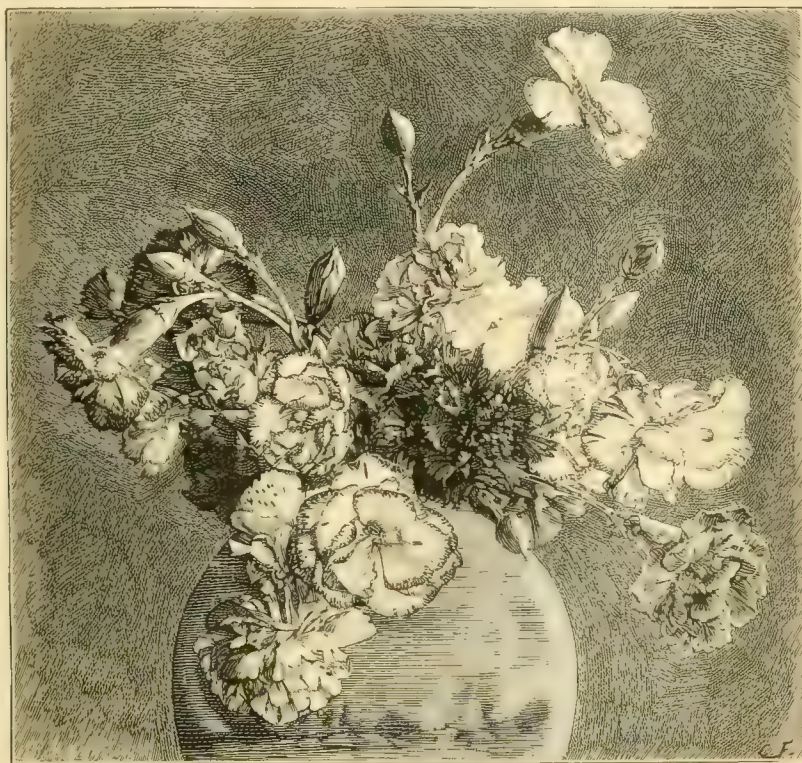


CARNATION HARMONY.

those days, and I must confess that not until I read the above in Hogg's treatise would I have believed in the existence of Carnations needing sticks 5 feet long. Some cultivators would go to the other extreme and rejoice over dwarf varieties 5 inches in height. The only advantage in growing such very dwarf plants would be in the possibility that they might not need sticks. Amongst the thousands of seedlings I have raised here I have had a goodly number with stems a foot high or less, but they are puny-looking things beside the handsome specimens producing stems 2 feet high. A robust Carnation stem 2 feet high, supported by a neat stick, with one large terminal flower and numerous side buds in different stages of development, is a beautiful object. As regards single plants a year old

and cold damp nights in autumn cause the pods to decay sometimes before the seeds ripen; whereas if the plants are placed in an airy greenhouse, they have a higher temperature and a drier atmosphere, and, what is of the utmost importance, the pods are kept dry, and under those conditions the seeds never fail to ripen.

A selection of the varieties it is intended to save seeds from should be placed under glass as soon as the flowers open, and this, of course, would necessitate growing them in pots. The seeds ripen in October, and should be gathered, dried, and kept in a dry place until it is time to sow them, about the end of March or the first week in April. A hotbed is the best place for them, as the seeds, if sown in fine soil in pots or pans, will vegetate in a week.



Seedling Carnations in vase.

from seeds, we have had them with from 200 to 300 flowers on one specimen. The height of the stems may become a matter for discussion, but I fancy most tasteful persons will decide for a medium height of 2 feet.

I have always strongly urged upon cultivators of the Carnation the importance of raising seedlings from well-marked flowers. Most good growers do this, but those who have not attempted to do so cannot be aware of the wealth of enjoyment to be derived from watching the development of the flowers of seedlings obtained from good crosses. When the flowers are very double it is not so easy to obtain seeds, and, as a rule, it is best to flower the plants intended to produce seeds under glass, for even if the blooms might set quite as well out-of-doors, the wet days

The plants should be pricked out as soon as the seed leaves have grown to their full size, for if this is not done the tiny seedlings damp off very rapidly, especially if it is necessary to give them any water. By the end of May or early in June they will be nice, strong plants, and should be put out 18 inches apart on a bed of good, deep, rich soil. They will thus make strong flowering plants by the end of the season, and some of them will produce 200 flowers or more. The varieties worth propagating should be marked with a numbered label, the number entered in a book, with a full description of the flower attached to it.

The variety figured has a little history of its own; it is No. 44 and was raised in 1883 from Carnation William Skirving (Gorton), crossed probably with C. Sarah Payne

(Ward). We are seldom sure of the pollen bearer, as more than one variety is used as a pollen parent. It is marked "pink and purple bizarre, flowers fully double, good form, pod does not split, petals well formed, pure white delicately striped with purple and pale pink." I was much pleased with it and exhibited it under the name of Felicity, but none of the florists were taken with it. I showed it again the following season, when it met with a poor reception, and I decided to throw it away, but sent some plants to Gravetye Manor to compete for the prizes offered by the editor of THE GARDEN. It was awarded first prize in its section. The judges thought it was a most lovely Carnation, and the name has been altered to Harmony. Mr. Simonite, the cutler florist of Sheffield, who has grown it well within the smoke line of that sooty town, thinks it a very fine variety. All the numbered varieties must be layered, and we have had often as many as thirty layers on one plant. These are all planted or grown in pots under various conditions the following season, so that ample opportunity is given to test them. We grow all our Carnations that are planted out-of-doors without any preparation of the soil. It would be desirable to add fresh maiden loam to it, but this is nearly always wireworm-infested and cannot be used on that account, so that when the plants are put out, either in October or March, a handful of fine sandy soil is placed round the roots of each plant to start them. The soil in which the Hyacinths had been grown the previous season is as often used as any other. If a bed of soil is specially made up for Carnations, it should be trenched 18 inches deep, and have a good dressing of decayed manure worked into it. Heavy soils would be improved by a good dressing of lime or mortar rubbish being added. All classes of Carnations may be grown out-of-doors, but, as a rule, the selfs are harder than the flakes and bizarres, and seedlings are much more vigorous than propagated varieties. The annexed illustration will give a good idea of the usefulness of Carnations when loosely arranged in a vase.

J. DOUGLAS.

ARRANGING CUT FLOWERS.

At the Ipswich Chrysanthemum show prizes were offered for the best arranged basket or vase of Chrysanthemums for the table, and there was a fair number of exhibits. It was noticeable that in every arrangement large show blooms were entirely absent, and this tends to show how the undue development of size in the Chrysanthemum may destroy all its interest and render it valueless to ladies for house adornment.

My object in drawing attention to these arrangements of one flower is to praise that greatest of all merits, their simplicity. Not only upon the exhibition table, but in the house these simple arrangements of one or two kinds of flowers are the most effective, most pleasing, last the longest and give the least trouble. At the summer shows prizes are often offered for the best arranged *epergne* of flowers for table decoration, and although the arrangements may look very well when done, the labour attached to them is very great. Offering prizes for such floral arrangements is only fostering a false taste, as they give no idea of the true beauty of flowers boldly used in a cut state, and they cannot be accepted as examples of how flowers are to

be arranged in the house, as there is often much unfitness of association in the flowers used, their lasting properties in a cut state varying so considerably as to necessitate much touching up of the arrangement, extracting withered and adding fresh flowers to keep it in anything like a presentable condition. Much has been written about the added charms of some flowers in association with others, and quite recently in the pages of *THE GARDEN* a writer advised using the long sprays of *Thysanacanthus rutilans* with *Chrysanthemums* in a cut state to relieve their monotony and give variety of form, &c. Surely *Chrysanthemums* with their rich clusters of flowers and foliage can derive no additional charm from association with the subject mentioned, which must first be grown in a warm house and then when cut would probably last about as many hours as *Chrysanthemums* would days.

Large simple glasses or bowls are necessary in order to arrange flowers in a bold and natural way. We have also other mechanical inventions wherein to arrange flowers, so that, as we are told, each leaf and blossom can show its individuality. The individuality of fine flowers, however, can only be fully enjoyed by seeing them in simple arrangements much as they grow in the open air. The superiority of these has often been shown by engravings in *THE GARDEN*. In the garden during the greater part of the year there should be no scarcity of good flowers, and when we can cut great bunches of *Roses*, *Carnations*, *Irises*, or any fine hardy flower, there can be no reason for fussy arrangements. All that we want is glasses that will hold the flowers and display them to the best advantage, whilst the work of arranging flowers is very much reduced, for so long as the flowers are fresh we retain them, and when they fade, as they will all do about the same time, it simply remains to throw them away, cleanse the receptacles, and refill them. A. H.

CHRYSANTHEMUMS.

E. MOLYNEUX.

OUTDOOR CHRYSANTHEMUMS AND THEIR TREATMENT.

CHRYSANTHEMUMS coming under the heading named above do not meet with so much encouragement as their merits deserve. The reason may be that during the last few years we have had such exceptionally sharp frosts, which have come at a date which not only injured the plants growing in the borders, but entirely crippled many collections of plants growing in pots. Those in pots are sure to suffer to a greater extent than those which are termed outdoor *Chrysanthemums*, as the growth is more sappy, and at the time when early frosts, have done so much damage the buds of those in pots are so much more advanced as to be liable to serious injury. Those persons who do not have a greenhouse may cultivate a number of plants in the borders in front of shrubberies or at the back of the herbaceous borders, and if favoured by open weather will secure a nice show of bloom in November. The main point in the cultivation is to select varieties most suitable, and the best position which can be obtained is a border facing south, backed up at the north and east sides with shrubs or other protection. If the plants are carefully cultivated during the summer season of growth, it will not be time ill-spent to provide some means of protection in the case of early or sudden frosts.

Reflexed kinds, by reason of the imbrication of their florets, are best for outdoor cultivation, as they do not retain the moisture. Reflexed varieties of the Japanese section, of course, will come under the same heading, avoiding those with long, uneven florets or of a close-fitting nature, such as *Henri Jacotot* or *Dr. Macary*, for instance, in that section. *Julie*

Lagravère is a variety about which a diversity of opinion exists as to which section it properly belongs, some regarding it as a pompon, while others say it rightly belongs to the reflexed section. In this latter I quite agree. Unfortunately, the blooms are too small to admit of its receiving extended cultivation other than as a decorative plant either for inside use or for the borders. In regard to the colour of its blooms, which may be termed dark crimson-red, it stands quite alone. The flowers individually are neatly formed and are produced in great profusion. The habit is dwarf, a decided point in its favour for either method of cultivation, and given at all reasonable treatment it carries good foliage—an essential point when grown for conservatory use. It is now thirty years since this charming variety was introduced, and by reason of its qualities—dwarf habit, freedom of flowering, and rich colouring—deserves good culture. The yellow variety, *Soleil d'Or*, belongs to a class of which we have too few, a bright golden yellow with a faint shade of purple in it. *Soleil d'Or* is first-rate for borders, flowering freely, and standing uninjured out of doors a considerable length of time, with a fair amount of care, when outdoor flowers are but scarce. Only in Mr. Burbidge's book can I find this variety named. It appears not to be known or appreciated by catalogue compilers. The fault of this is owing, I presume, to the public not knowing sufficiently well the value of the variety. It does not appear in the excellent list compiled by the National *Chrysanthemum* Catalogue Committee.

CULTIVATION.—Cuttings should be struck early in January; top the shoots twice when the growths are 4 inches long; afterwards they will break into additional growths naturally. The shoots will not need thinning, neither will the buds need removing. Allowing them to flower freely is the manner in which *Chrysanthemums* out-of-doors look the best, and certainly the safest way to grow them, as the blooms will be smaller by reason of the plants not being disbudded, and the more likely to withstand damp or frost because they are harder in the petal on account of the less substance contained in them. As soon in May as it is safe, plant them in the borders so that they may have a long season of growth. If the plants have been properly hardened and grown in frames to keep them dwarf, they may easily go out at the time stated. If the weather is dry at the time, see that the plants do not suffer for want of water. A mulching of short manure over the roots will be of much service in keeping the roots cool and preserving good foliage. This mulching will not be needed if the summer be wet or cold, but in the event of a hot, dry season the benefit from such assistance will be plainly visible in the appearance of the plants. Support to the branches will be needed in some manner, as the shoots being brittle are liable to be broken off by winds, and when the branches are allowed to fall about in an untidy manner they never present such a neat appearance when tied up as they do when the shoots have been kept within bounds from the starting point of their growth. One stake to each plant is enough if the shoots all around be tied loosely to this stake in the centre. Do not tie the whole mass of growths together by encircling the plant with a single tie, giving it the appearance of a broom. In addition to the sorts named as being suitable for late outdoor growth, the following may be included: *King of Crimsons*, *Phidias*, *Progne*, *Mrs. Forsyth*, *Peter the Great*, *Bouquet Fait*, *Amy Furze*, *Tendresse*, *Elaine*, *l'Incomparable*, *Mons. Moussillac*, *White Trevenna*, *Rosinante*, *Golden Circle*, *St. Michael*,

Snowdrop, the last five belonging to the pompon class; or any varieties having the characteristics previously described for outdoor cultivation may be tried. Some varieties, however, which may prove quite a success in one locality may entirely fail in another.

NEW VARIETIES.

As many cultivators have not the opportunity of inspecting new sorts as shown, and yet still like to know which are deserving of notice, I have made a few notes upon certain new varieties which I think worthy of a trial—

JAPANESE VARIETIES.

MRS. ALPHEUS HARDY I consider to be the greatest novelty of the year. By what I can learn, only about one person in every twenty has obtained blooms of it this year, owing possibly to a weakened constitution of the plants through over-propagation. Next year I expect to see it shown in good condition, as growers will be able to secure healthy cuttings in good time. From what I have seen of it, the flower bears out all that has been written about it. The petals in a young state incurve thoroughly, are quite pointed, thus giving the flowers a neater appearance. In this state the florets show the short hair-like processes more profusely than they would if the florets reflexed and lost their incurved character. In this latter way this variety will lose something of its charm, which mainly rests upon the hair-like addition to its florets. With age I expect the florets to reflex somewhat. The colour must be described as a dead white, being nothing so pure as *Avalanche* or *Elaine*, for instance. I should strongly advise all who are not in possession of this novelty to buy it, or when exhibition time comes round next year the loss will be keenly felt.

ETOILE DE LYON I look upon as one of the best varieties in cultivation now that its growth is better understood. The washy colour of many of the blooms which have been seen of late conveys no idea of the flowers of this variety. The florets also show quite a different character when they are developed from buds which form about the middle of August, or from that time to the end of the month, as compared with buds set during July; in this latter case they are narrow, quill formed, loose, and betray a coarse appearance. When the lilac-rose coloured blooms are from 7 inches to 9 inches in diameter and about 5 inches deep, the florets flat or strap-shaped, piled one above the other in an imbricated manner right to the centre of the flower, which is quite full, then *Etoile de Lyon* is one of the grandest varieties in cultivation. Until this season it has not been seen in its true character, but now that its requirements are better understood it is certain to meet with much favour at the hands of cultivators for large blooms. The growth is very robust, but not tall, which is a point in its favour and the plant carries abundance of dark green leaves. I have described this variety at considerable length, as I consider justice cannot be done to it by the miserable washed-out flowers which have been too plentiful of late.

ANNIE CLIBRAN may be described as a pink *Lacroix*, being a sport from that well-known variety. It was introduced by the firm the name of which it bears during the year 1880. The character of the flower is so distinct that it is a universal favourite, not only with the grower of large blooms, but with the specimen plant man also. Add to these qualities the fact of its being one of the best "keepers" in cultivation, and the new variety *Annie Clibran* we may look upon as being a decided acquisition to an already extensive list of varieties. Still, for good sorts there is abundance of room. Each floret is heavily striped with a warm glow of pink, rendering the variety peculiar, yet pretty.

L'AUTOMNE belongs to the incurved Japanese type, and may be said to stand quite alone in colour, which is cinnamon or buff.

PRESIDENT HYDE is an American seedling, belonging to the Japanese reflexed type, of medium

size and capital form, deep orange-yellow in colour. For decoration it will be valuable, as colours of that kind are scarce.

WILLIAM ELLIOTT is remarkable for its colour, which is a brilliant plum-violet, quite a step in the right direction. The blooms that have been shown this year are of medium size, the colouring being the most remarkable point in the flower, and the growth is dwarf.

EYNSFORD WHITE is a grand addition, although white varieties are becoming numerous. The flowers are large and solid; the florets semi-drooping, slightly pointed, something in the style of *Avalanche*, but not so much notched as in the case of those of that variety; the growth is of medium height, and carries dark green foliage in abundance.

SWANLEY WHITE is one of last year's new kinds, but as yet it has not been much seen this season. It ranks as one of the best of its class. The florets are narrow and pointed, quite smooth at the tips, which recurve slightly, this in the case of the centre ones (which are erect, with the exception of the tips) giving it a novel, yet charming appearance.

M. E. A. CARRIERE.—This variety has semi-drooping florets, which are long and pointed; the colour is a bluish-white, the flower full in the centre; a promising new kind.

MASSALIA.—This is likely to make an excellent decorative variety in the Japanese section; the shape of the flowers resembles that of the *King of Crimson*s, but larger, while the colour resembles that of *Cullingfordi*.

Two additions have been made to the reflexed section. They are not absolutely new, but owing to not having been seen in good condition, they are not so well known to the general public as their merits deserve.

WILLIAM EARLEY.—The flowers of this are rose-violet in colour, deep and full in the centre, and quite reflexed.

MRS. MAYES has white, shaded magenta flowers, and is a useful addition to a limited class.

ANEMONE VARIETIES.

MRS. JUDGE BENEDICT, as shown by Mr. Owen, is a welcome addition to the large *Anemone* class; it is a full flower, the centre florets bluish, pointed sulphur; the guard florets are short, bluish in colour.

MESSRS. W. AND G. DROVER.—Carmine-purple, with a full disc, the guard florets even and well balanced.

MRS. J. H. TAYLOR.—Rosy lilac, full disc, and good guard florets.

GEORGE HAWKINS.—A sport from *Georges Sand*, the disc deep yellow, the guard florets deep primrose, quite a new colour in this race.

SINGLE VARIETIES.

These are being largely added to annually, and their merits as decorative plants or for cutting are becoming more appreciated. At the present time there is variety enough to suit all tastes.

YELLOW JANE is an acquisition to this section, and is certain to be appreciated; the flower is the exact counterpart of the white form, only rich yellow in colour.

SOUVENIR DE LONDRES is a large flower, rich crimson in colour, the points of the florets recurve, one of the best.

LILY OWEN.—The well-formed flowers of this are orange-buff and red, or warm terra-cotta.

ROSE OWEN.—Brick-red, very showy.

POMPONS.

LUNE FLEURIE.—The flowers of this, much resembling blooms of *Buddleia globosa*, are orange-yellow, florets serrated, very small and compact.

ALICE STEVENS.—The well-formed flowers are orange-yellow, a very show variety.

INCURVED.

Any variety possessing merit is sure to be welcomed to this section, which is added to very

slowly. **Mrs. S. Coleman** may best be described as a bronze Princess of Wales, and no doubt will take a leading position when opportunity is given for its proper development. The form of the flower is exactly like that of its parent, the colour is light bronzy yellow on a pale pink base; in this manner the two colours are seen in the flower. Those blooms which are developed from crown buds early do not show so much of the bronze, but are pale yellow, and, of course, less pink also is seen. Many early flowers are almost white; hence often much confusion is caused, as they resemble *Mrs. Heal* more than true Princess of Wales. Blooms of *Mrs. S. Coleman* developed from terminal buds will, of course, be smaller, but will have the bronze colour more defined; therefore for this reason there is sure to be a variation in the colour of this variety. When it gets established in the hands of good growers I doubt not but that it will become one of the leading varieties.

J. DOUGHTY, lately certificated by the National Chrysanthemum Society, and said to be a sport from *Queen of England*, is exactly like a variety named *Mr. Robert Mudie*, which grew here during the last year. *Mr. R. Mudie* sported from *Alfred Salter* two years since. I regard it as an advance upon *Bronze Queen of England*, as the petals incurve so much more perfectly than in the case of that variety, except in a very few instances. If this new sport after further trial comes up to expectation, it will add another variety quite distinct in colour to the *Queen* family. It seems very strange that two varieties which, as far as I can see, are identical with each other, as in the case of *J. Doughty* and *Mr. R. Mudie*, should have come from two such distinct varieties as are *Queen of England* and *Alfred Salter*. I had thought the variety I have grown needed further trial before it would be safe to send out as new, but, as before stated, the colour is quite like that of *J. Doughty* described, a bright rose, lightly shaded, mainly in the centre, with a soft yellowish buff, more perceptible at the points of the florets than all through them.

WILLIE is a sport from *Captivation*, a variety introduced by *Pelbas* as far back as 1868, in itself now little cultivated, owing, I suppose, to its small size, as small kinds now-a-days are of little use in winning prizes, no matter how pretty they may be; the soft yellow shading which this new kind possesses in the centre may make it sufficiently attractive as a front row bloom where grown for exhibition.

JAPANESE.

These appear in large numbers this season, and will, no doubt, add much interest to an already large section of varieties, affording more scope for a selection of forms and colours. The following eight kinds were shown by *Mr. Owen*, who appears to have many desirable novelties on hand this season:—

G. ATKINSON belongs to the broad, flat-petalled section; the colour is white, heavily veined with pink. Quite a promising and desirable kind.

ROBERT CRAWFORD is best described as of a light magenta colour, much paler on the inside of the florets which are broad and incurve thoroughly.

LEON FRACHE.—Blush colour, flat petals and good.

MARVEL is exactly of the form of *Mr. H. Wellam*, which has flat or pointed florets, sometimes split at the points; the colour is creamy white, splashed and streaked purple. The new variety resembles the above in all respects, except that it is striped much heavier, and is certainly an improvement, as the older variety is somewhat dingy in appearance.

MR. J. COLLINS in form is between *Criterion* and *Val d'Andorre*, with broad florets of a rich brick red colour, which is a desirable contrast to many other duller varieties.

MR. A. H. NEVE.—The florets are broad and flat, bluish in the centre, changing to silver white with age. Quite novel and distinct.

SUPERBE FLORE belongs to the *Mme. J. Laing* type of flower; magenta-red, tipped white.

M. ANTOINE BERGES is of the *Mlle. Lacroix* class of flower, the colour sulphur-white. Very pretty.

MME. LAY is best described as purple-magenta, rather deeper in its colouring than *Stanstead Surprise*. It is a large flower, of good form, and quite worthy of trial.

R. C. KINGSTON is one of *Mr. Cannell's* seedlings, a full flower, narrow reflexed florets, purple-violet, of excellent habit, dwarf. A step in the right direction.

ANEMONE.

BOYCE'S SEEDLING.—This appears to be a desirable variety; the guard florets are pale lilac; the centre, which is full, is pale yellow.

RUCHE TOULOUSAINE.—Deep lilac, good centre.

SINGLE VARIETIES.

MOZART.—Rose-magenta. Good form.

QUEEN OF YELLOWS.—The flowers are of *Buttercup* form; clear yellow. E. M.

GROUPS AT CHRYSANTHEMUM SHOWS.

GROUPS composed exclusively of *Chrysanthemums*, unless they are exceptionally well done, both quality of the blooms and the arrangement being perfect, are far from being generally pleasing, as they are either too formal or too rough in appearance. In some instances the centre and background are fairly good, but at the front there is a woeful falling off, there being scarcely anything to hide the pots and the unsightly stems of the front plants. At some of the smaller local shows the groups are frequently very meagre, and stakes of various kinds are far too conspicuous. Even poor groups are preferable to miserable attempts at training plants, but the question arises, Why should so many of the stakes be seen? Framers of schedules can easily guard against the risks of having groups of an inferior character by admitting other plants of an ornamental character into the groups, merely stipulating if need be that the *Chrysanthemums* should predominate. At *Wells* this plan has been adopted from the first, and the principal groups arranged are really most imposing and attractive. The backgrounds are always largely composed of *Chrysanthemums* carrying very fine blooms, the only other tall plants used being a few extra good *Poinsettias* (and which I hold contrast well with and do not "kill" the *Chrysanthemums*), while the fronts of the groups are largely composed of *Palms*, *Ferns*, *Eucharis*, *Epiphyllums*, *Cypripediums*, and a few brightly coloured *Crotons* and *Dracenas*. At some of the larger shows, notably *Bath*, *Bristol*, and *Birmingham*, separate classes are provided for groups of *Chrysanthemums* and also for mixed plants. The more energetic exhibitors contrive to raise a number of dwarf well-flowered plants for the fronts of the groups, and at another show one exhibitor went the length of sticking stout flowering branches into pots for the occasion. The latter proceeding, though a by no means isolated occurrence, is, of course, not admissible, but rooted dwarf plants are certainly needed to give a finish to the somewhat formal group. The mixed groups are far more beautiful, these giving those arranging them a good opportunity to display superior taste. By all means admit *Chrysanthemums* into these mixed groups, but it is too ridiculous to insist that they should predominate when there are classes specially set apart for groups of *Chrysanthemums* only. Yet this appears to be the practice at *Birmingham*. At the grand show recently held several good groups of all *Chrysanthemums* were shown, and no less than seven mixed groups. Most of these were above the average, but one or two really very beautiful arrangements were passed over by the judges solely on the ground that too few *Chrysanthemums* had been used in their construction. The prizes were offered for a "group of natural grown *Chrysanthemums* (whatever that may mean) arranged with *Ferns* and foliage plants for effect in a space not exceeding 40 square feet." The judges construed

this to mean that Chrysanthemums should predominate, and awarded the prizes accordingly; but were they justified in doing so, especially seeing what lovely groups they conscientiously doubtless passed over? W. I. M.

MARKET CHRYSANTHEMUMS.

PROMPTED by the recent article on this topic by "C. L.," I looked in the other day upon one of our large growers of Chrysanthemums for market. He was just then busy cutting bunches of both white and yellow flowers, almost the only ones left for late work, and in response to the query as to how prices ruled, he said at once, "Very good. We are getting 1s. now for what we got 2d. in November." That was for a bunch of about sixteen fairly good blooms now, but in November the flowers being larger, it consisted of a dozen or thirteen flowers. It is a fact, however, that some growers could only sell at 1d. a dozen in November. The fact is worth publication, as so many gardeners and others when they have a big lot of flowers to spare in November send them up in boxes to market, and are very much annoyed when they find the returns are *nil*. If such a man as this grower to whom I refer, who sells for himself and has old and first-class connections in the market, can only obtain 2d. or 1d. a bunch, what hope is there that the country grower can secure even this? Sending flowers to a market which is literally flooded by the ordinary growers is foolish indeed. Better give away the flowers to friends and neighbours than that they should go to market to be given away at last. The grower I called upon did, however, state that November prices had been unusually low this year. He attributed that to the fact that, owing to the singularly favourable autumn, blooms had been so abundant and good outdoors. It seems also very probable that more persons have taken to the growth of Chrysanthemums for cutting from; indeed, it is a fact that the ordinary growers have increased their own stocks fully 30 per cent., so that with a favourable season no wonder there was in November such a plethora of bloom. Because it is not at all possible to foresee what sort of weather will prevail in November during future years, it is not likely that any check to the growth of plants will follow. Given a rather hard time at the end of October or early in November, keeping back plants under glass, and destroying those outdoors, and good prices will inevitably result. Thus there is always good encouragement to grow large quantities of plants. It is a fact that whilst October prices range at about 8d. and November at 2d., those for December run up to 1s. On the other hand, it is far easier to produce good blooms in plenty during October than in December; therefore, on the whole, the price proves as profitable. A little more disbudding, especially of the late plants, is desirable. In the effort to produce so many flowers, the bulk are rather small and do not fill the centres well. Whatever may be said in favour of the singles, it is certain that if the public purchase double flowers they like to have them double; hence a little more disbudding for December flowers would result in better prices, for really good flowers always sell best. Those who can manage to hold on till Christmas, of course command the best market. It is to be hoped, however, that another year the growers will not be forced to house so early as the end of September.

A. D.

SHORT NOTES.—CHRYSANTHEMUMS.

Mme. Robert Owen is one of the latest additions to the Anemone section of Chrysanthemums. The flowers are pure white, well formed and produced in quantity upon sprays 1 foot to 2 feet long.

Chrysanthemums for the open air.—Can any reader of THE GARDEN tell me of three better open-air late-flowering Chrysanthemums than Emperor of China (= Cottage Pink), St. Michael (yellow), Adras-tus (purple)?—F. W. BURIDGE.

Chrysanthemum Le Dauphinois is a pretty free-flowering Japanese variety. The blooms in shape resemble those of Criterion, but are smaller. The colour

is bronzy-amber, shaded brick-red in the centre—a novel and attractive flower.

Chrysanthemum sports.—Messrs. Hawkins and Bennett, of Twickenham, have now what promises to be one of the very best of all late yellows in a deeper coloured sport from Mrs. N. Davis, and which they have called Mrs. Bennett. The variety presents as distinct an advance in colour over Mrs. Davis as Mrs. Hawkins does over G. Wermig. It is very evident that among the very late sorts, a good, deep, rich yellow is much wanted, especially that Mrs. Davis, undoubtedly one of the best late yellows, because so wonderfully free, yet pales very much withal. A late yellow variety of the orange-yellow hue of Peter the Great or Jardin des Plantes would be great gain, and as Mrs. Davis has sported so far, it is very likely it will go farther yet. We may even expect that Mrs. Hawkins will throw a deeper-coloured sport some day. It certainly is more robust and produces finer blooms than does G. Wermig, and is still quite as early. The chief colours for early and late cutting are white and yellow, deep rich reds or bronzes being most in request in midseason when the colours are really good. None the less, some deep-hued forms would be acceptable early, but being late, it is feared, their incapacity to retain their natural rich hues checks cultivation. The growers I have referred to find in that pure white sport, Lord Eversley, a capital advance upon Princess Teck.—A. D.

Half-standard Chrysanthemums.—At the late centenary exhibition held in Ghent, a large number of the plants forming some of the most important groups were cultivated in a manner quite new to English cultivators generally. The form adopted was what I call half-standards, the result of allowing the plants to grow somewhat in a natural manner. Certainly they were very effective for grouping as used, and for ordinary conservatory use, associated thinly especially with fine-foliaged plants, they would produce a good effect. The plants had been allowed to grow with one stem from the cutting until the first natural break took place, which was at 2 feet high to double that height according to the variety, the plants ranging in height when in flower from 3 feet to 6 feet. Instead of thinning the shoots to three or four at the first break all were allowed to grow, the result being a splendid head of bloom without any twisting or formal training of the shoots, all being allowed to grow upright. The blooms were of good quality, each shoot only being allowed to carry one flower, the numbers ranging from thirty to sixty on a plant. One specimen of Mme. C. Audiguier showed especially to advantage in the centre of a group, carrying, as it did, sixteen flowers of excellent quality, and which were of a rich colour.—E. M.

Chrysanthemum Etoile de Lyon.—Perhaps "A. D." will pardon the delay in replying to his inquiry of what my real opinion is as to the desirability or otherwise of flowers similar to those exhibited at Kingston of this variety. The method of culture practised to obtain those blooms was exactly what I have recommended in THE GARDEN during the present year. I have nothing more to add on the score of culture to that already published regarding the variety in question; anyone following the advice given might have done likewise. The same blooms were kept in London and exhibited by me at the centenary exhibition in Ghent in a condition very little worse than they were at Kingston. Thus the blooms kept really fresh twelve days—certainly good enough in condition to please the people of Ghent and win for me a silver medal. I would ask "A. D.," could the same thing be done with the same number of blooms cultivated in any other way? The long-keeping quality of this variety is another point in its favour. "A. D." will gather from my remarks that my opinion is really in favour of large flowers of this kind, when, of course, they combine qualities which those in question contained, such as rich colouring, full centres, and regular form of the whole; but blooms of the same kind possessing only size should be condemned, as they do not show the proper colour or formation of the florets. I think if every variety were staged in its proper character there would not

be the same chance for criticism as there is now.—E. MOLYNEUX.

Chrysanthemum notes.—This has been a bad year for outdoor plants; the continued heavy rains killed the foliage, and in many cases the plants also. Mrs. Alpheus Hardy is a beautiful variety, but has not been exhibited very extensively this year. It is no doubt a spindling, lanky grower, and so far does not make a handsome plant. I have seen it from 6 feet to 10 feet high, and the best flowers were on the tallest plants. Ada Spaulding, the seedling which was awarded the cup given by Mrs. Harrison, the President's wife, at the Indianapolis show, is a wonderfully fine flower with a fine strong habit. I cannot say what kind of a specimen plant it will make, but as a cut flower it is superb. Shape perfect, colour pale primrose in the heart, shading into a clear La France pink. None of the last year's European seedlings approach it in quality. The present taste here is for immense single specimen blooms on stout stems 2 feet to 3 feet long.—J. T., *Maywood, New Jersey*.

A GREAT BOTANIC GARDEN AT ST. LOUIS.

THE whole of Mr. H. Shaw's estate, with the exception of a few small legacies, is now left to a board of trustees for the benefit of a botanic garden at St. Louis. It has been appraised at nearly £600,000 and produces a net income of about £10,000; but as a large part of Mr. Shaw's property is invested in unimproved real estate within the city limits of St. Louis, the income of his estate may be expected to increase with the growth of that city; and Professor Trelease, the director, will, in all probability, soon find himself at the head of a better endowed establishment than any other of its kind. There is no botanical garden in the world, with the exception of that at Kew, where the annual expenditure is not far from £20,000, which enjoys an income of anything like £10,000, and a vast amount of good and useful work can be accomplished every year with that sum. Prof. Trelease, with the income now at his command or which will be available for his purpose in a short time, will be able to lay the foundation of a garden of such scope that it will soon make St. Louis the botanical centre of the New World. His early efforts, very properly, will be devoted to elucidating the botany of North America; and he is fortunate in possessing as a nucleus of the St. Louis herbarium the collections of Engelmann.

Of special interest to young men who desire to become gardeners is the plan of offering, in connection with the Shaw Garden, six scholarships for garden pupils, for the benefit of young men between fourteen and twenty years of age, who are to be taken for six years, and who will be expected to work in the garden, receiving, besides instruction in botany, horticulture, entomology, as much land surveying and book-keeping as are necessary for a gardener having the charge of a large estate. It is proposed by means of these scholarships to make gardeners, and not botanists, and a taste for the manual work of the garden will be insisted on in the young men who hold them. They will receive pay for their work, and be given, free of cost, lodgings near the garden, as well as free tuition in the School of Botany of Washington University, and such other instruction as may be necessary. Never before has such a chance been offered in this country to young men desiring to become gardeners.—*Garden and Forest*.

Indian method of propagation.—After all the writing about grafting and striking plants and trees from cuttings that has been going on for some time now in THE GARDEN, perhaps the Indian mode of striking plants from things difficult to pro-

pagate may be of interest to many. The "air cutting," or, as it is called here, the "gotee," is the principal mode of propagation of many Indian trees where layering is impracticable and cuttings cannot be struck. Just before the rains (May), or earlier, in Calcutta, a ring of bark 1 inch long is taken off a strong matured branch of last year's wood. The wound is allowed to dry a little, and then a lump of rich earth, wetted, is bound round, generally with a piece of cloth or Cocoa-nut fibre tied tightly round, and a small earthen vessel of water, with a string for a syphon in it, is tied over the cutting to keep it damp. In favourable weather the cutting is well rooted in six weeks or two months; it is then cut and planted in shade. With care, 75 per cent. grow.—C. MARIES.

FRUIT GARDEN.

LORD SUFFIELD APPLE.

THIS capital early Apple here figured is a most abundant and sure bearer, and is almost always,

fit for use by the middle of July, and during August, September, and early in October (proportionately later in cold localities) they are at their best.

Those having small gardens and who contemplate planting Apples should make a note of this kind. Bush trees of it take up but little space, and come into a fruit-bearing state very quickly, and rarely fail to carry a full crop of fine fruit. The only pruning needed is pinching out the points of the strongest shoots in July, and giving a very slight thinning and regulating in winter.

G. * * We have heard it said that the growth of this fine Apple is tender, and that in consequence the trees do not develop to a good size. Any of our readers who may have had experience with it in cold and exposed localities will perhaps kindly communicate the result to us, as it is a matter of importance and general interest.—ED.



Apple Lord Suffield.

axils of the leaves right up to the points of the shoots, where, all conditions being favourable, they commence swelling in the spring, and without the aid of fire heat ripen in July and August. The trees at the same time commence a new growth, and if not too strong form as many fruits as leaves, but our summers being too short and cold, the majority of them get too forward to stand and not forward enough to ripen. This, however, matters very little, as the trees make an abundance of tiny figlets near the points of the shoots, and all not larger than a small Pea stand safely enough under glass throughout the winter. If carefully examined, the points of the shoots on your fertile trees will be found well furnished with enough and to spare for the first crop, and having had a fair amount of rest you may commence forcing say on the first day of January. Meantime put in the hot-water pipes, but do not apply heat unless the weather is very severe. Keep the trees dry and cool, get them cleansed, tied, and ready for starting. If suitable forcing varieties like Brown Turkey, White Mar-seilles, or the Ischias, the first crop will commence ripening towards the end of May, and, your management being good, the second crop from the spring shoots will follow from the end of July through August and September. If not well up in forcing, read articles on the Fig, published in back volumes of THE GARDEN, or you may gather useful hints from a paper on this subject which will appear, possibly, with this short reply to your query.—W. C.

FRUIT-GROWING STATISTICS.

IT is doubtful whether any so-called facts can be more misleading than are fruit-growing statistics. It is true there need be no errors nor exaggerations as to the rental of ground, the number of trees and bushes required to stock it per acre, and the cost of labour in clearing, manuring, pruning, marketing produce, &c., of the same. Unfortunately, in relation to published statistics we hear too little of this side of the account, whilst glowing figures are given on the other side, thus leading ignorant people to believe that fruit culture may prove to be a sort of Golconda or gold mine. Some time since I learned what a market grower near me regarded as the average profits of well planted and filled fruit ground. This, too, in the case of a man of large experience, whose fruit breadths will compare favourably with those of any grower in the country who is well placed. As regards marketing, he can get his work done as well and as cheaply as anyone. His estimate of cost and of profit was based upon present results with the whole of the ground cropped to its utmost capacity with Apples, Pears, Plums, Gooseberries, and Currants, and yet the balance of profit did not, I think, exceed £20 per acre. That was taking an average of years of course, and yet for several years after planting, especially from the top trees, there was very little coming in, so that to get a fair average it is needful to strike a balance over fourteen years at least, if not twenty-one years, the usual long lease of fruit ground. Now expenses include rent, rates, taxes, manure, labour in pruning, digging, hoeing, gathering, and marketing, a heavy item; also baskets, wear and tear of horses and wagons, and other incidental expenses not easy to enumerate. Still the outlay is very large indeed. Now when there are bad seasons, and these with some only moderate ones reduce the average crop to about one half of what is usually held to be a good one, it is very obvious that only high prices can help to secure those romantic profits so often described, but so seldom found. But just when there is a big crop prices are necessarily low, even if the preservers take a big lot of the fruit, they do not pay fancy prices, neither will the ordinary tradesman, who, knowing the nature of the supply, buys at his own prices. In the fruit market it is not the vendor, but the purchaser who settles the ruling prices. The vendor who goes to market with good fruit anticipating prices to rule high will very probably find that owing to bulk he has to take the purchaser's price, which is perhaps 50 per cent. lower than his own anticipated one. Almost always those who quote the high returns obtained for fruit as evidence of what

in its season, quite first-rate for cooking purposes, so much so that I greatly question if it is excelled by any other early kind. Its even outline marks it not only as one of the handsomest of Apples, but, what is of equal importance, there is no waste in paring it. I find that rough, deep-furrowed Apples, like deep-eyed Potatoes, soon get into disrepute when smooth-skinned specimens are procurable. Lord Suffield is just the Apple for dwarf bushes; its fruits are large and heavy, and, being delicate-skinned, they are soon damaged if blown off tall standards, while from dwarfs, if they drop on the soft earth, little damage is done, and, in a general way, they will be mostly used before the rough gales of autumn set in, for they are often

Figs in cold houses.—I am about to shift some hot-water piping into a cold lean-to house. The back wall is covered with Fig trees which are carrying a heavy second crop. My idea was to ripen the second crop and every year after this to secure two crops of ripe fruit.—AMATEUR.

* * In answer to the above, by all means introduce the hot-water pipes, as few fruit trees, when well managed, pay better than the Fig. You must not, however, expect the half-swelled fruits now hanging on the trees to ripen, for if they have not already fallen they will very shortly do so. Indeed, so well is this imperfect maturation of Figs formed on shoots of the current year understood, that experienced managers of cold houses pull them off early in the autumn. This assistance enables the trees to form a profusion of embryo fruits in the

profits may be made for fruit take the maximum prices, whilst the general average returns is a long way below these. I have been tempted to moralise over the optimism which governs some writers on fruit production by looking over Mr. J. Wright's prize essay on that subject, having been favoured with a copy by the author. His matter generally is doubtless excellent, so far as a cursory glance enables me to observe, but being rather sceptical as a rule with regard to figures, I have scanned those found in the essay with more care and confidence which seem to need explanation. Here is a case taken from the *Financial Reformer*, for which Mr. Wright is not responsible, except that he has practically adopted it in his essay, and the judges of the essays seemed to think it satisfactory. The eleventh part of an acre of ground at Wickham planted with bush fruits, Raspberries, Strawberries, and vegetables gave a total return of £6 8s. 8d. Absolutely no information is given as to what year this return referred, or whether it is assumed as being an average return for a series of years. The rent is 6s., or about £3 6s. per acre. Manure is put at only 7s. 6d., or at the rate of £4 per acre—really an absurd value unless manure can be got very cheaply—and 4s. for interest on capital presumably expended in the planting of the ground. The product is a balance profit of £5 7s. 8d. Nothing is allowed for labour, which, including digging, manuring, pruning, gathering, marketing, &c., as well as for baskets, &c., should be put at 50s. at least, so that if to this item were added, as should be added, 12s. 6d. more for manure, we should find the actual profits of this garden to be £2 8s. 8d.—a very diverse result. To show how utterly problematical is the assumed profit, it is but enough to multiply it by 11 to make it to be within a few shillings of £60 per acre—not gross product, but net profit. On the other hand, looked at in the light of practical knowledge, it is seen that the actual profit would be per acre about £27. Now that is not at all a bad profit, and can only be secured by very constant attention and high cultivation. What is specially to be deplored in regard to figures of this nature is that they create hopes which can never be realised. When profits to men of the widest experience, first-class cultivators with every facility for the disposal of their produce, do not exceed £20 to £25 per acre average, it is not possible for others less favourably placed, and especially amateur cultivators, to get such enormous profits as are thus published. It seems to be assumed that people have only to grow fruit to find a market for it at their own doors. Nothing can be more misleading. The large growers who regularly attend markets can always sell at some price, but the small grower has to find his market how he can, and if in his locality others like him grow fruit largely, then his chance of selling is smaller than ever. The Sarisbury (Hants) Strawberry grounds are made the basis for another calculation. Here rent, labour, picking, &c., with twenty tons of manure, are put at £17 per acre. Twenty tons of manure so near London as Feltham would cost at least £8 to put it on the ground, and Botley station, the nearest to Sarisbury Green, is forty miles further on. No account is made apparently for straw or litter for keeping Strawberries clean, for punnets and baskets, whilst labour, including gathering, is put wonderfully low, and as a result the profits are put at £33 per acre. Then the Sarisbury Strawberry growers must be a terribly dissatisfied race, for they are ever complaining of difficulties and troubles. No account is taken either of the fact that about every third year the old plants have to be destroyed and new plantations made, which the second year of planting can barely produce £25 worth of fruit, much less £50 worth. I do not refer to these matters in a carping spirit, but it would be little less than criminal to allow figures to pass unchallenged which it is so very evident are wrong, and calculated to create hopes which can never be realised. I have seen enough of fruit culture to know that only with the best of soil, the highest skill, good sorts, well paid labour, and the highest cultivation can it be made to pay well, whilst with bad culture it has proved

in myriads of cases to be the road to ruin. Still further, those who have command of the best markets realise high prices when available, whilst those not so fortunate, even though good cultivators, have to be content with what prices they can obtain. The labour bill in connection with fruit culture is a rather heavy one. Pruning, hoeing, getting in manure, necessarily in barrows, forking, gathering, marketing, all cost a good deal, and when manure and rent, also local rates and taxes are added here up to some £14 or £15 per acre also, and must be paid, let the crop be good or bad, as also must the labour account, the vocation of fruit production is not at all so profitable as may be imagined. I do not say that under good culture it does not pay; far from that, but the profits are very moderate indeed. In my own locality a first-class firm leased for seven years at the undoubtedly high rent of £10 per acre a fine, but old orchard garden of thirty acres. They lost hundreds of pounds, and now have it at a reduced rental for a farther term in hopes they may retrieve their losses. The firm are high-class cultivators and first-class market men. The case may be singular, but perhaps not so much so as some may imagine. It would be indeed interesting could we get published some few of our leading fruit growers' balance-sheets for the past five years. Such information would indeed be valuable, and doubtless would serve to illustrate once more the old maxim, "All is not gold that glitters." A. D.

WORK AMONGST HARDY FRUITS.

THE severe weather having checked, if it has not put a stop to planting certainly for the next two months, the ever busy gardener will now be marshalling his full force in another direction. Pruning, cleansing, and training whenever the weather is dry will give the fullest occupation for a considerable time, and, considering that the flowering prospect is unquestionably good, no pains should be spared in putting each tree, from the Currant to the Peach, in perfect order. All the trees being leafless and dormant, it matters but little where one makes a beginning, and yet in almost every garden the *chef* works upon certain rules, varying them more or less in favour of the individuals who have to spend days and weeks against the cold walls. Here I make a point of pruning bush fruits first, then before chilling weather sets in we get over the trees on north and east walls, reserving the south and west aspects for days when north-easters are too keen for the workmen. Bush fruits and Raspberries already have been dealt with, but the latter have not been shortened back, as we prefer delaying this work for two reasons well known to those whose fortune it is to labour in cold, wet districts subject to severe frost quite late in the spring. Where properly thinned out and re-staked, the canes should be well washed with soapsuds as a preventive of the grub which attacks the ripe fruit in dry, hot seasons. Advantage may then be taken of dry frosty mornings for wheeling out good manure, and plenty of it, for forming a heavy surface mulch along the sides of rows and round the stools. This material contains all the elements essential to the strong growth of this profitable herbaceous plant, but upon the principle that it is possible to satiate any plant, old plantations may be greatly improved and invigorated by a change of food running through fresh light loam, peat, burnt earth, lime rubble, or sand even. Anything in fact fresh and fertilising is acceptable to the Raspberry, and once on the surface there it should remain, forking or digging being decidedly injurious.

PLUMS.—In large walled gardens it is possible to treat this early-flowering tree too kindly, so kindly indeed, that the crops on full sunny aspects get cut off sometimes as late as the end of May, whilst kindred varieties facing east, west, and north fruit heavily. Sun, as I pointed out the other day, is the great factor in the formation of sugar, and very early supplies of choice varieties never come amiss, but seeing how freely the Green Gage fruits as a standard, I question if the best walls in really warm gardens may not be more profitably covered by

Peaches and high-class Pears. These remarks, offered in passing, refer more to arrangement than management, and yet the position of the tree should be taken into account when the time arrives for pruning. Plums, unless they be cordons, the best of all forms for north and east aspects, should be thinly and extension trained and very closely pruned to keep the spurs quite near the brickwork. If time admits, it is a good plan to detach and well wash all the branches with soapsuds, also to dress the walls with the same, with strong brine or some other insecticide, but assuming that this attention cannot be given, then the soapsuds may be plied with the garden engine so soon as training is finished. Old and neglected trees, of which we have too many, may be restored to decent condition by root-lifting and close spur-pruning. If root-lifting is performed a season in advance, all the spurs, save one or two at the extremity of each branch, may be cut away the following autumn; the earlier the better after the leaves fall. Young shoots the following season may be laid in and stopped at various lengths where old spurs have disappeared, but all others should be closely pinched to induce the formation of fresh spurwood.

APRICOTS may be treated in the same way, but being more certain fruiters on well-ripened yearling wood, a general laying in and stopping all over the trees may be practised. The Apricot, if possible, should be pruned before December, and being subject to so many insect enemies, including a very small scale, the weevil of a tiny beetle, and the grub of a small moth, washing and sometimes sharp scrubbing is highly essential. The roots should be confined to the wall path, which may be left undisturbed for years, always provided it is well drained, heavily mulched, and copiously supplied with water. Washing the branches and shoots and watering the roots are two important matters; but unless the walls also are cleansed, there exists but small chance of getting free from insects. Soapsuds may be plied with great force, and being an excellent fertiliser, a thorough soaking may do good service, not only to the roots, but also as a destroyer of the larvæ of insects snugly resting beneath the surface of the border. Brine, on the other hand, is dangerous both to wood and roots; consequently it is better adapted for cleansing old walls in course of preparation for replanting with young trees than for application where they are established. Repointing and wiring to do away with nailing are most effectual, but before an old wall is repointed the joints should be picked out quite an inch inwards, and then the mortar should be put in when the weather is mild—certainly the reverse of frosty. The next preventive is the old brick-red wash made of lime or cement, soot, Venetian red, Russian fat, or linseed oil, plied hot and thoroughly worked into the old nail-holes. The greatest drawback to the grower of large fan-trained Apricots is paralysis, which sometimes takes halves, quarters, or it may be one or more large branches. No one seems able to cope with this disease, but observation leads to the inference that trees which have made extra strong growth in their youth suffer most; hence the wisdom of planting in sound, but not over-rich compost, and lifting once or twice to secure moderately strong wood which will get thoroughly ripened. Lifting or root-pruning checks gross growth in young trees, but prevention is better than cure, as obese shoots rarely grow into old and healthy timber. Another mode of modifying this disappointing eyecore is training the Apricot as a cordon, a mode for which it is admirably adapted. Maidens for this purpose should be carefully selected, and in order to keep them sound and the reverse of gross they should be lifted annually.

PEARS.—Summer pinching having reduced winter pruning to a very light affair, the time thus gained may be devoted to scrubbing, and possibly to painting with a mixture of stiff loam, soft soap, and paraffin, the latter in the proportion of half a pint to half a pound of soap and a gallon of loam finely sifted. If reduced to the consistency of paint by the addition of boiling water and laid on with an old paint-brush, trees literally dying under attacks

of Pear scale may be cleared in one season, and that without hurting the wood or flower-buds. Spur-pruning is another operation which requires greater attention, as we frequently see trees producing a profusion of weak puny flowers perfect possibly, but quite incapable of forming and maturing fruit of passable quality. Thinning, of course, may be resorted to, but the best time to thin is early winter, when the elongated and enervated spurs may be cut back with great advantage. If closely examined it will be found that nearly all the old spurs have made one or two buds near their base, and these, as a matter of course, should be preserved for growing into future fertility. Vigorous young trees of certain varieties, notably Pit-maston Duchess and Jargonelle, make growths 4 inches to 6 inches in length with a fine terminal flower-bud. These it is a good plan to draw in to the main branches, that is, where they will stand it, for the chance of a single Pear of extra fine quality. If the fruit does not set, they may be cut back to the lowest bud the following season.

APPLES.—Having quite recently touched upon the management of orchards, my remarks here apply to trees as grown in walled gardens. The pruning, or rather the thinning, of these we generally leave until all other trees, the Peach and Fig excepted, are finished. There prevails an impression that Apples on Paradise or Doucin stocks naturally remain very small, but this is a mistake, as I have dwarf trees of twenty-five years' growth quite 20 feet in diameter, thoroughly established on roots thrown out by the scions, healthy, fruitful, and free from canker. The main branches of these trees are drawn out to a few stakes at the winter dressing, shortening back is confined to a check upon the strongest leaders, and each branch is then pruned close home precisely as we prune cordons. Pyramids on the same stock are allowed to extend 1 foot or more each way every year, and so satisfactory is this mode of giving the rein, that I can strongly advise all owners of Paradise toys to let them go, simply confining the use of the knife to the tips of strong branches which are robbing their neighbours. If these trees are lifted at the end of the second year and replanted with their roots in a horizontal position, they may be left to take care of themselves in the future. They enjoy liberal mulching and are greatly benefited by copious supplies of water through the hose in hot dry weather. The constant use of soapsuds keeps them bright, clean, and free from Lichen, whilst the soda which finds its way to the roots may supply the food essential to the prevention of canker. The only insect which soapsuds does not annihilate is American blight, but this makes slow progress under repeated washings, and it may be cleared by painting with the mixture recommended for Pears.

W. C.

Espalier, or pyramid trained trees.—The espalier or trellis-trained tree, the most useful and economical for the walled-in garden, is, I fear, being ousted by the too prevalent fashion of planting pyramid or bush-trained trees. We are, I am convinced, on the wrong track. It is undoubtedly a great mistake to shade valuable ground (which is generally of too limited an area) with trees, that if confined to a trellis would leave the ground free for cropping and exposed to the sun. The espalier about 5 feet high, planted 6 feet from the walks, leaves a nice, neat, convenient border, that proves eminently useful either for flowers, salading, or the other small crops, too numerous to mention here, that gardeners have to produce. On the other hand, if the 6 feet border is planted with bush trees, its value for other purposes is almost *nil*. Practical experience of the two systems has so thoroughly convinced me that trees confined to a trellis, whether trained horizontally, perpendicularly, or diagonally, is the best form for Apples, Pears, Plums, Gooseberries, or Currants for the walled-in garden, that if I were replanting an old garden or laying out a new one, I would have no other. Again, the espalier-trained tree if allowed room to extend, requires less root-pruning and is a more certain bearer, being necessarily fully exposed to sunshine from its spreading

shape, as if kept moderately thin the sun shines on every part of the tree at any time of the day it may break through the clouds. The fruit also has a higher colour, size, and finish when so grown. No fruit, I will admit here, can be finer than that grown on the young pyramid or bush tree. I do not object to the tree in that stage of growth; but after ten, fifteen, or twenty years it becomes an intolerable robber of much valuable space, that I would for this reason have it only in the orchard.—
W. ALLAN, *Ganton Park, Norwich.*

CAN PEACHES AND NECTARINES BE GROWN AGAINST OPEN WALLS?*

I SHALL confine my remarks to the period over which my own observation and experience extend. In those days the production of Peaches and Nectarines out of doors was regarded as one of the ordinary phases of garden practice, and in consequence their cultivation was decidedly more successful than it is at the present time. We had not in those days discussions as to the relative advantages of growing these fruits out of doors and under glass. If fruit was wanted in advance of that produced by the trees against the open walls, a glass structure was devoted to its production. But the outdoor trees were depended upon for the main crop, and in consequence they had careful attention, and as the result they produced crops of excellent fruit. Failures did occur then as now, but they were comparatively few, and taking a series of years the cultivator obtained an abundant supply. That glass is of immense service in fruit production I freely admit, but it does not necessarily follow that because Peaches and Nectarines can be successfully grown in an orchard house that those who have no such convenience should not have their table supplied with these fruits during some part of the year. The fruit grower cannot wholly escape from the influence of fashion. The propagation and preparation of the comparatively large stocks of bedding plants diverted much attention from other departments, and the bedding out had to be done just at the time when the Peach trees required considerable attention. The bedding system undoubtedly exercised a material influence upon the outdoor culture of these fruits. The chief cause of the decline in the cultivation of outdoor Peaches may be traced to the more general introduction of glass houses into gardens about twenty-five years ago. We were then told on all sides that to attempt to produce a dish of Peaches or Nectarines without glass was almost impossible. We were assured also that the seasons had so changed that to efficiently protect the flowers from the cold blasts of spring, or to properly ripen the wood in the course of the summer was an impossibility. But this was not all. For many years following the cheapening of glass by the removal of the duty and the adoption of improved processes of manufacture it was too much the practice to attach undue importance to the indoor department of the garden. Twenty years ago the ambition of the majority of young gardeners was to obtain charge of the conservatory and plant stove. Work in the Peach house, Pine pit, and viney was not particularly objected to, but the pruning and nailing of wall trees was done with reluctance and the rougher operations of the kitchen garden under protest. In consequence of this combination of circumstances it is not surprising that the outdoor culture of the Peach and Nectarine should have almost become a lost art among us, or that the supplies of outdoor fruit should for a long period have been small and intermittent. Happily, a great change for the better has taken place in the ideas of young gardeners, and the Peach and the Nectarine have shared in the improvement that has been effected in the management of the fruit garden, as the result of the change. We may, indeed, congratulate ourselves upon the fact that Peaches are now being grown against open walls with greater success than at any period

during the past twenty years. Much, however, has yet to be done before the outdoor culture of Peaches can be considered thoroughly satisfactory. Holding this view, I hope that there will be no relaxation on the part of those who take an interest in hardy fruits to complete this much-needed reform. If I am asked what course should be taken to increase both the quantity and the quality of the fruit, I have no hesitation in saying that it must be in the direction of an improved system of management. I have frequently been told that it is simply a question of climate, and that if we could only change the climate, there would be no difficulty in obtaining an abundance of fruit. A change for the better in the climate would no doubt be an advantage; but as that is beyond our control, we must endeavour to adopt a course of culture suited to the peculiarities of the trees.

As the Peach and Nectarine are natives of Persia, it necessarily follows that they are comparatively tender and more susceptible to adverse influences than are the majority of fruit trees grown out of doors. Success or failure rests chiefly upon the condition of the wood at the end of the summer, and if that is fairly well ripened, it depends pretty much upon the activity of the cultivator in the spring following as to whether or not he gathers a good crop of fruit in the course of the summer. To obtain well-ripened wood, excepting in seasons that are particularly favourable, is by many regarded as an impossibility. But I do not so regard it, for to do so would be to ignore the teaching of long experience and wide observation. It is simply a question of placing the roots under proper conditions, and we must obtain clearer views as to what these conditions are.

FORMATION OF THE BORDERS.

We must fully appreciate the importance of well-drained borders, as with a superabundance of moisture about the roots, and especially in a stagnant state, the trees will make wood deficient in fibre, and continue in growth until so late a period that the completion of the ripening process is out of the question. Therefore, the steps necessary to prevent the water remaining in a stagnant condition about the roots must be taken either before or after the borders are formed. A drain laid down along the front of the border, 6 inches below the bottom, will usually suffice to carry off superfluous water. In some cases it may be necessary to supplement the drain with a layer of brick rubble or broken stone underneath the border. On soils that are naturally cold and heavy, it is a great advantage to raise the surface of the border from 12 inches to 18 inches above the general level and to separate the border from the cold subsoil by a layer of lime concrete. To provide a layer of drainage materials or of concrete will undoubtedly add to the cost. One of these provisions would be made by the experienced cultivator in forming a border for trees under glass where the soil is wet and cold; then why not make a similar provision for trees in the open which are assuredly less favourably placed? A good strong loam is the most suitable for Peaches and Nectarines. But there are comparatively few gardens in which they will not thrive without any additions being made to the staple. It may be necessary to consolidate a light, sandy soil by a liberal addition of loam brought in from the outside, or a moderate quantity of well-pulverised clay. Again, the staple may be so heavy and tenacious as to render a liberal dressing of some light material desirable. To break up the border to a depth of 2 feet or so will be advisable, but this must be done in order that the soil may settle down before planting. It is, indeed, good practice to trench over the border in the winter, then crop it during the summer, and plant the trees in the autumn following. Not a scrap of manure should be added to the border when prepared. We have been told that as the trees will probably occupy the same positions for many years, the borders must have fertilising matters added to them when under preparation. This mischievous teaching is not modern, and has much to answer for. Planted in a rich border the trees grow with excessive luxuriance, and the knife is freely used in

* Read by George Gordon at the meeting of the British Fruit Growers' Association, Crystal Palace, October 9, 1889.

the removal of fat shoots. As results of this treatment gumming and a whole train of evils follow as a matter of course. To abolish the use of manure in the formation of the border will be a great gain, as we shall then obtain a firmer and more satisfactory growth from the first. Let it not be understood that I am advocating a starving system of culture. So far from this being the case I would suggest that when the trees have commenced to bear, and not until then, they should have whatever assistance may be necessary, for to obtain first-class fruit from trees that are not in a vigorous condition is impossible.

TREATMENT OF THE TREES.

The most suitable trees to select are those in a moderately vigorous state and that have undergone some amount of training in the nursery. I would also give preference to trees on the Mussel stock, and showing few signs of the knife. In pruning the trees during the first two or three years, a course intermediate between that generally adopted by the past generation of cultivators and that which now obtains will give the best results. The older growers cut the leading branches the first season back to about one-third of their length, and in subsequent seasons pruned severely. By this means they obtained trees well furnished from the base, but the work of filling the wall space was slow, and the production of fat shoots gave much trouble. The cultivator of the present day merely takes off the tops of the leading shoots during the first and several subsequent years. Under this course of procedure large wall spaces are quickly covered, but in the majority of cases the trees are indifferently furnished with good bearing wood in the centre. From the first, overcrowding of the growth must be avoided, as it is only by allowing each shoot sufficient space for the full development of the leaves that strong, well-ripened wood can be obtained. Further, all the shoots that will not be required should be removed at a comparatively early period of the summer, the precaution being taken to proceed gradually with the work that the trees may not be subjected to any material check. At the commencement of the disbudding the cultivator must determine what shoots will be required for laying in, and having selected those occupying suitable positions, must so shape his course that no shoots beyond what are absolutely necessary are laid in. To lay in two or three times as many shoots as are required, in case they may be wanted, as is frequently done, is one of the several hindrances to Peach culture, and the practice cannot be too strongly condemned. The summer disbudding should, indeed, be so carried out that the winter pruning will consist chiefly in cutting away the shoots that have borne fruit, and shortening those of the previous season.

EARLY VARIETIES.

I would urge the more extended culture of the excellent early Peaches and Nectarines raised at Sawbridgeworth, and the fine early Peaches received from America, more especially on soils and in districts not particularly favourable to these fruits. Ripening their fruit in the second half of July and at the beginning of August they complete their growth early, and plenty of time is afforded the wood to attain full maturity. They are also of service in greatly prolonging the season, a point of no small importance in gardens of all classes. Concurrently with an extension of the culture of the early sorts, there should be a reduction in the space devoted to the late kinds, for only under the most favourable conditions are they even moderately good.

ROOT-PRUNING.

There is only one other point to which I would direct attention, and that is root-pruning. This phase of Peach culture seldom receives the attention its importance demands. We see in all directions trees producing fat wood, and we see also cultivators endeavouring to check the production of wood of this description by cutting away the strong shoots at their base. If it is necessary to check an undue luxuriance of growth the roots must have attention, and they may be simply shortened or the trees be

lifted and then have the roots shortened according to the condition of the trees. When they have occupied the same position for several years without being disturbed at the root, it is necessary to proceed cautiously with repressive measures. But in all cases it is essential to cut back any strong roots that may have struck down into the subsoil, for in no small degree do they promote the production of soft, unripened wood. It is indeed necessary to keep the roots near the surface, for to have them within the influence of the sun and air is a prime factor in the production of an abundant supply of richly-flavoured fruit.

ROOTING STRAWBERRY RUNNERS ON TURF

UNTIL I saw a representation of this plan of rooting Strawberry runners the other day in Mr. Wright's book on fruit growing, I had not heard of the plan and I have never seen it tested. Probably the author has no great opinion of the plan either, as it is dismissed in a few words, but the illustration may have been useful if the plan was not practical. What seems to be shown, according to illustration and the letterpress, is that pieces of turf 3 inches square are turned upside down and laid on the ground, the runners being rooted into them. As this process must of necessity take place in hot weather, it does seem very obvious that the pieces of turf would soon dry up, especially as they are laid on the surface of the soil. Had they been sunk into the soil, I should have imagined that they would not only have retained moisture longer, but also could have readily been watered. When standing on the soil, however, and once baked dry, it is evident that all the water poured on them would run off, there being no rims to pieces of turf as there are to pots. When runners are needed specially early or for forcing purposes it is certain that no plan for rooting excels the old one of pot layering; but for ordinary purposes it is equally certain that if the soil in which the plants producing runners are growing be broken up with a fork, have some fine soil added, and the runners be pegged into that, not only will rooting be of the quickest, but watering will be far more efficacious, and when the plants have to be transplanted, they can be removed with the aid of a hand-fork with good balls of soil, and will not feel the removal in any way. It seems to be absurd as well as misleading to advocate the use of pieces of turf for layering Strawberry runners into when absolutely no benefit to the plant is to result. If I am wrong in my view, I shall be fully prepared to acknowledge such to be the case, but I shall expect to have strong evidence in favour of the use of turf shown. In advising methods of layering it is too often overlooked that the primary thing is to get the plants to run out layers early, and to that end a few scores, according to the needs of the grower, should be denuded of bloom so as to encourage the development of early runners. Some of the smaller or later runners of the previous season not stout enough for forcing, if planted out into good soil in September, will throw runners early when the bloom is removed. These plants will the following season fully repay by the fine crop of fruit they will produce their lack of production the first year. Another illustration in the same book shows examples of good and bad planting of Strawberries, the proper being with the roots spread out. What really occurs in the case of the vast areas of hundreds of acres devoted to Strawberry culture for market sale is that literally millions of plants are put out yearly by means of the dibber, and these soon getting rooted grow into fine plants universally. It is by no means so easy to kill Strawberry plants as is generally imagined.

A. D.

Plums.—We have had the opinions of many gardeners and others respecting the best sorts of Peaches and Pears, and lists of these have been given, together with copious remarks, and it would, I think, be conducive to the interests of most of us who cultivate fruit if we were to have Plums taken up in the same way, as they are of great use in the garden. The paper read by Mr. T. F.

Rivers at the Horticultural Club deals pretty fully with this fruit, but, like all other fruits, Plums want weeding, as we have far too many sorts, and it seems to me perfectly useless to grow any except the very best kinds either for cooking or dessert; and if this were done, more than half those now in the lists might with advantage be expunged. Taking the dessert varieties first, my selection would be Green Gage, Kirke's, Jefferson, Reine Claude Violette, Coe's Golden Drop, Reine Claude de Bavay. In this half-dozen we have, in my opinion, the cream of the whole lot, and I would much rather plant these largely than have others that are not equal in flavour. An east or west wall will suit any or all of those mentioned, the east aspect being best for Kirke's and the Reine Claudes—at least it is so with us, as there they finish up finer. For cooking, I should start with Rivers' Early Prolific, then The Czar, Victoria, Prince Englebert, Pond's Seedling, and Late Orleans. What say others?—S. D.

ORCHIDS.

W. H. GOWER.

ORCHID FLOWERS FROM CHELTENHAM.

FROM Mr. Cypher, of the Queen's Road Nursery, Cheltenham, I have received one of the most superb bouquets imaginable, bright and beautiful, showing unmistakably that the flowers have been grown in the country; amongst these are several varieties of *Cypripedium insigne*, of which Mr. Cypher says he has hundreds of flowers open and many twin flowers. Amongst these I also find a very pretty form of *C. Maulei* and another of punctatum violaceum, of which the sender remarks, "This is the very best of all the forms of *C. insigne*," and I quite agree with him. A good coloured plate of these two kinds was given in THE GARDEN (Vol. XXI, p. 444), and the letterpress fully explains the distinctions between the two forms. Quantities of this species have been introduced of late in the hope of obtaining fine varieties. This idea has been realised, when we remember that *C. Halli* and the unique and beautiful *C. Sanderæ* have already appeared amongst them. Among the flowers is a magnificent form of *C. Leeanum grandiflorum*, and the flower justifies the name, the dorsal sepal being enormous, measuring upwards of 3 inches in length by 2½ inches in breadth, pure white, saving a patch of pale green at the base, and a central band of spots of magenta. *C. insigne biflorum* is a very bright form, with flowers about the size of those of *C. Maulei*. The white in the dorsal sepal, however, is confined more to the upper part, and does not extend round the sides. *C. insigne albo-marginatum* is a rather pale form with the dorsal sepal snow-white in the upper part, and broadly marked with white round the edges; the petals also are of a pale yellowish green. With all these forms before me, it is wonderful to see the wide differences in them. Next comes a very beautiful form of *C. callosum*, the colour being very rich, particularly the tips of the petals, which are rich rosy crimson, while the dorsal sepal is heavily flushed with the same colour. Of *C. Spicerianum* come numerous forms, some with twin and others single flowers, some with a white dorsal sepal, saving a central streak of crimson with a green patch at the base, and others flushed with rosy crimson, but all beautiful. The collection also contains flowers of the bright Veitchian hybrid, *C. cardinale*, which Mr. Cypher says is nearly always in flower. A plant which I noted some time ago in Mr. Measures' collection at Streatham had been in flower considerably over twelve months. A

spike of ten flowers of *Dendrobium bigibbum* is quite charming, the sepals and petals being purplish rose, and the lip deep rosy purple with the villous white patch on the disc, which is such a distinguishing mark of this species. Mr. Cypher says, "I have a fine display of this kind, many plants having a dozen spikes, and I have obtained many fine plants from top growths," so that from this fact one may tell that Mr. Cypher has obtained quite a mastery over this species. The form of *Lælia anceps* called *Protheroeiana* is another beautiful flower in this fine gathering, the sepals and petals being deep rosy purple quite to the base, the three-lobed lip being large, deep velvety maroon; side lobes large and rounded, slightly paler in colour, throat orange-yellow, streaked with crimson. A flower also of what Mr. Cypher calls *Lælia præstans*, but which I cannot but call an excellent variety of *L. pumila*, was also sent. Flowers of a good form of *Dendrobium rhodostomum*, of which Mr. Cypher says he has a fine lot, were also included. The flowers are white, heavily tipped with rosy crimson, and with a yellow stain at the base of the lip. This very pretty flower is another of the Messrs. Veitch's seedlings. The snowy white flowers of *Masdevallia tovarensis* are exceedingly beautiful, and Mr. Cypher says he has some 2000 spikes of this species, which must present a lovely appearance, and these are set off by numerous coloured species, of which *M. Veitchi grandiflora* enclosed is by far the richest. This flower is evidently the true form distributed by the Messrs. Veitch, the dorsal sepal being entirely covered with papillæ of a crimson-violet hue, whilst the outer half of the lower sepals only is thus ornamented, the inner portion being plain rich orange-scarlet. These and a few others of minor importance constitute a very rich and beautiful bouquet of flowers, which I hope will remain in full beauty until Christmas.

SHORT NOTES.—ORCHIDS.

Cymbidium Mastersi.—This beautiful species is now flowering in several collections around London, and is a most desirable plant for blooming at this season. It is a native of Northern India, and, like *C. eburneum*, flowers more freely if grown cool.

Odontoglossum Alexandræ.—It is not quite the time to expect to see such quantities of this species as are now flowering at Mr. Sander's establishment. It forms a most useful and beautiful addition to our flowers for Christmas, and, judging by the plants to be seen here, it would appear to be a plant that flowers all the year round, although late spring and early summer are apparently its proper time of blooming.

Cattleya Harrisoniæ.—From Mr. Simpkins, gardener to Mr. Measures, Cambridge Lodge, Camberwell, comes a magnificent flower, by far the largest we have ever seen, of this species. The sepals and petals are very large and broad, measuring close upon 5 inches across, the colour being a rosy-mauve throughout. The side lobes of the lip are large, white, faintly tinged with rose on the outside; middle lobe a soft satiny rose in front.

Cypripedium Medusæ alluded to at p. 493 must be *Cirrhopetalum Medusæ*. It is a plant I looked for in vain in Singapore, but it may have existed there before the old forests were so restricted as now. None of the residents who knew Orchids well could tell me of its habitat. Singapore is a great storehouse, and many plants said to be from thence simply come to the island from other parts of the Malayan Archipelago.—F. W. B.

Lælia exoniensis.—This, one of the most beautiful of the hybrids raised by Mr. Dominy in the nurseries of the Messrs. Veitch at Exeter, still stands in the first rank among Orchids. A grand example of this plant was recently bearing in the collection of Messrs. Sander at the St. Albans Nursery many trusses of its magnificent flowers. The flowers were each about 6 inches across, the sepals and petals pure white, heavily

blotched with purple, with a beautifully crisped margin. It is a very fine hybrid, and still remains scarce.—W. H. G.

Lælia anceps Ballantiniæ.—This is a superb new form of the white *L. anceps*, which was recently flowering in Mr. Sander's collection at St. Albans; the flowers are large and spreading, petals much broader than the sepals, white flushed with rose; lip white outside, the side lobes streaked on the inside with crimson, front lobe of a beautiful purple, the crest being rich yellow. It is one of the most beautiful forms of this Mexican winter-blooming species.—W. H. G.

Cattleya Marstersoniæ.—In this plant we have another beautiful hybrid of the Messrs. Veitch's, a cross between *C. Loddigesi* and *C. labiata*, and it is now flowering in the nursery of Messrs. Williams and Son at Holloway. It is a beautiful variety, as all are that have such a fine parent as *C. labiata*. The flowers are each about 5 inches across, sepals and petals soft rosy purple; the lip beautifully blotched with magenta, soft yellow at the base and on the inner part of the side lobes. There appear to be sundry forms of this variety, the plant in question being exceedingly beautiful.—W. H. G.

BOOKS.

LES FOUGERES RUSTIQUES.*

PUBLICATIONS devoted to this subject are so seldom issued on the Continent, that the book just before us is an agreeable surprise, and cannot fail to be welcomed by all lovers of Ferns, either on this or on the other side of the Channel. The subject is treated with a thoroughness which is one of the characteristics of the author, and which is greatly appreciated by all who are brought into contact with him. Mons. H. Correvon, to whom we are already indebted for a valuable work on alpine plants ("Les Plantes des Alpes; leur origine, leur culture, et leur acclimation dans les jardins"), as also for one on hardy Orchids ("Les Orchidées de pleine terre"), has made the study of hardy plants of all sorts a speciality, and his successes in that respect have been gratefully acknowledged by his appointments as Directeur du Jardin d'Acclimation à Genève, Directeur du Jardin Alpin (La Linnaea) en Valais, and above all President de l'Association pour la Protection des Plantes. A work emanating from such an authority is therefore of great assistance not only to the grower, but also to the scientist, for his dissertations upon the part which Ferns and Lycopods have taken in the formation of coal are most interesting, and the chapters which are devoted to the structure and development of Ferns, to their dissemination and natural habitats, to the modes of variation observed among them, to their propagation, to their artificial and natural culture, &c., are ably written and full of instruction. The most interesting part of the work, however, to readers on this side of the Channel is the one relating to the acclimation of Ferns which prove hardy under the Swiss climate, for it is evident that any of these plants possessing sufficient powers of resistance to a Swiss winter are also able to withstand our own uninjured. Mons. H. Correvon has not limited his researches to the European; he has also, and rightly, selected from the New World Ferns those which by their nature and from their habitat have proved after repeated trials that their hardiness could be thoroughly depended upon. The work closes with a couple of chapters devoted to the fernery and to the wild garden, in which the author gives a very good idea of some of our most celebrated collections, such as that of Mr. P. H. Rooke, at Weybridge; of Mr. G. F. Wilson, at Wisley; of Miss Jekyll, at Munstead, &c. In these closing chapters he also pays a well-deserved compliment to the natural love of the fernery and of the wild garden as they are understood in England, and draws a very fair comparison between the natural system of planting and

that which he terms "An abominable caricature, shocking the good taste and wounding the feelings of the artist." The work is fairly well illustrated, and its 240 pages, replete with instructive matter, cannot fail to be duly appreciated by all who are interested in that class of plants so justly popular in England. S.

Winter flowers and plants for indoor use.

—I shall be glad to be favoured with advice as to which are the most useful varieties of flowering plants, Palms and small pot shrubs to be grown for the purpose of cutting and bringing indoors for a week or ten days at a time in November and the succeeding months till May. In my garden there is a succession of four glass houses in which they can be brought forward. My present difficulty is that too many pretty, but tender stove plants are grown which will not bear being brought into the living rooms, and that there are not enough cut flowers. The flowering plants or shrubs should bear ten miles transport by the road (which is the distance from my country garden to my London house). I shall be greatly obliged by any lists or advice (classified month by month) from some of your experienced readers.—AMATEUR.

Lawns in autumn and winter.—I shall be much obliged for information as to the best treatment in winter of lawn-tennis courts and lawns.—R. L. A.

* * A well-kept lawn is always attractive and pleasant. In spring and early summer when the Grass is growing close and green frequent cuttings with the machine keep it in excellent condition, but in autumn and winter it is not so easily kept in order. Worm-casts make their appearance, and when these are run over with the roller they spread out and make the lawn look unsightly. Those, then, who wish their lawns to look well must now give them a good deal of attention. Lawns should be well rolled, and previous to this all worm-casts and rubbish should be swept off. If the Grass is thin, a top-dressing of old potting soil to which has been added some rotten manure will be very beneficial.—ED.

Preserving fungi.—Can anyone tell me the best way of preserving specimens of fungi? Is it possible to dry them?—M. HUTCHINSON.

Erodium alpinum.—Can any of your readers tell me where this, recommended as a rock plant and stated to resemble a dwarf *Erodium Manescavi*, can be procured? I have tried every likely nursery, but no one has it.—A. J. B.

BOOKS RECEIVED.

"Horticultural Pocket-book and Diary for 1890." J. Weeks & Co., King's Road, Chelsea.

"The Culture of Vegetables and Flowers." Fourth Edition. Sutton & Sons, Reading.

Names of plants.—W. L.—1, *Adiantum Capillus-veneris* var.; 2, *Davallia elegans*; 3, *D. pyxidata*; 4, *Onychium japonicum*; 5, *Gymnogramma ochracea*; 6, send when fertile; 7, *Selaginella pubescens*; 8, *Dieffenbachia Bausei*; 9, *Catantium Bunge-rothi* fœm.—G. W. P.—1, *Manettia cordifolia*; 2, *Maranta roseo-lineata*; 3, *Cypripedium villosum*; 4, *Oncidium tigrinum*; 5, *Jasminum gracillimum*; 6, *Eurya latifolia variegata*; 7, *Polystichum capense*.—Mac.—1, *Compartmentia macropleuron*; 2, *Calanthe vestita oculata flava*; 3, *Trichomanes suavis*; 4, *Vanda tricolor* var.—H. M.—Cannot name vars. of zonal *Pelargoniums*; apply to someone that grows them.—T. G. K.—1, *Adiantum hispidulum*; 2, *Cyrtomium falcatum*; 3, *C. caryotideum*; 4, *Gleichenia dicarpa*; 5, *Selaginella filicina*; 6, *S. cuspidata*.—E. E. M.—1, *Trichomanes crispum*; 2, *T. pyxidiferum*; 3, *T. membranaceum*; 4, *Hymenophyllum hirsutum*; 5, *Trichomanes angustatum*.—B. M.—1, *Diplazium conchatum*; 2, *Meniscium simplex*; 3, *Dictyogramma japonica*; 4, *Elaphoglossum scolopendrifolium*; 5, *Polypodium plebejum*.—Inquirer.—1, *Dipteracanthus Herbsti*; 2, *Begonia manicata*; 3, *Rondeletia speciosa*; 4, *Linum trigynum*; 5, *Ipomœa Horsfallii*.—T. M.—*Cattleya imperialis*.

Names of fruits.—J. Berry.—1, Cox's Pomona; 2, Brabant Bellefleur.—G. E. Hall.—Pear, Vicar of Winkfield.

* "Les Fougères rustiques." By Mons. H. Correvon, 2, Chemin Dancet, Geneva.

WOODS & FORESTS.

THE SPRUCE FIR AND LARCH.

IN THE GARDEN, Nov. 30 (p. 518), it is stated that the common Spruce and Larch Fir in Italy prefer calcareous soil, from which statement one would be led to suppose that they preferred a similar soil in this country, but that such is not the case we have abundant proof. None of the trees absolutely refuse to grow on such a soil, but they never attain a profitable size, and are apt to contract heart-rot and pumping, and by the time the Spruce attains a height of about 30 feet the foliage gradually becomes thin and of a brown seared appearance, the annual increase of the wood in the stem becomes almost nil, or at any rate so small that the trees cannot profitably be longer retained on the ground. I have often maintained that there are many things in connection with tree culture in foreign countries that cannot be reconciled with our practice and experience in this country, and this is a case in point, and planters would do well not to plant their calcareous soils with any of the above species, except in cases where they are to be used as nurses for other trees. In speaking of the Spruce Fir, London says that the finest forests of that tree which he had seen were growing in peaty soil resting on sand, and liable to inundation during part of every winter. This is in keeping with the requirements of the tree in Great Britain and Ireland, and some of the finest Spruce trees which I have ever cut were grown on Irish peat bog. With regard to the Larch, we are told that in its native habitats on the Swiss and Tyrolean mountains it grows best where the geological features consist principally of granite, mica slate, and other rocks, but when the formation consists of limestone or sandstone the Larch all but disappears. No doubt the Larch is a hardy mountain tree, yet it is a curious fact that all the largest and finest trees of that species produced in this country have been grown on flat table-land where the soil consists of loose gravelly loam resting upon an open subsoil of gravel or sand. In the course of cutting down mixed plantations growing upon a soft clayey, marly soil that contained about 10 per cent. of lime, I found many of the Spruce and Larch trees to be of fair average size, but by the time they attained sixty years of age considerable numbers of both species were affected with heart-rot, thus proving that they cannot be grown in this country as first-class timber trees of large size with advantage upon this class of soil. In the same plantations Beech and Hornbeam were both healthy, while the timber was of the best quality and realised a high price. These trees seem to be quite at home on calcareous and marly soils, and may be planted on such with a reasonable prospect of success. Oaks were also of large size, perfectly healthy, and the timber of good quality. The Wych or Scotch Elm was in excellent form, very healthy, and the wood of good quality. Spanish Chestnuts in most cases had attained a large size and seemed in good health, but when the trees were cut down many of them were found to be much damaged by ring and section shake, which reduced their value very much. The common Ash (*Fraxinus excelsior*) and the green Ash, an American species, had both attained a good size, and presented clean uniform trunks free of blemish or black knots, and as the wood was strong and elastic they were both very valuable. Although the green Ash attains a good size and makes a fine specimen, yet when grown in the forest as a timber tree for profit I do not consider it in any way superior to the common species. It is perfectly hardy both in this country and in Ireland, where both species reproduce themselves in the woodlands and forests from seed. The mountain Ash had attained a medium size, but many of the trees were badly affected with heart-rot and pumping. The common wild Cherry or Gean is both ornamental and profitable as a timber tree, and it is rather strange that its merits have been overlooked by the planter for such a length of time. In this case the trees had attained an average height of about

50 feet in sixty years, and the average diameter of the stems was about 2 feet. The trees were in perfect health, and as the wood is highly appreciated for many purposes by the carpenter and cabinet-maker, it met with a ready sale at a very remunerative price. J. B. WEBSTER.

COST OF PREPARING FIREWOOD.

WHAT will it cost to prepare a ton of firewood is a question that is by no means readily answered, the cost of labour in various parts of the country differing so much. In England, generally speaking, the cutting up and stacking of a cord of fairly clean firewood, that is, when large, knotty pieces which require the mallet and wedge for their manipulation are excluded, cost from 5s. to 6s. Then how many cords of wood will make a ton of firewood is another question that is more readily asked than answered, for the difference in weight between equal sized logs of Yew and Birch is very considerable. For all practical purposes, however, we may state that about one and a half cords of wood go to the ton of firewood, thus making the cost of preparing and housing the latter somewhere about 10s. The lowest price at which I have ever sold a ton weight, fresh cut, was 8s.; but 10s. is nearer the usual price, or about one half of what is usually obtained for propwood. The cartage of this ton of wood cannot be less than 3s. Much depends upon distance, no doubt, but I usually made a rule to deliver it within a radius of two miles for the price quoted. The whole matter, therefore, stands something like this: Lowest cost of a ton of wood, 8s.; cutting same into firewood and stacking, 10s.; cost of delivery, 3s.; total, 21s. It will thus be seen that the difference in price between a ton of firewood and one of coal is inconsiderable, and everyone knows which of the two as fuel lasts the longest and imparts the greatest amount of heat.

As to what size the blocks should be, and whether these should be sawn or cut, I will now direct attention. By having the logs cut too small there is much waste in burning, while, on the other hand, it is easy to err in having these too large, for then the difficulty of igniting and keeping the fire alive in a grate of ordinary size is no easy matter. The logs should not exceed 1 foot in length, and if round, or as cut out of small wood, 4 inches in diameter. When of larger diameter they may be split either in half or quartered as the size of block demands. In converting the wood into firewood, the hand or cross-cut saw is best for cutting into the foot lengths, while for reducing these in size a heavy axe is preferable to any other tool I know, unless, indeed, it be in the case of unusually large blocks, when the mallet and wedges will require to be brought into use. Where a saw-mill is at hand the blocks of wood may at once be reduced to firewood size by the circular saw, but this cutting against the grain, as it needs must be in the case of longitudinal sections, renders the blocks difficult to ignite, and likewise lessens their lasting properties as firewood.

The best grate for burning firewood is that of Nature's framing, namely the hearth, but as this has its (supposed) disadvantages in the way of cleanliness, the following has been used with the most satisfactory results. The fireplaces should be circular and with dogs in them, circular ones increasing the heat over square ones in a marked degree. The lower the fire is placed the greater the warmth imparted and the longer the wood will last. Never remove any of the ashes, or at least as little as possible, for on their being retained the heat and lasting properties of the wood fire greatly depend. A good deal of attention is required in the way of keeping a wood fire in a satisfactory state; it must not be allowed to get too low, and this is easily prevented by keeping a box of logs in the room where such fires are in use. The best method of stacking firewood is worthy of comment and will, perhaps, be dwelt upon at a future time. A. D. WEBSTER.

Tree roots in drains.—Last winter we had to take up all the drain pipes leading from the mea-

dows to the lake, as the water, instead of flowing through them, forced its way up through the soil and flowed on the surface. When taken up the pipes were found to be filled with a solid mass of fibry roots, that when forced out and dried resembled a sponge having the exact shape of the pipe. As we could not do without drains, and the trees amongst which they were made could not be cut down, the next best course was to use glazed socket pipes, the ends of which were filled up with cement. Keeping roots out of drains is merely a question of expense, and my impression is that the majority of people are too well convinced of the benefits arising from planting trees in towns and by the sides of highways to let such improvement drop rather than make the drains so as to exclude roots.—J. G.

The Horse Chestnut.—The Horse Chestnut, the glory of so many English parks, was first introduced into England in the reign of Queen Elizabeth by Mr. Tradescant, who cultivated it in his garden at South Lambeth. The Horse Chestnut is a very handsome tree, gives a pleasant shade, and forms an imposing and picturesque object in the landscape. In this country it rarely exceeds 60 feet in height. In North America there are several indigenous species of this tree; it there attains a height of 80 feet or 90 feet, and a circumference of 15 feet. The bark of the Horse Chestnut possesses strong febrifugal qualities, and it is valuable for tanning and dyeing purposes; it also yields a useful drug called *Æsculin*. The timber of this tree is much inferior to that of the Sweet Chestnut; it is best suited for the construction of flooring and packing-cases. It has been calculated that 100 lbs. of Horse Chestnuts contain as much nutriment as 150 lbs. of hay; and in France, Switzerland, and Turkey it is customary to feed cattle, horses, sheep, and goats upon a kind of meal prepared from the nuts. Excellent charcoal and potash are obtained from the wood of the Horse Chestnut, which also makes good fuel. Gerard thus explains the origin of the name: "It is called *Equina castanea*, or Horse Chestnut, because the people of the East countries do with the fruits thereof cure their horses of the cough, shortness of breath, and such-like diseases."

Timely thinning of trees.—The importance of this subject cannot be too often impressed upon owners of estates, particularly where ornamental planting has been carried out in new places. It often occurs that a plantation is allowed to grow year after year unmolested until the whole becomes a thicket of growth, quite destroying the effect that the planter probably had in view. I remember some years since, while looking over a plantation several acres in extent, being surprised to find the trees all very thick, although their appearance showed that they had been planted originally in a systematic manner. I therefore made inquiry, in order to ascertain if the contractor had left any written specification regarding their future management. After some trouble the specification was found, when it was evident that it had not been consulted since the period of planting. In consequence of this neglect the trees had got into a mass of confusion. Those planted as avenue trees, to stand at stated distances apart, were crowded up with Poplars and other nurse trees originally intended to be removed.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1889, thirty-five vols., price, cloth, £27; cloth, £36; half morocco, £32 8s.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

FRUIT GARDEN.

W. COLEMAN.

FORCING THE FIG.

THE fruit of the Fig having grown rapidly into favour, it is not a little gratifying to find a great number of persons inquiring how its culture may be made profitable. Years ago the forcing of the Fig was confined to the gardens of the wealthy, and the outcome too often, it is feared, was far from satisfactory, but cheap glass and timber and the introduction of hot-water pipes have brought about such an acceptable change, that really good forced Figs now find their way into the market and are met with as dessert on all tables of ordinary pretensions. The professional, with all modern appliances at command, starts with pot trees in November, commences gathering in April, and, aided by permanently planted houses, maintains a good supply nearly up to Christmas. Indeed, quite recently we have heard of pot trees commencing bearing in November with the prospect of their giving good fruit until after Christmas, but this prolongation of the season shorn of its novelty is neither more nor less than a well provided method of retarding and taking in winter the crop the trees are not allowed to produce during the summer. On some future occasion I may write a paper on retarding, but my remarks for the present, in accordance with my text, must be confined to general forcing. Assuming, then, that a light span-roof pit is ready and good pot trees placed on inverted pots or pedestals to throw their heads well up to the glass are in position, top-dress with rich material, and make the balls thoroughly moist before heat is applied to them. If fire-heat alone is depended upon, the pits need not be deep, but fermenting material being so acceptable, the pots should be at least 2 feet clear of the bottom; then if Oak leaves have been well prepared fill up the pits when they are in a state of brisk fermentation, leaving a portion of each pot quite above their surface. Watch closely, and if the bottom-heat exceeds 80°, draw the loose leaves away from the pots until it has subsided. Add more warm leaves as they are required, syringe twice a day, using water at a temperature of 80°, and commence forcing at a minimum of 50°, increasing it to 55° on mild nights, and 5° to 10° higher when the days are light and favourable. Wash the glass frequently to prevent accumulations of confervæ, give a little air every day, and shut up when the maximum of 65° shows signs of declining. When the terminal buds commence breaking into growth and the young fruits to swell, increase the night heat to 55° or 60°, with a proportionate rise by day, and renovate the bed to prevent the bottom-heat from sinking much below 80°. Keep the balls thoroughly moist, but not too wet, and be guided by the state of the weather in the use of the syringe, as an excess of moisture clinging to the young shoots and fruit after the turn of the day may cause the latter to turn yellow and fall at the most critical stage in the whole course of culture. Days having improved in length and brightness, growth will now be rapid, and great care must be devoted both to syringing and airing, a moist even temperature being highly essential to successful fertilisation. When this tantalising process is complete, and the young

shoots are becoming crowded, pinch all the strongest at the fifth or sixth leaf, remove all useless spray, and slightly raise the mean temperature of the house, but not that of the bed, as a successful finish greatly depends upon an even and steady bottom-heat. If free varieties like Brown Turkey have set a profusion of fruit, the crop may now be thinned, for, notwithstanding the fact that Figs are liable to drop, the safety of the best is not ensured, but quite the reverse, by overloading. Exercise patience throughout the stationary stage, and pay particular attention to the bottom-heat, as Figs rarely go wrong when this is kept steady, and the roots find their way over the rims of the pots into the decaying material. When this takes place turning over must be discontinued, but more fresh leaves may be added and fresh top-dressing as the white roots show on the surface. As days increase and the sun gains power, feed copiously with good diluted liquid guano and soot water, syringe very freely when the temperature begins to rise from 68° or 70°, and again when the pit is closed at 80°, always taking care that the foliage is fairly dry before nightfall, when air for the night must be admitted.

RIPENING THE CROP.—Unlike all other deciduous fruit trees, the Fig from this stage forward is found maturing the first and swelling the second crop, for shortly after the first pinching is performed the successional growths will form young Figs at the base of each leaf. Therefore as these will increase the strain upon the plants they must be well fed, and whilst maintaining the maximum temperature by day, the house must be liberally ventilated, shut up early, and allowed to range low through the night. The treatment at this time, in fact, will be a sort of compromise, as it will be necessary to endeavour to keep the two crops going by feeding the young without spoiling the flavour of the ripening fruit. The balls in the pots, as a matter of course, must never become partially dry, neither must they be kept excessively wet, and at this stage those who have allowed young feeders to run into the decaying leaves will reap the full benefit, as roots in a medium of this kind find food which acts as a safety-valve against the dropping of the best fruit. About the end of the fourth week the most forward Figs will again commence swelling, and quite suddenly they will change colour for ripening, when more air, plenty of heat, and exposure to sun and light are points which must not be neglected. Direct syringing of the ripening fruit, too, must be discontinued, but the compromise may be carried on by syringing the stems, the surface of the bed, and the walls, and giving the foliage an occasional warm bath on a fine afternoon after the ripe Figs have been picked pretty close.

FINISHING THE SECOND CROP.—When all the ripe Figs have been picked, the first operation will be copious syringing with sulphur water, especially in dry, out-of-the-way corners, to free the bushes from insects, and, mindful of the fact that second crop fruits are apt to run smaller than the first, also that the danger of dropping is at an end, the crop must be well thinned. Meantime add rich top-dressing, including light turf, rotten manure, and bone-dust, to the tops of the pots, allowing large pieces of turf to hang over the rims; renew the heat in the bed by the addition of a layer of warm leaves, but do not disturb the old, now full of roots, and water freely the pots and bed with warm diluted liquid guano and soot water alternately, as the Fig likes a change of food. Syringe twice a day, using soot water occasion-

ally; maintain 70° at night, with a chink of air; run up to 80° by day, 85° with sunheat, and aim at 90° after closing, with a copious bath in the afternoon. In the management of the bushes look well to the removal of all superfluous spray, and stop any gross shoots which are robbing the fruit, but beyond this maintenance of the balance it will not be wise to go as every moderate spur-like shoot should have a good terminal bud with a cluster of leaves and tiny Figs forming at the base. As these almost imperceptible fruits will form the first crop the following year, none of these buds must be pinched, otherwise a weak growth, which will not ripen, will push, when the early crop on those particular shoots by getting too forward will be lost. The covetous grower may take a third crop, but the fruit will be small, and coming in when the crop from late house trees is very fine will be of little value, whilst the hardly pushed bushes will be unfit for early forcing the following year.

AUTUMN MANAGEMENT.—Assuming that the grower is satisfied with two good crops from his bushes, and trees growing in borders and trained against back walls or upon trellises under precisely similar treatment as to heat, moisture, and pinching also are giving two full crops, he must set about putting his pot trees in order for starting a month earlier than in the preceding year. The forced Fig being so subject to spider, scale, and bug, the syringe again must be most vigorously plied and insecticides if necessary must be used. When clean, syringe moderately to keep them so, give an abundance of air to prevent another growth, and gradually reduce the supply of water, but on no account allow the balls to become dry. If strongly rooted into the bed, cut round each pot with a long-bladed knife, and when the foliage shows signs of changing for ripening, keep the house dry and cool by throwing off the roof-lights through the day. Towards the end of August or early in September, each bush previously thoroughly moistened through the ball will be ready for a good shift into a clean pot, allowing about 3 inches of compost, which must be tightly rammed round each ball. All straggling roots, as a matter of course, must be cut back and old crocks removed; then, if the ball is still dry, it must be well soaked, as no after watering will suffice. The best compost for the Fig is formed of sound turfy loam, lime rubble, and crushed bones, and the best position after potting is the old bed, provided it is barely warm and the lights can be drawn off to keep the heads cool. Here, by the end of the third week, fresh root action will have set in, when the pots may be plunged to the rims in the open air and in the full blaze of the sun. If moderately watered after potting one more liberal supply will suffice, and the autumn being fine they may be left to themselves until the time arrives for shielding them from sharp frosts.

Apple Lord Suffield.—You invite correspondence on this fine Apple. My experience of it is that, taken from all points, it is one of the best cooking varieties grown. In favourable localities and on sandy soils it is, as you say, a most abundant and sure cropper. In a garden in the south of Hampshire I have seen magnificent crops of fine fruit gathered from very dwarf trees growing in soil by no means of the best. In Northumberland I had, a few years ago, some bush trees of it under my charge. The trees were growing upon soil of a wet and retentive nature, but by lifting and replanting them every two years or so, thus keeping the roots near the surface, I managed to procure tolerably good crops from them. This, too, was the only means of preventing the trees becoming cankered,

for, as is generally well known, this variety is more subject to that disease than any other Apple in cultivation. The situation was cold and somewhat exposed, but within a mile of the coast line. On the whole, however, it did fairly well with the above treatment, although it is quite possible that if the trees had not been lifted periodically the results would not have been so satisfactory.—C. C.

WORK IN FRUIT HOUSES.

PEACHES.

EARLY HOUSES in which the buds are swelling freely may be allowed to run up to 56° or 60° for a short time on the bright gleamy days so prevalent during periods of sharp dry frost, always, be it understood, with plenty of fresh air passing over the fermenting material, which must be regularly renovated to economise and soften fire-heat. With this aid the atmosphere of the house will never become too dry, especially if the walls and floors be well damped soon after the valves are opened, and again when the ventilators are closed, but, lacking this moisture-producing material, the less satisfactory method of direct syringing must be resorted to twice a day. In the management of fire-heat it is a good plan to open the valves at daylight and maintain a gentle circulation throughout the day, regulating the temperature by increasing or reducing ventilation, and shutting up the house when fire-heat is shut off. By adopting this plan all progress is made during the hours of daylight, and the buds being quite dry, rest in a temperature ranging about 45° will be safe through the night. Night firing in very severe weather may be necessary, but with the assistance of a good body of warm leaves, a minimum of 40° without overheating can easily be maintained. Watering must not be overlooked, particularly in houses which have not had the benefit of the autumnal rains; for, force we ever so carefully, bud-dropping must follow keeping the trees dry at the roots. Pure warm water at a temperature of 80° is best suited to vigorous young trees, whilst those which have been forced for years and incline to weakness may have generous liquid from the first. If properly drained, as all good Peach borders should be, it is hardly possible to overwater trees when in full growth; but preliminary to the opening of the flowers and bursting of the wood-buds, it is well to examine and repeat the supply until the lowest part of the border is thoroughly moist. The worst borders to manage are those which are neither concreted nor drained, especially upon cold, heavy soils, in which the roots start late and perish in growing when they should be at rest. Cases of this kind, fortunately, are not often met with, but they do exist, and those who are obliged to venture their reputation on early forcing should proceed with the greatest caution, as it is better to come in a month late than fail altogether. All early houses, I must repeat, should be carefully and repeatedly fumigated before the flowers open.

Succession houses intended for closing at Christmas or the first week in the new year should now be quite ready for work, and the roots, properly confined to internal borders, in a thoroughly moist growing condition. Having the turn of the year in their favour, the trees will stand a somewhat higher temperature with air on fine days, but no advance on 45°, as recommended for the early house, must be attempted through the night. On very severe nights indeed it may be wise to drop several degrees lower, but then this loss can always be redeemed by exceeding the mean when the weather is unseasonably mild. Fermenting leaves, the forcing gardener's sheet anchor, should be kept constantly on hand, not only for introduction before the house is closed, but also for renovating purposes whenever the heat shows signs of a decline.

Late houses containing the good old standard varieties will now be thrown open to the elements, fire-heat being out of the question, unless there is danger of frost getting into the pipes. As these trees will be retarded until the flower-buds are ready to burst, the pruning and cleansing may be held over for employment in bad weather. Mean-

time any alterations or additions to the borders may be carried out when the weather is mild and favourable to the disturbance of the roots. The best months for planting having gone by, the introduction of large trees should be deferred certainly for another month, when the compost, protected from cold rain and snow, will favour the immediate production of new roots. Indeed, so accommodating is a regularly root-pruned Peach that it may be lifted and taken in up to the end of February with every chance in favour of its carrying a good crop of fruit. The greatest drawback to late Peach trees is crowding the houses with tender or half-hardy plants, a practice far too common, since the Chrysanthemum, which should be hardy, is petted and coddled in a close temperature not unfrequently fatal to the crop of fruit. Those who can and will have hundreds of monster blooms, which may cost a guinea or so apiece, should provide houses for their special culture, otherwise they should absolve their gardeners from blame, as it is quite impossible for anyone to do full justice to a growing plant and a dormant fruit tree. If plants must be placed beneath the trees, they should be hardy enough to brave the cutting wind and many degrees of frost, such, for instance, as Hybrid Perpetual Roses, mollis Azaleas, Rhododendrons, Spiræas, Deutzias, and Strawberries in pots. Winter Cauliflowers, Lettuces, Endive, Parsley, and the like requiring the simple protection afforded by glass, are legitimate occupants, as they will stand a low temperature provided they are kept dry.

POT VINES.

These may be divided into two classes, those which save the very early forcing of permanent Vines by giving ripe Grapes in April and May, and late varieties for coming in through the autumn months. The first, including Hamburgs, Madresfield Court Muscat, Foster's Seedling, Buckland Sweetwater, and White Frontignan, if they are to answer any useful purpose, will now be well advanced. If started, as I suggested some weeks ago, in a moist steady bottom-heat, they will now be coming into flower, if not actually set. As this stage is reached the fermenting bed should be turned and renovated, not only to aid and soften fire-heat, but also to keep up root-action, a most important matter in securing a good set at this or any other period of the year. As soon as the bunches commence opening their flowers the temperature should be raised to 65° at night, 75° by day, and a few degrees higher when the sun breaks through the haze. Atmospheric moisture, on the other hand, must be slightly reduced, and, mindful of the fact that "nothing succeeds like success," advantage must be taken of the maximum temperature for fertilising the flowers. This operation some perform with fine spray from the syringe, but cross-fertilisation being advisable, a person with a very light hand should charge a camel's-hair brush with Hamburg pollen and pass it over the other varieties from day to day until the end he seeks is accomplished. When set and swelling, the bunches upon each Vine should be reduced to five or six if fine, to seven or eight if small, when thinning may be proceeded with. From this stage forward, rich top-dressing and generous feeding will play a very important part in carrying the Grapes to maturity, for no matter how well the Vines may have been prepared, it is unreasonable to suppose the crop can exceed mediocrity without judicious extraneous assistance. To this end the stimulants, very mild at first, should be gradually increased in strength and quantity, and here the sods of turf placed beneath the pots will do good service, first in attracting fresh roots, and second in filtering the liquid on its passage downwards. The top-dressing, prepared some weeks in advance and kept dry and warm, may consist of rich fibry loam two-thirds, solid dry cow manure one-third, and 12 per cent. of fine bone-dust. This should be applied little and often, and surface space being limited, a band of zinc 3 inches in depth, fitted closely within the rim of each pot, will make room for the top-dressing and copious supplies of water as the season advances. In the management of the rods and laterals the object of paramount importance is a full spread of healthy foliage. All shoots, as a

matter of course, will have been stopped at the first joint beyond the bunch, but assuming that some space is left, the leading lateral should be tied down and in due course stopped to develop the leaves, whilst minor laterals may be pinched and regulated as in ordinary vineries.

Late pot Vines.—Although less frequently met with, these are not less valuable than the preceding, particularly where old Vines have been lifted or newly-planted canes are too young for bearing. The best sorts for this work are Muscats, Alicantes, Lady Downe's, Mrs. Pince, Mrs. Pearson and Gros Colman. Midseason varieties also are equally valuable, but assuming that really late-keeping Grapes are wanted, then the varieties enumerated will give a good supply from September onwards. As these Vines have the whole season before them, they should be kept well plunged and invariably moist in a cold house until the buds commence swelling in March or April. Meantime, light, efficiently-heated, and well-ventilated houses should be prepared for them. The Muscats and Colmans should have the warmest house, the remainder of the varieties I have enumerated the other, and with the view to their giving a good crop two years in succession, their preparation and treatment will include careful attention to the following details: Not later than the 1st of January each cane must be shortened back to its required length and dressed with styptic, the whole of them at the same time being washed and tied down in an arched or horizontal position. A little water should be given before the roots become dust-dry, and when the buds begin to swell they must be transferred to their summer quarters. If I had my choice of houses, I should say let them be lean-to, facing full south, with a sharp pitch, and a narrow pit running close to the front ventilators. This I would bottom with a foot of old brick rubble, and face with a row of sods grass side downwards. The bottom of each pot should then be smashed to liberate the crotch roots, and when fixed in single file, the pit should be filled very loosely with Oak leaves in a state of mild fermentation. Summer management would consist in light cropping, good but safe feeding, and first-class culture, as in ordinary vineries. Following the liquid on its way downwards, the new roots swelling in the turf and rubble would finish four to six bunches of superb Grapes, and, left undisturbed, the crop the second year would surpass that obtained from the maidens. This is no myth or flash of fanciful theory, but the outline of a system practised by myself many years ago; therefore I know it will answer. Indeed, so confident am I, that I have just procured forty-five fruiting Vines for a gentleman who must have good Grapes for his shooting parties next autumn. When well done, the free and vigorous Muscat is one of our very best Grapes for late pot culture, and although inferior in quality, Gros Colman develops all its best points under similar treatment.

WORK AMONGST HARDY FRUITS.

PEACHES.—If not always detached from the walls, no time should be lost in getting them unnailed, pruned, and washed, and made secure from accident by wind or snow, as suggested in a former paper. If all apparent superfluous shoots were cut out in September or October, the winter pruning, a very light affair, will consist in a general dressing over and the removal of any faulty growths which escaped notice when the leaves were upon them. One of the great secrets of success in open-wall culture is thin training, 4 inches to 5 inches from shoot to shoot being quite close enough, allowance, as a matter of course, being made for covering all the aged branches with foliage. It is not a good plan to wash the trees during spells of very severe weather, but when mild and dry, the main stems and old branches should be carefully scrubbed and wood of the current year washed with rather strong soapy water. Soft soap may be used if thoroughly dissolved, but good brown soap or Gishurst compound, 6 ozs. to the gallon, answers equally well and possibly better. When washing the young wood, commencing at the base with the shoot resting on the

palm of the left hand, the half-worn paint-brush should be drawn constantly outwards, and brown scale having been troublesome, the operation may be repeated. The next operation will be tying to the light rods stuck into the border and made secure beneath the coping. These we place 1 foot from the base of the wall, and retarding being our sole object, we separate the shoots in preference to tying them out in bundles. Washing or colouring the walls is work which may be performed on any dry day before the buds commence swelling, but spring bringing its own claims, the sooner lurking enemies are entombed in the old joints and nail holes the better. Lime alone, I have no doubt, would answer this purpose, but when dry it is too light and conspicuous; hence my preference for an old brick-red colour, which is made by adding soot and Venetian red and a small quantity of linseed oil or Russian fat to the limewash. Spider having been troublesome, a few handfuls of sulphur may be introduced with advantage. As this wash dries out much lighter than it appears in solution, it should be tested on a piece of board or slate which dries quickly, and enough for all the walls should be prepared at one mixing.

FIGS.—The protection of wall Figs is an operation upon which fruit growers in different parts of the country express various opinions. On the south and west coasts, indeed in nearly all maritime counties, the Fig, as wall tree or standard, rarely suffers, no matter how severe the winter. Some exceptions, I believe, have been chronicled, as in 1860-61, when very large trees were killed at Arundel and other places in the county of Sussex; but so seldom does this happen, that growers leave them to take care of themselves, and not only save a great deal of trouble, but assert that the thinnest covering is injurious. In Scotland, too, there are numerous warm and sheltered nooks, especially near the sea, where the Fig is quite as safe as it is at Worthing. Inland the trees often suffer to an extent which renders them quite the reverse of satisfactory or profitable; but being general favourites, the majority of the owners of old gardens, stable-yards, and castle walls allow a tree or two to remain, although they get very little fruit from them. Such being the case, it matters little whether the unprofitable trees are left to themselves or receive the annual coating of thatch so strongly condemned by non-protectionists. Trees, on the other hand, which do produce one good crop, and yet are liable to be killed to the ground, may be sheltered, and not unfrequently saved, by prudent men who cannot be charged with coddling. If regularly root-pruned and well ripened, the wood, provided it is kept dry, will stand 20° to 25° of frost; but let in rain and allow snow to encase the branches in ice, the chances run strongly in favour of destruction, if not of the trees, certainly of the crop the following season. The first step, then, is protection of the roots by a liberal covering of dry straw, Fern or litter, thence to the top of the wall, the branches and young shoots may be shielded from rain and snow by the use of a broad projecting coping board, so generally approved of by growers of choice Pears and Peaches. If this intermediate course is considered insufficient, the trees may be carefully covered with straw or Fern, which must be allowed to remain until all danger of severe frost has passed away in the spring, but not long enough to induce premature swelling of the wood-buds and young figlets. When this period is reached the covering should be reduced bit by bit, but on no account must a clean sweep be made, as this sudden exposure checks the trees, when those who fail seek a loophole in the wholesale condemnation of protection. W. C.

SHORT NOTE.—FRUIT.

Secateurs, or the knife for pruning.—Pruning can be done more quickly by using secateurs than the knife, and for Currants, Gooseberries, and ordinary pruning there is no harm in using the former. I do not approve of the secateurs for Vines, Peaches, and such like, as they are apt to bruise the wood; whereas a sharp knife has no tendency in this direction.—J. M.

TREES AND SHRUBS.

COLOURED IVY LEAVES.

LONDON florists have for many years largely used prettily coloured Ivy leaves in the formation of sprays and button-hole bouquets with the best results. This must have been very apparent to the most superficial observer, and it is all the more surprising, therefore, how slow the provincial florists and gardeners generally are in following the excellent example set them. In some instances, I believe, this remissness is due to the difficulty experienced in procuring a plentiful supply of suitable leaves, as it is not everywhere that the small Ivies change from a dull green to a reddish brown hue with prominent yellow veins. Even this ought not to hinder the would-be successful florist, as in all probability the same Covent Garden salesman who supplies him with flowers whenever there is a scarcity in the locality would also furnish him with coloured Ivy leaves at a comparatively cheap rate. If I am rightly informed, the bulk of the best Ivy leaves that are used in London are imported, but as I happen to know, a considerable quantity are also hunted up in numerous country lanes and hedgerows. In this district we can find abundance, and so also can most country people if they would only take the trouble to look for them. It is not the vigorous or most healthy plants that produce coloured leaves, the reverse being the case. Nor are there any particular varieties that are most given to it, as we have several plants of the ordinary Irish Ivy that are beautifully coloured at the present time. Some of the latter are growing in a hot and dry position, and others against a sunny terrace wall, with their roots in sodden clayey soil. If we could not procure them in any other way, I should early in every summer partially sever or crush the stems of a number of plants with their tops trailing over tree trunks, up walls and rockwork generally. This rough treatment may perhaps end in the death of the branches so treated, but they die hard, and in any case most of the younger leaves become prettily coloured. The smaller wild Ivies would appear to change colour naturally, at any rate they are common enough, especially where they can trail over old tree stumps, stones, and much exposed stony banks. Samples found in a few minutes are enclosed with these notes. I would also add for the benefit of those who have not had any experience in the use of coloured Ivy leaves a few hints upon the manner in which they can be most effectively used. For surrounding either large or small bunches of Violets, both single and double, they are much to be preferred to either Violet leaves, Fern fronds, or green Ivy. The most pleasing funeral wreaths I ever saw were formed of good green Moss, this being partially covered with sprays and single leaves of small Ivy, among these being plentifully intermingled good flowers of Marie Louise Violet. The Violets being given light wire stems were not bound on, but were stuck into the Moss, in which manner only can they be successfully employed in wreath-making, and for button-holes they are also best wired. Safrano and other straw-coloured or yellow Rose-buds contrast beautifully with coloured Ivy leaves, and so also do Lilies of the Valley, Snowdrops, Roman Hyacinths, and such like. Nor is there any reason why these Ivy leaves should not be used in bouquets and vases, and it is very certain nothing is more effective for dinner-table decoration when much of this is done on the cloth. It is frequently necessary to wire the leaves or sprays in order to display them to the best advantage, and it is here where the experienced florists prove their superior taste and skill. Without the assistance of a neat wire stem it is scarcely possible to arrange the leaves in a natural manner. Only the upper surface should be shown, the under sides being anything but attractive. W. I. M.

* * The samples sent were very richly coloured, the venation being clear and distinct.—ED.

Olea fragrans.—It is very improbable that the name of *Olea* will be superseded by *Osmanthus*,

under which head it is now included. It is a very desirable plant for a cool greenhouse, not from the beauty of its blossoms, which are borne in great profusion, but owing to their delicious fragrance. The flowers are very small, of a creamy white colour, and so hidden underneath the leaves that they would be passed by unnoticed if it were not for their agreeable perfume. This *Olea* is a native of China and Japan, from whence it was introduced more than 100 years ago. In the "Dictionary of Gardening" its flowering season is given as June to August, but I have seen it in full bloom within the last few weeks in different places, among others in the economic house at Kew.—H. P.

A CHRISTMAS CHAPTER ON HOLLY.

SOME of our readers will perhaps say, Can anything new be said about Holly? We cannot answer this question, nor are we concerned just at present with novelties, but we know a great deal was said of old about Holly, and it is with a view of increasing our admiration of a plant so useful in our shrubberies and so welcome as a decorative plant at this time of year, that we have gathered together some facts connected with the antiquity of the Holly. There are few shrubs that can claim a more glorious pedigree than the Holly can. Pliny records the existence of a Holly tree in Rome the age of which he considered to antedate that of the Eternal City itself, and as a further proof of the length of time the trees retain their vitality, we may also refer to the same early writer's statement that the selection of the site of the city of Tibur was near three Holly trees that were still standing 1200 years afterwards! Loudon mentions a Holly tree growing at Claremont 80 feet high, an exceptional height in this country, though in France and Italy it grows to a very large size. Its adaptability for hedges and for the old system of so-called Dutch gardening is well known, and Evelyn immortalises a Holly hedge at Says Court, which was 400 feet long, 5 feet broad and 9 feet high, in the following words:—

Is there under Heaven a more glorious and refreshing object of the kind than such an impregnable hedge, glittering with its armed and varnished leaves, the taller standards at orderly distances blushing with their natural coral.

This hedge was planted at the instance of Peter the Great, who resided at Says Court during the time he was employed at Deptford Dockyard. The name of Holly or Holme tree is derived from the Anglo-Saxon *Holeyn*, and the names of many places in England commencing with *Holm* are said to have been derived from the large number of Hollies that once grew in their vicinities, and the greenwood tree of Robin Hood and other old English ballads of forest life is attributed to the Holly.

Folkard in his "Plant Lore, Legends and Lyrics," says:—

The disciples of Zoroaster or Fire Worshipers believe that the Holly tree casts no shadow, and both in Persia and India they employ an infusion of its leaves for several purposes connected with their religious observances. They also sprinkle the face of a newly-born child with water impregnated with Holly bark.

It is further stated on the authority of Pliny that if the Holly tree is planted near a house, it will keep away all evil spells and enchantments and protect the house from lightning, and he further states that the flowers of the Holly would freeze water and would repel poison, and that if a staff of Holly wood were thrown to any animal, even if it did not touch him, it would so influence the animal as to cause him to lie down beside it. The old English practice of hanging bunches in houses and halls is surrounded by many curious superstitions, one of which was that the elves and fairies clung to the boughs and hung in the leaves, and were present at all social gatherings at Christmas time, when the spirits possessed no power to harm. In some parts of France, Switzerland, and other Continental countries a custom prevails of cutting Holly on Christmas eve and hanging it in the houses to drive away evil spirits. The following quotation from Folkard will show how widespread

is this belief in the power of the Holly against witchcraft. He says:—

In Northumberland Holly is employed in a form of divination. There the prickly variety is called He Holly, and the smooth She Holly. It is the leaves of the latter only that are deemed proper for divining purposes. These smooth leaves must be plucked late on a Friday by persons careful to observe an unbroken silence from the time they go out to the dawn of the following morn. Then leaves must be collected in a three-cornered handkerchief, and, on being brought home, nine of them must be selected, tied with nine knots into the handkerchief, and placed beneath the pillow. The sleep being obtained, dreams worthy of all credit will attend this rite. In another form of divination a maiden places three pails of water on her bedroom floor, then pins to her night-dress, opposite her heart, three leaves of green Holly, and so retires to rest. She will be aroused from her first sleep by three terrible yells, followed by three horse laughs, after which the form of her future husband will appear. If he is deeply attached to her, he will change the position of the water-pails; if not, he will glide from the room without touching them. This spell is only effectual when performed on All Hallowe'en, Christmas Eve, New Year's Eve, and Bettane or Midsummer Eve.

Museum, Kew.

JOHN R. JACKSON.

NOTES OF THE WEEK.

Winter Flax (*Linum tetragynum*) and *Justicia speciosa* go well together, the rich rose-purple flowers of the *Justicia* not suffering from the strong contrast of the yellow colour of those of the *Linum*. Both, it is almost needless to say, are two of our best winter-flowering indoor plants.

Lady Downe's Grape at Clovenfords.—A house of this winter Grape in Messrs. Thomson and Sons' Tweed Vineyard at Clovenfords shows, from a photograph sent, an unusually rich crop of handsome bunches. The Vines were planted twenty years ago, and the special Vine and plant manure of the firm used in their production.

Ansellia africana.—This is a noble Orchid very seldom seen, and we were pleased to find two large plants of it in bloom the other day with Mr. Bull. Its upright stems grow between 3 feet and 4 feet high, the leaves evergreen and ribbed. The drooping, branching spikes come from the apex of the stem, bearing many flowers, yellow in colour, blotched profusely with deep brown-crimson; they remain several weeks in beauty.

Arenaria balearica.—The rockery is made interesting in winter by this little creeping plant, which covers the stones with a Moss-like growth, studded in summer with small white starry flowers. It is of the richest green colour now, and makes an interesting study on bold rockeries, as at Kew. In every rock garden this Sandwort should ramble at will.

Greenhouse Rhododendron planted out.—The varieties of Javanese Rhododendrons do well planted in a peaty border with other indoor shrubs. In the temperate house at Kew the plants are bearing several trusses of bloom, showing not only their value for grouping in the borders of large conservatories, but that an intermediate temperature is not essential to success.

Odontoglossum aspersum.—This pretty *Odontoglossum* was in full bloom last week at Mr. Bull's. It is a supposed natural hybrid between *O. maculatum* and *O. Rossi*, and from the appearance of the flowers this is probably correct. The sepals are narrow, richly blotched with chestnut-brown, the petals being much broader, pale yellow, except for a few blotches of brown; the lip is faint primrose colour.

Rockfoils on a garden wall.—The dividing garden wall of a house facing Kew Green is covered on the top with the growth of the Mossy Saxifrage (*S. hypnoides*). This wall is a mystery to many in the spring, as it appears hard to account for the luxuriant growth, almost hidden with the flowers. On either edge of the wall is fastened a strip of board a few inches wide, and raised so as to allow of a fair depth of soil for the plants. It would be a happy thing if such simple pieces of town gardening were not so rare.

Calceolaria fuchsifolia.—A coloured plate of this interesting plant appeared in THE GARDEN of March 29, 1879, and several plants of it are in bloom in the temperate house at Kew. Its flowers are golden yellow in colour, borne freely, and very pretty at this

season, but unfortunately they are soon cut off by fogs. When out of bloom it closely resembles a Fuchsia, by reason of its leaves. It grows about 2 feet high, and was introduced from Peru. *C. deflexa* is the same thing.

Winter Orchids.—Amongst the many choice Orchids in bloom with Mr. Bull are *Laelia albida bella*, *Odontoglossum Insleayi splendens*, *O. Harryanum*, *Burlingtonia decora*, *Dendrochilum Cobbianum*, the lovely *Dendrobium Ainsworthii*, *Zygopelatum Gaudieri*, and *Angræcum Leonis*. This *Angræcum*, or *Aeranthus*, as some are pleased to call it, was discovered by Mons. Leon Humblot in the Comoro Islands. The flowers are pure white and each has a long twisted spur.

Geranium Endressi.—In THE GARDEN for November 2, 1889, J. Wood, Kirkstall, speaks of the charming *Geranium Endressi*, and says, "If more difficult to cultivate it would be better known." I should like to add my testimony as to its being a perfect "wild garden" plant. Several years ago I planted a patch in a rough place, quite wild and beset with Brambles and rampant growing things in a copse, also some in coarse Grass among shrubs, and the plants have held their own and spread widely, and are quite as much at home as our native Sorrel or Wood Anemone.—M. A. ROBE.

A good Lilac for forcing.—We are trying several Lilacs for forcing, and send you a spray of the double variety, which strikes us as remarkable for the purity of its whiteness. Like most double flowers, it will last long cut. The single white variety *Marie Lemoine* (? syn., *Marie Legrange*) is particularly free and of snowy colour, whilst *Charles X.* though coming white has the slightest shade of blue.

* * Accompanying this note, Messrs. Paul sent a spray of double white Lilac, as white as snow, and lasting well when cut.—ED.

Ivy leaves.—The Ivy is a study of colour in the winter, and we need go no further than the hedgerow for leaves of rich reddish-brown beautifully veined like a piece of flagree work. The most brightly coloured leaves are used as button-holes in London, and sold largely by the flower-girls, usually in a small neat bunch, sometimes as a setting to white flowers. A large collection in winter reveals a remarkable variety of colours, from the tender variegated kinds of yellow, green, and brownish-red to the almost self purple of *atropurpurea*, the richest coloured Ivy we can possess for a wall. The deep green-leaved types, as *dentata* and *Emerald Gem*, are as green as in the spring, covering broad spaces with a refreshing verdure. A constant repetition of sombre-coloured Conifers, a want of bright-leaved climbers like the Ivies, and berried plants generally have made the garden in winter a place to avoid.

Galanthus Fosteri is just coming into flower with us in the open air, and with the exception of an Italian form, bulbs of which we received only last year, it proves the earliest of all the Snowdrops known to us, excluding, of course, *octobrensis*, which flowers very early in autumn. Dr. Foster's Snowdrop is a native of Amasia, in Asia Minor, and has large, broad, bright green leaves and somewhat large flowers. It is a decided acquisition, and if it proves the earliest, it will be invaluable for rockeries, &c., during open weather throughout the winter months. As a pot plant for a cool house it is sure to become a great favourite, as it may be had in flower early without the aid of artificial heat.—D. K.

Primula Fortunei.—Does any reader of THE GARDEN know the origin of *P. Fortunei*? This plant, a botanist will tell you, is one of the many forms of *P. denticulata*. It differs widely, however, from that species, inasmuch as it is in full flower now in a cold frame. Its leaves are shorter and altogether distinct, the flowers being more like those of a small *P. cortusoides*. The name would lead one to suppose that it came from China or Japan, and a few years ago this old garden name of *Fortunei* was taken up, and the plant described by Vatke, but he gave no habitat, so that its origin is as doubtful as ever. It is quite distinct from all the *denticulata* forms known to me.—K.

The Spring Starflower (*Triteleia uniflora*) is invaluable for winter work in the greenhouse. It stands forcing very well; the pots, however, should

be kept as close to the glass as possible to keep the plants dwarf, as this enhances their beauty for decoration. The flowers, I think, are most beautiful when only partly opened.

Primula obconica has proved of very great service to the gardener as a winter-flowering plant; indeed, if properly managed there need be no time throughout the year when flowers of this beautiful Primrose may not be had. We prefer seedlings, as the flowers usually come larger. Just now, and in spite of the sunless weather, our plants are full of flower, the effect of the bunches of rich lilac being very striking. It ripens seeds very freely, and if sown immediately they are gathered the plants may be had in flower in less than five months. We have tried dividing, but with very unsatisfactory results.—K.

A beautiful indoor shrub is *Polygala myrtifolia grandiflora*, in flower in the temperate house at Kew. It is not new, having been introduced from South Africa early in the present century, from whence also come *P. oppositifolia* and other types. The Myrtle-leaved *Polygala* is stated in some books to bloom in spring, but the specimen at Kew is studded with buds and expanded flowers, which are like those of the Everlasting Pea, rosy purple in colour, and very pretty amongst the rich abundance of silvery Myrtle-like leaves. If the plant bore no bloom it would be worth planting out in a large conservatory, winter garden, or temperate house, as the one at Kew. The plant is symmetrical in its growth, and very beautiful when happily placed amongst dark-leaved shrubs.

Corbularia monophylla.—We notice this welcome visitor in fine form in the greenhouse at Kew. Coming as it does so well in for Christmas, and considering its usefulness and value for cut flowers, &c., it is remarkable that it is still so scarce in gardens. It appears to be a plentiful bulb in the trade, and not expensive. The only thing necessary is to pot the bulbs as early as possible, keeping them on the dry side after flowering and removing all seeds. When the leaves turn yellow the bulbs should be quite dried off and placed so as to receive a thorough roasting or baking. This ensures a crop of flowers for the ensuing year.

Winter Aconite.—This charming spring flower is unusually early this year, many of the blooms being fully open in a warm sheltered spot on the rockery. We have always been partial to this in early spring, the whorls of lovely green leaves beneath the buttercup flowers being very beautiful and characteristic. Under trees where even Ivy refuses to grow, we find no trouble in establishing the winter Aconite, simply loosening up the soil and scattering a few handfuls of tubers; they soon establish themselves and are a source of great beauty and interest. It is a splendid plant for naturalising in Grass and forms a pleasing combination with Snowdrops and Snowflakes.

Aralia Sieboldi.—I planted a bed of this *Aralia* on my lawn some twenty years ago, and the plants are now 7 feet high and 18 feet across, and were recently covered with flowers the size and colour of a good Cauliflower, but in form not so compact. This bed has withstood some very severe frosts without apparent injury to the plants. A group of this *Aralia* is very effective and picturesque in short Grass on a lawn or pleasure ground.—V., Glenavna, Co. Antrim.

— *Aralia Sieboldi* is a plant that might be used more for outdoor gardening, not only for the richness of its glossy green leaves, but from its comparative hardness. We have already had a fairly long period of severe frost this season, followed by wet and dull days, but the plants in the Royal Horticultural Society's Gardens at Chiswick have not a seared leaf. They are planted in ordinary soil in a narrow border in front of a wall of Ivies. Such a bold, handsome thing as *Aralia Sieboldi* may, therefore, be left through the winter without fear of destruction by frost, unless the weather is unusually severe. Good clumps of it might take the place of the half-killed, struggling Palms that disfigure many good gardens, Kew amongst the number, and which have to be surrounded with framework in case of sudden frost.

BALFOUR HOUSE, FIFESHIRE.

FEW places in the county, or, as it is familiarly termed, "ye ancient Kingdom o' Fife," have charms so inviting as Balfour, in the parish of Markinch. The mansion and gardens are on the southern bank of the Leven, while to the south the Orr—the resort of anglers from far distant cities, towns, and villages—its waters, being unpolluted by any contaminating influences from public works, flows past. A remarkable fact may be worth noticing here. The rookery at Balfour is proverbial for rook shooting, being indulged in very much earlier than in other places in Fife. This is one of the many proofs of the pleasing, sheltered situation of Balfour. There is not a bit of barren rocky ground within its bounds. Balfour is the property of Mr. Charles C. Bethune, but at present is occupied by Mrs. Wemyss, relict of the late Mr. Wemyss, M.P.,

Yestreen the Queen had four Maries,
The nicht she'll hae but three;
There was Mary Seton, and Mary Beaton,
And Mary Carmichael and me.

The owners of Balfour House and grounds, being descended from the Normans, have a long history. The grounds of Balfour are beautifully wooded, and the clumps in the parks are well arranged and planted with trees that in summer present a very imposing appearance. Hazel, Lime, Elm, Beech, Plane, Willow, and Fir clothe the banks of the streams. Near the house many stately ancestral trees produce a grand effect. Amongst these are majestic Elms, Beeches, Oaks, Planes, Conifers, Chestnuts, Larches, &c., which have fitly adorned the grounds for centuries. Two fine Larches are attractive, and unfailingly rivet the attention of visitors, while the branches of a noble Chest-

of Hybrid Perpetual Roses yields an abundance of flowers all through the summer and autumn months. A small dell, in the centre of which is a fountain, is occupied by a fine collection of Ferns, which are thriving well under the necessary shade and moisture afforded them.

THOMAS NICOL.

CLIMBING PLANTS AND HOW WE USE THEM.

By close training upon wall or fence we lose more than half the grace of climbing plants, as they are never so beautiful as when permitted to grow and flower with unrestricted freedom. It is very desirable that all bare walls should be perpetually clothed with foliage, but hitherto when this has been done we have ceased to use climbers further, and have missed the true idea, or the prettiest way of using them. By the roadside I often see hedges wreathed in Honeysuckle, Convolvulus or Hops, and our wild Clematis climbs to the tops of the



Balfour House, near Markinch, Fifeshire, N.B., from the west. Engraved for THE GARDEN from a photograph.

and mother of Mr. Wemyss, of Wemyss Castle. Historically, it is linked to interesting scenes in Scottish history. The house is a grand building, and has within the last thirty years been improved and added to by the late Admiral Bethune, who saw much service in Chinese waters. His ancestors, Colonel Bethune and others, like himself, did much to improve the estate. Cardinal Beaton (the name is now spelled Bethune), the "bloody cardinal," the prelate who during the Reformation rejoiced over the burning of George Wishart, the martyr, at St. Andrew's, and who was afterwards murdered in his castle at St. Andrew's, was owner of Balfour. Two portraits of the cardinal are to be seen at Balfour, as well as a very pretty original one of Mary Beaton, one of the four Maries attendant on Mary Queen of Scots, and commemorated in the pathetic fragment of "The Queen's Maries," published in Scott's "Minstrelsy of the Border," vol. ii., p. 151.

nut sweep the Grass. The entrances to Balfour from the public roads are from the east and west, and are well kept. The flower garden in front and near the house is laid out with scrupulous care and taste. Against the wall of the house, Roses, Jasmine (yellow), Magnolias, and suitable climbing plants occupy prominent positions, while evergreen shrubs dot the spaces in the garden in front, and even in winter give forth an air of summer's sweetness. A little to the west of the house splendid specimens of Rhododendrons, Lilacs, Hollies, Araucaria imbricata, Wellingtonia gigantea, Cedrus Deodara, &c., may be seen. The kitchen garden is to the west of the house and is well sheltered. To the north it is flanked by tall trees outside the walls, which afford ample shelter. The borders along the walks are well filled with herbaceous plants, while rows of Crocuses give forth a bright glow in spring. On each side of the walk running north and south a collection

highest trees and veils their branches in beauty. Similarly in gardens we might garland hedge, bush or tree, if only we take a little trouble to establish the climbers by giving them a good start, and there would be no need for restriction. There are about most gardens common trees and shrubs upon which this idea could be easily carried out, and the gain in interest and beauty would be great. Any isolated tree or shrub is the best adapted for the purpose, for it would be useless to plant creepers in the average shrubbery where things are already choking one another to death. By selecting a suitable tree a hole can be dug as near the stem as possible, the climber planted, and encouraged to grow by the addition of a little fresh soil. A little early training is necessary till its growth reaches the branches, when it can be left to take care of itself, which it will do. Tall trees might have their naked stems clothed, as I have seen them occasionally, with Honeysuckle, Jasmine, and Clematis. Moreover the extension of the idea would permit of the use of many other things that are far too rampant, according to our present ideas of climbers and

our ways of using them. I was once rambling around some grounds of a large garden late in autumn when I came upon a great Hawthorn enshrouded with a Vine whose foliage was crimson and yellow, whilst the amber leaves and crimson haws upon the Hawthorn made up a colour combination beautiful beyond description. Again, how pretty must this be in spring when the Vine has its fresh green leaves, and the Hawthorn its clusters of sweet white flowers. This example suggests a good use for many of the wild Vines so handsome in foliage, but rarely seen in gardens.

The Clematis family is quite a host in itself for this purpose, especially such kinds as *C. montana* and *flammula*. The latter I once saw upon a large Holly, and from a height of 40 feet down to the ground it hung like a white sheet, so profusely was it blooming, whilst its delightful fragrance pervaded the air for a long distance around. *C. montana* upon a Yew tree makes a charming picture quite early in the year, and *C. graveolens* in late autumn is equally as pretty; in fact many of the species of Clematis that have not come into general cultivation would be sought after and grown when such a happy way of using them had been discovered and carried out.

The Honeysuckles, again, are quite a large family, and if we would enjoy their fullest beauty we must permit them to grow unrestricted. Early in the present year I noted the effect of an *Aristolochia* upon a Laburnum, and the contrasting forms of leaf have been pretty the whole season, long after the flowers of both had passed away. Many of our vigorous climbing Roses that resent restriction would be quite at home rambling over a tree. Even the good old Gloire de Dijon will take care of itself, as I once saw it monopolising an old Apple tree, and growing and flowering to such an extent that the Apple tree had very little chance of doing much good. The cluster Roses, so rampant and so free, must disport themselves upon tree or shrub to develop all their grace and beauty. Such kinds as Mme. d'Arbly, Adelaide d'Orleans, or Ruga will cover a low tree or shrub, and in their season make it a perfect mound of blossom. Some of the fine Rose species of climbing habit, such as *R. Brunoniana* and others, could be put to good use in this way, although they are rarely seen in gardens.

These random suggestions show that there is an abundance of vigorous climbers that can be used in a free way, and it is to be hoped that our garden planters of the future will pay greater attention to the beautifying of gardens in this way, as the less formality and the more natural beauty we have in and about them the more interesting and tasteful they will be. A. H.

FERNS.

W. H. GOWER.

ADIANTOPSIS.

THE specimen received from "Ireland" is not now recognised as an *Adiantum*, although in the old times it was known as *Adiantum radiatum*. Fée, however, who was a professor of botany at Strasburg, and a great writer upon Ferns, established the genus *Adiantopsis* for this and some few species having smooth fronds and a special reniform or sub-rotund indusium. The majority of authors have adopted it as a sectional name for *Cheilanthes*. Moore, however, adopts the genus of Fée in his "Index Filicum," and so also I adopt it here, as I consider the plants have a very distinct appearance, although they are nearly related to the family *Cheilanthes*. There are a few pretty and distinct plants included in this group, and the kinds here named I have had in cultivation myself, and, therefore, am able to vouch for their beauty; at the same time I have found that a little care is required in their culture. In the first place, they must not be overpotted,

and the drainage requires special attention. The soil should consist of good fibrous peat and light turfy loam, made fairly sandy. I was always most successful in their culture when I mixed pieces of limestone with the soil. They do not like syringing overhead, although a liberal quantity of water is necessary to the roots as well as in the atmosphere. Most of the species enjoy stove heat.

A. CAPENSIS.—This plant is a native of the district about the Cape of Good Hope, and up to the present time I do not think it has been found elsewhere. It is usually considered a greenhouse Fern, but I have always found it thrive better if treated to stove temperature through the autumn and winter months. It has a creeping rhizome and a reddish brown shining stem, the fronds being somewhat triangular in outline. The plant has always been rare in cultivation, and I have never seen it with fronds more than 8 inches or 9 inches long.

A. PEDATA.—This is a plant with a tufted root and black slender stems. The basal portion is somewhat in the way of *A. radiata*, whilst the other portion resembles *A. spectabilis*. It is a rare and handsome plant, growing about 1 foot high, the segments being deep green and fertile on both edges. It comes from Jamaica.

A. PTEROIDES.—This is an old plant in gardens, having, it is said, been introduced from Cape Colony upwards of a hundred years ago. It is the strongest and most robust species that I know, making fronds each from 1 foot to 2 feet high. It has frequently been said that it will thrive in the greenhouse, but I have always found it succeed best during the winter months in a cool stove.

A. RADIATA.—This is the species received from "Ireland." The specimen only measures 7 inches long and bears five divisions to the frond, which radiate from a common centre like the spokes of a cart-wheel. It will, however, grow bigger, as I have had it with fronds about 15 inches high and 7 inches across, with seven and nine radiating pinnae. The stem is jet black and polished, the pinnae varying from 2 inches to 5 inches in length, the upper and central one being always the longest. It is found in various parts of America and the West Indian Islands.

A. SPECTABILIS.—In this plant we have one of the most handsome Ferns for a hanging basket that it is possible to grow, and I am surprised that it is so seldom seen in collections. Twenty years ago it was much more frequently to be met with. Its fronds grow from 2 feet to 4 feet in length, the stems being slender, jet black, and shining. It is an evergreen plant of great beauty, and comes from Brazil, &c.

Gymnogrammas.—"H.L." asks if these plants naturally die down in winter. They do not, but unless you keep a very strong heat, you will lose a great many fronds, and if you have old plants they become very scrubby and rough looking. I like to keep these plants somewhat drier in winter than in summer and to maintain a strong heat, that is to say, a stronger heat than is usually kept in a stove.—G.

Adiantum farleyense.—I saw the original plant soon after its arrival. In THE GARDEN, December 14 (p. 509), *A. farleyense* is thought to be barren. I only know that Mr. Miles [Whose letter appears below.—Ed.] raised hundreds of seedlings from the original plant, but though many of them were very much like the original, none were, I believe, perfectly so. Some varied considerably, some less.—MRS. FRANCIS WARRE.

I have been requested to write you the true account of the introduction into England of the *Adiantum farleyense* Fern, hence the reason of my troubling you with this letter. It originated in the gardens of Sir Graham Briggs, Bart., of Farley Hill, in the island of Barbadoes, from the mixing of the seeds of a Maiden-hair Fern and another Fern which was growing near it. This was told me by Sir Graham Briggs himself, who was in the habit of

sending Wardian cases to my brother, Mr. Hill, of 21, Grosvenor Place. I cannot tell you the exact date of the year in which it arrived, but the original plant was exhibited at the great International Flower Show in July, 1865, when it measured between 4 feet and 5 feet in diameter; it was therefore a few years before that date that Sir Graham Briggs sent over two cases of plants, in one of which was *A. farleyense*, which he requested might be sent to me. My brother forwarded these two cases, one to my uncle, Mr. Daniel, of Stoodleigh, Devon, and the other here. The former proved to be the case containing the *farleyense*, and Mr. Daniel sent the plant here according to request, but in this manner it was given to the two houses at the same time.—M. S. MILES, *Burtonhill, Malmesbury.*

ADIANTUMS FOR THE COOL FERNERY.

OF the great number of beautiful species there are comparatively few which succeed well in a low temperature; even the hardy sorts require a little warmth to keep the fronds fresh and green during the winter. *Adiantum Capillus-veneris* and its allies are all valuable at any season of the year, but more particularly so during the winter, when they may be employed with advantage where the more tender sorts cannot be used. The normal form, which is found growing wild in some parts of this country, is not nearly so much grown as it deserves to be. It is particularly serviceable for planting on the rock fernery, the creeping rhizomes spreading over the rocks and forming patches of fresh green fronds, where scarcely anything else could be established. It will also spread and cover walls in a cool conservatory in any shady nook or corner, where the walls are just moist enough to favour root growth. As a pot plant it may also be recommended. With a temperature a little above freezing and a fairly moist position, it will continue to grow throughout the year, and the rhizomes will spread and grow over the outside of the pots.

A. C.-V. IMBRICATUM.—This, exhibited at the last meeting of the Royal Horticultural Society, and awarded a first-class certificate in October, 1886, is one of the most beautiful varieties I have seen. At a short distance it might be taken for *A. farleyense*, but on closer inspection its identity is revealed by the spreading rhizomes, some of which were growing over and rooting on to the outside of the pots. The fronds are bipinnate, the lower pinnae having from nine to twelve large, nearly palmate pinnules which are irregularly cut down into narrow segments. The frond which I have has imperfectly developed spore cases very similar to those I have occasionally seen on *A. farleyense*. The plants exhibited had been grown in an orchard house, where this form first originated among a batch of seedlings of *A. Capillus-veneris*. It will grow in a cool house as freely as the type. As we have so few good *Adiantums* which succeed well under cool treatment, this beautiful variety cannot be too highly valued.

A. MARIESI.—This is also considered a variety of *Capillus-veneris*. It is very distinct in general appearance, having larger fronds, which grow erect and attain to about a foot high. The pinnules are large and of a deep glossy green, the spore cases being very conspicuous. The spreading rhizomes and the bluish tint in the stipites are the characters which connect it with the type. It is one of the most beautiful and distinct of all the Maiden-hair Ferns, and cannot be too well known. This variety is also grown under the name of *A. Rapiere*.

A. O'BRIENI is closely allied to the above, differing only in having smaller and more wedge-shaped pinnules, which are more distant and not quite so stiff. I believe this variety was introduced from South Africa. Both of the above should be kept in an intermediate temperature during the winter, for although they are nearly hardy, the fronds will go black as soon as the temperature falls too low.

A. C.-V. CORNUBIENSE is a very pretty variety, with smaller and more spreading fronds, the pinnules being deeply cut and of a bright fresh green.

A. C.-V. *MAGNIFICUM* is another pretty variety, somewhat similar to the last, but with more substance in the fronds.

A. C.-V. *DAPHNITES* has rather small erect fronds, the pinnules being irregular in size and shape, the ultimate ones being larger and sometimes crested.

A. C.-V. *FISSUM* is a distinct variety with small erect-growing fronds, the pinnules being cut down into narrow segments. It is most remarkable for its curiously distinct character.

A. *WILLIAMSII* may also be recommended for the cool fernery. This beautiful Fern is often spoiled through being grown in a high temperature. When grown on in cool greenhouse temperature it is one of the best Ferns we have for winter use either for cutting from or for growing in the fernery, the pale green fronds contrasting well with the dark green ones of the previously mentioned sorts.

A. *FORMOSUM* is another beautiful Fern, which does not receive the attention that it deserves. When well grown it is most effective, growing 2 feet or more in height, the large spreading fronds forming a nice background for the smaller Ferns. Like all the preceding, this has spreading rhizomes, and may be readily increased by division. The plants should not be disturbed while they are dormant. After they are well started into growth in the spring they may be broken up, and with proper care very few fronds will be lost. The roots being active they will soon take hold in the new soil, and plants will start away and soon re-establish themselves.

R.

POLYSTICHUMS.

THIS genus includes some very desirable species and varieties, some being quite hardy, and all succeeding well in the cool fernery. Although not extensively grown for market, several of the species may be recommended as being particularly serviceable for ordinary decoration, the thick coriaceous texture of the fronds and their hardness rendering them of value where the more tender Ferns cannot be used. All the *Polystichums* like a shady position. The hardy sorts may be grown in pits, and those which require protection from frost may be kept in an intermediate temperature. Although *Polystichums* like a shady position and a moist cool bottom, they should have as much light as possible and plenty of top air. The spores of *Polystichums* do not germinate so quickly as those of many other Ferns, and consequently are often over-run and destroyed by those which spring up as weeds. Care should therefore be taken that the spores are saved from fronds that have not come in contact with the free-growing *Pterises*, &c. A few of the sorts may be more readily propagated from the little bulbils which are formed on the fronds. Where these little bulbils appear the fronds may be pegged down on some suitable soil and nice little plants established before they are separated from the parent fronds. The *Polystichums* should be potted in good mellow loam, with the addition of a little leaf-mould and sand. After the pots are well filled with roots the plants will require plenty of water, but should not be kept saturated, and a little liquid manure or fertiliser may be used while the plants are making new fronds. Although the matured fronds are of good substance and stand well, yet when young they are very tender and easily damaged. The following are among the best and most useful sorts:—

P. *CAPENSE* is a distinct species with thick scaly rhizomes; the fronds have rather long stipites and are nearly triangular in outline, being three or four times divided, deep green, with a bright shiny surface and of a thick leathery substance. This species requires greenhouse treatment, and may be grown from spores or divisions; seedlings make the best plants.

P. *CORIACEUM* is identical with the above, but they are sometimes given as distinct species. P. *coriaceum* is the West Indian form, and may perhaps have rather larger fronds than the South African form, P. *capense*.

P. *SETOSUM*.—This is a very pretty species from Japan; it has some resemblance to our native P. *angulare*; the fronds are rather broad and short and prettily recurved, rich deep green in colour, and with

a bright shiny surface. This species must be increased from spores, and should be grown in a cool, open position.

P. *LASERPITHIFOLIUM* is another beautiful Japanese species; it has large spreading fronds, which are tri-pinnate, the pinnules being small and somewhat distant, giving the fronds a light and elegant appearance. This species is also known as *Lastrea Standishi*.

P. *VIVIPARUM* is a desirable species from the West Indies. It should be grown in rather a higher temperature. Young plants may be obtained from the bulbils, which are produced on the rachis of the older fronds.

P. *TRIANGULARE*.—An elegant Fern, with long, narrow, pinnate fronds, the pinnules being triangular in shape. P. *t. laxum* is a good variety, with larger and more spreading fronds; these also produce bulbils on the older fronds.

P. *MUCRONATUM* is another useful species; it has broader fronds than the last named. It should be grown in a little warmth, and requires careful treatment.

P. *MUNITUM*.—Of the hardier sorts, this is one of the best.

P. *TSUTSINENSE*.—This has rather small greyish green fronds, and forms a compact and pretty little plant.

P. *ANGULARE*.—There are numerous varieties of this indigenous species, some of which are very showy. P. *a. plumosum*, one of the best, has large erect fronds, and is very useful for decoration.

P. *ACULEATUM* is another very useful hardy species, and when grown in a cool house makes a handsome plant.

F. H.

CHOICE ADIANTUMS.

IN these days, when every part of the globe is being ransacked for Orchids, other plants must be met with which would certainly be worth sending home. Ferns in particular, now that they are again becoming popular, would be of value, and I wish to draw attention to a few *Adiantums* which are most desirable, in order that travellers may know what to look for, and that persons resident on these spots may gather and send home.

A. *PARISHI* is a pretty little dwarf Fern with entire reniform fronds which are each from half an inch to an inch broad, borne upon slender black stems about half-an-inch high, the whole plant forming neat little cushions or rosettes. This plant I have received time after time from Burmah, where it grows in the neighbourhood of Moulmein, but the specimens have always reached me dead. This plant appears to grow in the clefts of calcareous rocks, and I think if these were cut out in sufficiently large pieces and carefully packed, better success would attend the efforts to introduce it in a living state.

A. *CALCAREUM*.—This is a singularly beautiful species which is found in Brazil in similar situations to the last named. It is a plant that would form a beautiful basket ornament, its stems being very slender, pendent, and frequently rooting at the ends, and becoming viviparous. The pinnæ are semi-opposite, fan-shaped, or semi-circular, divided into numerous lobes, each lobe carrying a single sorus on the edge, whilst the surface is smooth and bright green.

A. *THALICTROIDES*.—This species is by some considered the same as A. *æthiopicum*, but of this plant I have a form gathered by Wendland during his Central American journey which is very different to the type. Its fronds are each from a foot to 18 inches high, with jet black shining stems three times divided, the segments dense, very little lobed, but toothed on the upper edge, and of a deep glaucous hue on both sides.

A. *FLILIFORME* is a slender growing species from the neighbourhood of Oeiras, in Brazil. It is suitable for small baskets, having long slender stems, which are of a deep purplish-black, rooting at the points and becoming viviparous. It is said to be nearly allied to A. *lunulatum*, but I am not aware if it, like that plant, becomes deciduous.

W. H. G.

Lomarias (J. McCoy).—Your plants are certainly wrongly named. The fronds sent and marked No. 1 are not those of L. *gibba*, but of L. *nuda*, which is a species from New Zealand entirely distinct from L. *gibba*. It is quite as beautiful, although somewhat slower in its growth. No. 2, named L. *crenulata*, is certainly L. *lanceolata*, the former a native of Chili, the latter of Australia and New Zealand. They are quite distinct in their general appearance. The Chilean plant produces a quantity of underground running stems. The plant you have under the name of L. *dura* is L. *discolor*. L. *dura* is still, I believe, very rare in cultivation, and was, if I remember rightly, brought from the Chatham Islands many years ago by Mr. Watson, of St. Albans, but whether ever imported since I cannot say; certainly I do not find this species recorded in any of the principal Fern lists in the trade, so I suppose it is not to be had.—W. H. G.

ORCHIDS.

W. H. GOWER.

NORTH AUSTRALIAN DENDROBIUMS.

IN alluding to these plants I do not include all the species from Australia, for some of the antipodean kinds are easily grown, amongst which may be named D. *speciosum*, D. *Hilli*, D. *æmulum*, D. *Johannis*, D. *tetragonum*, nor the elegant white-flowered species D. *linguæforme*. The flowers of D. *linguæforme* are produced in this country in mid-winter, and the sprays of bloom are each from 3 inches to 6 inches in length, bearing from nine to eighteen narrow-petalled pure white flowers, which are extremely useful for button-hole sprays. It is to none of the above species I refer here, but to a set of plants of great beauty. These have for many years been a source of trouble to Orchid growers, but when well done they are very useful and ornamental. I refer to plants of the D. *bigibbum* section and its near allies. D. *bigibbum* is a plant which has long been known and attempted to be grown, but it did not remain long amongst our living plants. Of late years, however, its wants and requirements have come to be better understood, and the plant has become a permanent resident. Only last week a magnificent spike of bloom of this plant came to me from Mr. Cypher, of Cheltenham. He says it does well with him, and he raises fine plants from the young ones formed on the top of the old growths.

I am of opinion that all the plants here enumerated require thorough drainage, good hard potting, abundance of water during the growing season, and very strong heat and exposure to the full sunshine. Under this treatment D. *superbiens* grows well and flowers for about three parts of the year. To the same treatment I recently observed that the new kind lately exhibited before the Royal Horticultural Society by Mr. Sander, of St. Albans, and named D. *Statterianum*, is subjected. D. *Statterianum* appears to be very nearly allied to D. *Phalænopsis*, but the flowers are much deeper in colour and the lip is smaller. All these species of *Dendrobium* are partially deciduous and flower very freely.

D. *BIGIBBUM* is a plant with erect stem-like pseudo-bulbs, and bears near the top numerous deep green leaves. The raceme produced from the upper joints of the stem is a foot or 15 inches long, and bears from six to twelve large, round, showy flowers, which are of a rich purplish magenta with a deeper lip, the great and distinguishing feature of this species being the pure white papillose crests. This species was first found on the north-west or tropical mainland of the Australian continent, but more recently it has been found on various islands in the Torres Straits, and it is the plants from this

island which are thriving with us now so well under cultivation. A coloured plate of this species was given in THE GARDEN, Vol. XXIII. (p. 290).

D. GOLDIEI.—This is a very rare kind, which came home with *D. bigibbum* or *D. superbiens*. Prof. Reichenbach named it in compliment to Mr. Goldie, who sent it home from Torres Straits whilst collecting plants for Mr. B. S. Williams, and a coloured figure was given in THE GARDEN, Vol. XIV (p. 244). In growth it resembles *D. bigibbum*, but its flowers are more acute and of a rich vinous-purple, the lip being long and narrow, stained with a deeper hue at the base, and destitute of the white disc which is such a distinguishing feature in that species.

D. PHALÆNOPSIS.—This species resembles the above-named plant in growth, but its flowers are nearly double the size, and in shape they are identical; the sepals and petals purplish mauve at the edges, with a broad central band which is much paler; the lip is a rich magenta, veined with rosy-purple, and stained at the base with deep maroon; the side lobes are deep rosy-purple. It blooms at various seasons.

D. STATTERIANUM.—This new form is a superb species, although very closely allied to the preceding, in my estimation. Its flowers are wholly of an intense deep rich magenta-purple throughout, the lip smaller than in *D. Phalænopsis*, the front lobe very deep rosy-purple, the side lobes and base of the lip dark maroon. It is flowering now in profusion with Mr. Sander.

D. SUPERBIENS.—This plant, I believe I remarked a short time ago, was flowering in profusion in Messrs. Williams and Son's nursery, and it was sent them from Torres Straits by their collector, Goldie. It resembles all the others in growth, and flowers freely. The sepals and petals, not so round as those of the other species, are of a rich deep rosy-purple, the lip being deeper in colour, and bearing several raised lines or ridges in front. It comes from Torres Straits and North Australia.

D. WILLIAMSIANUM.—In this plant we have the finest of all this set of plants. It was introduced by the Messrs. Williams from New Guinea through their collector, Goldie, and is more slender in its growth than any of the previously-named kinds. The flowers are large, measuring each upwards of 2 inches across; sepals and petals broad, slightly incurved, white tinged with a shade of mauve, the inside of the lip being of a deep rich maroon-purple. This superb plant unfortunately still remains very rare. It bloomed in the month of July, and will, no doubt, as it becomes stronger, flower at various seasons.

Lælia Gouldiana.—This new *Lælia* is now flowering beautifully in Sir Trevor Lawrence's garden at Burford Lodge. It is perhaps the finest example which has yet been seen, bearing ten spikes and forty flowers, these flowers being of a rich deep crimson colour. I believe this plant has been credited with being a natural hybrid between *L. autumnalis* and *L. anceps*, and I would advise some of our Orchid hybridisers to prove it.—H.

Lælia amanda.—This beautiful plant, which has large and chaste flowers, was, I believe, first introduced to this country by Mr. William Ball, and it is sometimes labelled *Cattleya Rothschildiana*. The petals are nearly 5 inches across, the colour of the flower being bluish tinged with pink, the lip deeper coloured. It comes from Brazil. This beauty is now flowering in Mr. Haywood's garden, Woodhatch Lodge, Reigate, where the collection under Mr. Salter's management is in excellent condition.—G.

Odontoglossum Hunnewellianum.—This species, somewhat recently introduced by Mr. Sander, St Albans, is now flowering in the collection of Mr. Measures, The Woodlands, Streatham. It is a pretty, somewhat small-flowered species, the flower in question measuring 2 inches across, which is just the size of that of the native specimen. The sepals are broader than the petals, plain at the edges. They are yellow transversely barred with deep chestnut at the base, barred in the upper half

in the same way as the petals; lip broadly oblong, fringed round the edge, white, blotched in front with chestnut, crests white, with numerous dots of chestnut at the base. In growth the plant resembles *O. Alexandræ*.—H.

Saccolabium bellinum.—A fine variety of this species is now blooming in the collection of Sir Trevor Lawrence and bears eight flowers, the sepals and petals yellow, heavily spotted and barred with chocolate, the saccate lip white, much spotted in the interior with rich crimson-lake, the front fimbriated lobe having a blotch of yellow, with a few spots of a deeper hue. It is one of the most beautiful and fascinating gems in the genus, and it appears to grow without much trouble.—G.

Lælia autumnalis alba.—This variety has just been sent me by Mr. Swan, gardener to Mr. G. C. Raphael, Castle Hill, Englefield Green. The blooms are medium in size, and when the plant becomes stronger they will doubtless become larger. The blooms measure 3 inches across the petals, which are each obovate, much broader than the sepals, and have slightly waved edges, both these and the sepals of the purest white; lip three-lobed, the side lobes standing erect beside the column, but not enclosing it, pure white, front lobe oblong, with a wavy edge, recurved at the tip, white, faintly tinged with pink. The elevated lines which traverse the lip are white stained with pale yellow in front; column pure white. This is certainly one of the choicest gems one could have to close the year with.—W.

Vanda Amesiana.—The new form of this plant is now flowering in the Burford Lodge collection, Dorking, and it proves to be much inferior to the typical plant figured, although it appears to be larger and freer in growth. The flowers are about the normal size, pure white, without a shade of colour, and the lip is three-lobed, the side lobes white. The front lobe, reflexed at the sides, is white, stained with mauve, save on the two prominent ridges which traverse the centre, and slightly stained with orange on the base of the column. It is a very pretty plant, but not equal to the kind which flowered first, and was sent to Mr. Ames in America.—W.

Warscewiczella discolor.—This pretty kind is now flowering in Messrs. Williams and Son's nursery, and I am glad to find that *Warscewiczella*s appear to becoming favourites at this establishment, as several species have been flowering lately. The plants grow and bloom freely, and they are treated to strong heat and all the light possible, but they are not subjected to much sunshine. They are given an abundance of water during the growing season, and at no time are the plants allowed to become quite dry. The flower in question is green in the sepals and petals, and the lip is blue in the centre, with a broad white frilled border. It is a great beauty, which should meet with more attention at the hands of growers, or some day we may find many of these beautiful plants extinct, and no longer to be obtained in their native country.—W. H. G.

Calanthes.—These are rightly very popular, even in places where but few other Orchids are grown. They bloom principally during December and January, or at a time when too many flowers cannot well be available. A shelf near the glass in a well-heated house is the best place for growing them, but when in flower they are not very attractive, even if much of the foliage still remains fairly green. Intersperse them with a bank of Ferns, notably *Adiantums*, and the effect is almost magical. There are three distinct forms of *C. Veitchi* suitable for the back and centre of a group or bank of Ferns, while the very distinct forms of *C. vestita* drape beautifully over the front, and contrast well with the more erect pink or red-flowering forms behind. More gorgeous banks of Orchids and Ferns may be formed later on, say in April and May, but not more generally beautiful and pleasing ones. After the *Calanthes* have done good duty, either in a moderately warm house (the best place in which to keep them) for a month, or even longer, the principal

portion of the spikes is still very suitable for using in a cut state. They are very effective in vases, especially if mixed with white flowers only, and the *Veitchi* section are admirably adapted for dinner-table decoration, the spikes being laid carelessly on the cloth. The compact flowering variety is also suitable for ladies to wear, but the two forms of *C. vestita* are even more desirable for a similar purpose. One or two spikes, tastefully intermingled with neat and prettily-coloured Ivy leaves, with a background of Maiden-hair Fern, form a spray any lady might be pleased with. Single flowers of either section are frequently used in the formation of button-holes, but I do not recommend them for this purpose.—W. I. M.

Cattleya luteola.—It is now about forty years ago since this small-flowered species first came into cultivation. My first acquaintance with this species was in 1856, when it was obtained from the Messrs. Rollisson's nursery at Tooting, this firm at that time having imported a considerable quantity from Brazil. The plant, however, never became popular and nearly died out, appearing not to thrive well. This, I believe, arose from its being too freely exposed to the sun and light, for I have found that this species enjoys a shady situation, and under cultivation it usually flowers during the winter season. A beautiful little specimen in full bloom may now be seen in The Woodlands collection at Streatham. The sepals and petals are nearly equal, clear straw colour, the lip three-lobed, rolled over the column at the base, the front lobe crisp at the edge and clear rich yellow. This plant has been variously named in gardens *C. Holfordi*, *C. Myer*, *C. flavida*, and *C. Modesta*.—W. H. G.

Masdevallia towarensis.—In the report of the last meeting of the committees of the Royal Horticultural Society reference was made to the extreme usefulness of this desirable species of *Masdevallia*, and most undoubtedly a correct estimate was given of its worth. It is by no means a showy Orchid as far as single flowers go—in fact, being, in common with all the *Masdevallias*, more quaint than beautiful, but it is wonderfully free-flowering, and at its best in December or at a time when the demand for cut flowers is exceptionally heavy. To meet this demand, Mr. Cypher, Cheltenham, grows, among numerous other serviceable plants, an extra large batch of the *Masdevallia* under notice, all being, whether in 2½-inch pots or in very much larger sizes, crowded with flowers. Quite tiny plants produce a dozen or more spikes, while large specimens are furnished with hundreds of twin-flowered and in some instances triple-flowered spikes. The flowers are suitable for wreaths, crosses and bouquets. The house where they are grown is a small lean-to, with a walled-up end opposite the only entrance, and a staging on each side of the central pathway. It is at this end where the *Masdevallias* seem most at home. What I would term a warm greenhouse temperature and a fairly moist atmosphere are maintained, and no bright sunshine nor cold draughts are allowed to reach the plants. In this snug, yet comparatively cool house, the *Masdevallias* generally seem to grow like weeds, and there are always some in flower whenever I happen to visit the nursery. At the present time, in addition to *tovarensis*, there are also many other *Masdevallias* in bloom.—I.

Windflower or Woodflower?—This discussion, if carried to any conclusive length, would prove too purely etymological for the pages of THE GARDEN. But I must briefly point out to Mr. Miller that the true derivation of plant names—a most difficult subject—cannot be reached by his rough-and-ready method of reference to Pliny and lexicons. If he will kindly read my note more carefully, he will see that I did not derive *Anemone* from the Latin *nemus*, but suggested that it may perhaps be referred to the root *nem*, which is found in the Greek *nemos* as well as in the Latin *nemus*, both words meaning a wood or a grove. I admit that there are philological difficulties, into which I need not enter, in the way of this derivation. But Mr. Miller will find himself in much worse

difficulties if he takes for granted Pliny's explanations of plant names, or the explanations of other ancient expositors. To take the tritest of instances, does Mr. Miller accept the old derivation of *Vaccinium* from *vacca*, a cow? I will not insult his scholarship by propounding the true derivation. Pliny's explanation of Windflower "because it opens when the wind blows" is obviously artificial, as are so many of his explanations. Let me suggest "*Anemone*, quod abhorret a vento," a derivation as good as Pliny's, anyhow. I feel tolerably confident that when the true source of the word *Anemone* is discovered it will be found to have nothing whatever to do with wind. As for Mr. Miller's expansion of Pliny's elucidation (?), I must remark that it must first of all be established that there were regular "vernal equinoctial gales" in Greece, and, secondly, that the *Anemone* bloomed at their time. The Greek writers call it winter-blooming, not spring-blooming. And in reply to Mr. Miller's last paragraph, I may point out that one of the latest discoveries of philological scholarship is, that there is much more connection than has been supposed between the languages of Northern Europe and those of Italy and Greece.—G. H. ENGLEHEART.

FLOWER GARDEN.

FINE-FOLIAGED PLANTS AT THE COTTAGE, KINGSWEAR.

SUBTROPICAL gardening can probably be pursued under no more favourable circumstances on the mainland of England than on the north-eastern bank of the estuary of the Dart, the mild South Devon climate being here supplemented by a maximum of sunlight and an entire immunity from the evil influences of the north and east winds. The accompanying photograph of a few fine-foliaged subjects bears out more or less the foregoing remarks. On the left hand is *Funkia Sieboldii* backed by *Phormium tenax variegatum*, both of which plants have been in position for four years. On the right, in the foreground, are *Canna Auguste Ferrier*, a fine dark leaved variety, and *Datura suaveolens*, while further up the border, *Canna iridiflora Ehemanni*, a very striking variety, and *C. gigantea*, *Dracæna indivisa* and *Agapanthus umbellatus* are interspersed with *Irises*, *Gладиoli*, and *Sunflowers*, the whole being carpeted with dwarf growing plants. All of the above-named stand the winter out of doors in this locality, but it has been found desirable to house the *Datura*, as otherwise its flowers are formed too late in the season to open with any degree of certainty. The wall is covered with large-flowered Clematises in six varieties, *Abutilon Boule de Neige* and *Lapageria alba* and *L. rosea*; the three last having now spent three winters in their present position, are flowering well. In another part of the garden, *Plumbago capensis*, which is trained against a wall and has been out for two winters, is doing well, and bore this autumn a crop of over 200 flower-spikes.

WYNDHAM FITZHERBERT.

Hollyhock disease.—Is there any cure for this pest? The above question was asked and answered in the columns of THE GARDEN several weeks ago, but I derived little consolation from the advice given, viz., "not to grow them for a few years." In my case the plants have been grown from seed. The seedlings were planted out in May, in an open sunny aspect, in a deep rich loam that had never been broken up within living memory. No other Hollyhocks had been grown anywhere near this place for the last twenty-five years, yet they were all spoiled by the disease before the end of July. I am, however, disposed to give them one more trial, and shall be glad to know if anyone has tried flowers of sulphur as a

preventive. I certainly think there must be some antidote, or there could not be grown such grand flowers as I have seen in the neighbourhood of London. I shall be most grateful for any information on the above before deciding upon my plans for next season.—SANGUINEA.

THE THUNBERGIAS.

THESE pretty plants are usually classed as tender annuals, though seeing they can be had in bloom in the open ground all the summer, would bring them under the head of half-hardy types. Originally introduced as stove evergreen climbers, they are now but little cultivated within doors, but make a charming display in the open. It is *T. alata* and its varieties that are most grown, but owing to their tendency to attract red spider, their culture within doors is but little followed, while there is a growing tendency to make them of value for decoration in the flower garden. *T. alata* has buff-coloured flowers with a black centre. *T. alata alba* has white flowers instead of buff, and still the black centre. *T. alata aurantiaca* has deep yellow blossoms, and also the black centre. The plants make a profuse growth in a suitable soil and bloom with remarkable freedom. The seeds can be sown in bottom-heat up to the end of

bottom heat. In order to provide cuttings it was usual to sow seeds very early in the season, so as to have plants from which cuttings could be taken. They were put into small pots as soon as rooted, and then potted on, giving a slight shift, picking off any blossom buds, and encouraging the production of shoots. The plants flower well in 5-inch or 7-inch pots, according to their size, and when placed in them a wire frame was added, so that the shoots could trail about them and form symmetrical specimens. They should have a good rich light compost and be frequently syringed to keep down red spider.

I can remember the time when fine specimens were grown in pots in this way, and gardeners took pride in vieing with each other in the production of large specimens. Since then so many new aspirants for favour have put in an appearance, that old favourites have had to go to the wall. But it is well to put in a plea for some of these occasionally, so that they be not quite forgotten. There are in our day many neglected plants that are far too good and useful to be utterly forgotten. R. D.

Anemones.—The recent snowfall, though it was not thick, still sufficed to do considerable harm to the leaves of the *Anemones*. This is to be



View in the garden at The Cottage, Kingswear, Devon. Engraved for THE GARDEN from a photograph sent by Mr. W. Fitzherbert.

March, and when strong enough, pot the young plants singly into small pots and grow them on in a close frame for a time. Then gradually harden them off for the open as soon as it is safe to trust them there. They make charming effects in the mixed border if planted singly; and as soon as the plants begin to grow, a few small branches a foot or so in height should be placed round them. The shoots will soon attach themselves to these, and then falling round them make charming mounds that are covered with flowers all through the summer. I have seen them grown in this way at Messrs. Sutton and Sons' Portland Road Nursery at Reading, where they had a delightful effect when covered with flowers. I think if a large bed could be filled with Thunbergias, some planted as suggested, and some trained so as to make standards, a delightful effect could be secured.

Time was when it was usual to see Thunbergias grown as conservatory decorative plants, either from seeds or cuttings, the latter being frequently employed in preference to seedling plants, on the presumption that plants obtained from cuttings bloomed more freely than those raised from seeds. Cuttings strike freely under bell-glasses on a little

deplored, because I have always found that destruction of foliage by snow, or dense fogs, or hoar-frosts, all are more or less injurious, leads to a weakening of the tubers for the season, so that very little bloom results. It would be interesting to have experience of others who grow *Anemones* within the range of snowfalls. In spite of the harm done, however, many of the plants are now throwing up flowers, and only need a few days of fairly fine open weather to induce those blooms to expand. Fine days, followed by sharp hoar-frosts, are not very conducive to the production of flowers in mid-winter in the open ground. Perhaps lifting of the tubers early in the summer, storing in a cool place, and replanting so late as October would prevent that early development of leafage and flowers which is invariably seen when the tubers remain in the ground all the summer. It is just possible that in the former case many of the tubers would die. The great thing with *Anemones*, after all, is to secure a fine show of bloom in the early spring, when the hardest portion of the winter is past, and the point for consideration is how that result may be best secured. It would be interesting to learn the views of the Irish growers, who

seem to have fine shows of Anemones. They are, indeed, beautiful hardy flowers, and yet are not sufficiently hardy to withstand the worst features of our winters.—A. D.

— I was much pleased to see the Anemone noticed in THE GARDEN, Nov. 30 (p. 498). It is, without doubt, one of the finest autumn-flowering plants we possess when treated properly. Why does "S. D." recommend raising the seedlings in heat when they will do so much better raised in the open border and flower quite as early? I have tried both ways, and have to come to the conclusion that to raise these hardy plants under glass where the temperature is above 45° is a mistake. I sow a few packets of seed every spring. The varieties I find the most useful are St. Brigid and coronaria, and I think nothing can surpass them for brilliancy of colour and beauty of form. After trying several ways of raising Anemones from seed, I have found the following to be the best. I choose a sunny border. In March I mark off a bed 4 feet wide and of any convenient length. The soil is taken out to a depth of 8 inches; a good layer of cow manure placed in the bottom, and the soil, which is light and warm, is returned and made moderately firm and smooth. Drills are drawn 2 inches deep and 8 inches apart; the seed is mixed with a little sand or fine dry soil and sown thickly. The bed is then watered and shaded if necessary. Plants thus treated began to flower in August this year and continued until the late frost. There are many buds ready to expand should the weather be favourable.—T. ARNOLD.

CULTURE OF LILIES.

In reference to "Delta's" interesting article in THE GARDEN, December 14 (p. 549), I give my experience of growing Lilies, only in the open ground—no pot work. My experience of some twelve years with *L. auratum* is that the only satisfactory variety is *platyphyllum*. I have found *macranthum* and *rubro-vittatum* last for three years, but sooner or later they fail. Last year I was not so successful as usual with *L. Krameri*, but I have been very fortunate with it. I have had good blooms and exhibited some at the Royal Horticultural Society's Drill Hall gatherings. I have grown as many as seven on a stem, and very frequently have had three or four flowers on one stem. The bulbs of *L. Humboldti* apparently take years to get accustomed to the soil. I thought mine had died, but last year, after having been planted three years, they came up and bloomed fairly—I cannot say well. I have had exactly the same failures, as others, for two years with *L. candidum*. I have tried imported bulbs, in addition to many I have had for years in my garden. The foliage looks good and the plants grow strongly till within about a month of blooming, when something seems to blast the stems, and instead of lovely heads of white flowers, a miscellaneous collection, partly good and partly diseased and blackened, is the result. This summer I have taken up all the bulbs and replanted them. I find *L. Szovitzianum* a splendid Lily for showiness and a grand grower, but the perfume is too strong for the house. *L. testaceum* does very well with me, one clump last summer of about thirty-six bulbs being a grand sight. It is very easily grown and very satisfactory in every way. For autumn, associated with *Anemone japonica* or *Lilium Kretzeri*, *L. tigrinum splendens* is a grand Lily, increasing rapidly if planted in congenial soil. The best white Lily for all purposes is *Kretzeri*, coming late, growing freely, flowering profusely, and being quite hardy.—CHARLES J. GRAHAM, *Croydon*.

— Besides the Lilies mentioned on p. 549 that behave in such an erratic way, there are one or two others that are a great puzzle to me. One of them is the North American *L. Washingtonianum*, though I can never persuade to grow satisfactorily, though I have tried it in different positions and in different soils, all of which have resulted in failure. Dr. Kellogg, who has studied this plant in its native habitats, recommends planting it from 8 inches to 12 inches deep, in a loose, somewhat gravelly, well-drained soil, but though I treated it in this way, no better success attended the venture. The first season after

planting a few flowers opened; then the next year the display of bloom was even less, and after that the plant failed to show above ground. The allied *L. rubescens*, or *L. Washingtonianum purpureum*, as it was formerly called, is just as difficult to deal with as the other. I have had my attention directed to some clumps of the old Orange Lily (*L. croceum*), that behaved in an exactly similar manner to the *L. davuricum* mentioned on p. 549. They had occupied the same position in the garden for many years, and had increased from a few scattered bulbs to large masses or clumps, when, without any previous signs of weakness, only a few small shoots were pushed up last spring, and an examination revealed the fact that nearly all the bulbs had perished. Some of them were completely rotten, while others were only just affected, but even where the disease had attacked but a few scales on one side of a bulb, the latter did not throw up any flower-spike. The bulb thus affected gradually becomes green and moist, in a similar manner to the diseased ones of *L. candidum*. I also lost some bulbs of the dark-flowered *L. dalmaticum* in this way, but have never known the common or white *Martagon* to be affected. Another Lily whose behaviour is somewhat of a mystery is *L. odorum*, or, as it is often called, especially in the catalogues of sales, *L. japonicum Colchesteri*. It is very nearly related to *L. Browni*, with which I invariably succeed; and, curiously enough, I planted a bulb of *L. odorum* three years ago that has done well, while the later ones will not thrive, although they are under exactly the same conditions. In their case the scales seem to decay just at the base, but not sufficiently to be noticed till the bulb is handled, when it will fall to pieces. I am not alone in my experience of *L. odorum*, but as mine were imported bulbs, perhaps with home-grown ones the result might be different.—H. P.

NOTES ON HARDY PLANTS.

Saxifraga valdensis.—Large as the genus *Saxifraga* is and beautiful as the varieties of the encrusted section are, to my mind this is one of the very best of all, and yet some people say it has the great fault of being a shy bloomer. I can well understand that such a property would brand many of the *Saxifragas* as useless, or nearly so, and we should care no more about the favourites, *Saxifraga Burseriana*, *oppositifolia* and others, if they did not flower freely than we do for the shy, but otherwise pretty *sancta*, *juniperina*, &c. It is, however, quite different in this section; the rigid and silvery rosettes lifted into charming little heaps are always pleasing, even without flowers, and besides with some to flower is to die, and with all that produce a spike of bloom there is a liability to decay in our damp winters. The present kind grows very freely, and is in no way fickle in its requirements. In the trade there is some confusion about its name, as under the name *valdensis* I used to have sent me by one noted firm *S. squarrosa*, and to-day I believe the plant goes by several names, such as *S. cæsia major*, *S. cochlearis*, and *S. c. minor*. Doubtless some authority could be produced for each name, and it may be one of those plants about which we have too much authority; but what is of more moment to the lover of pretty alpine plants is the fact that there is not now much difficulty in securing the plant under the name at the side-heading.

Saxifraga oppositifolia.—One likes to look closely at this native species, for under the more favourable conditions of garden culture the little creeping stems have their points furnished with fat buds ready to burst, and the slits of the calyces show rich purple lines, which even at Christmas help to save us from forgetfulness of our gardens. As a typical species this is becoming loaded with names for the varieties or supposed varieties. Perhaps it may be usefully pointed out that by different modes of culture, the quality of the soil, and especially the frequent division of the plant, varying shades of purple and size of flowers may be produced. Nowhere is this plant seen to more advantage than with the nurseryman who happens

to have the right soil for it, and this, together with the fact that in nurseries such plants are divided periodically may account for the superior results, and such as the amateur looks for in vain.

Ferula Linki.—There are some things in the garden which, though they may not actually make a display (as few do) in winter, keep alive our interest and even attract special notice. Under this category come the ornamental Fennels, and especially the large-foliaged sorts, which make a few of their new leaves in late autumn and winter, and which are of the tenderest green and exquisitely cut. I have before referred to *F. communis*, *gigantea*, and others, but during the year I have planted a variety which has reached me under the above name. Whatever its distinctive qualities may be, or whatever its value as a decorative summer plant, I am satisfied with it on the score of its lovely winter foliage. The first young growths may be likened to the leaves of *Asparagus plumosus*, only the *Ferula* is so hardy that foliage is not only developed slowly in December, but the keenest frosts we have yet had (14°) have not hurt it in the least.

Wallflowers.—If the Wallflower is grown in rich soil and the garden happens to be where the rainfall is above the average, the plants will grow quickly and abnormally large in all their parts, and such are less capable of resisting cold than plants grown otherwise. As what I here refer to as abnormal qualities are those most frequently seen, this point becomes a pre-eminently practical one. Wallflowers are largely used in beds of rich soil, and are depended upon for making displays in the spring. Far too often are they found to fail, and the cause generally is from frost. It would be found that if the young plant had been grown more exposed and in poorer soil it might have been of less size, but it would have been more hardy. Even plants that have not been so grown, if set early in poorer and drier soil and rammed hard, would stand frost much better. For spring display Wallflowers cannot be planted out too soon after the middle of September. I invariably find that Wallflowers do better in those gardens where the soil is naturally light.

Androsace lanuginosa.—It is a very common thing for this to die off during the foggy season, and even when, in winter, there are no fogs. All such silky-haired plants as this, *A. sarmentosa*, *Draba aizoides*, the varieties of *Meconopsis*, the woolly *Origanum*, Thyme, several *Achilleas* and others of the hardiest constitution against cold are never safe unless their tops are kept somewhat dry and the leaves just above the soil. We may profitably recall such facts as the greater quantity and much more humid character of the soil of our gardens compared with that of mountain habitats, and we may also take into account that the moisture-laden atmosphere is also charged with other impurities. That being less thin than mountain air, it does not possess the drying up qualities that the alpine plants experience in their native homes. As a proof of this, mouldiness or fungoid growths are rare on these plants in a wild state. Doubtless there are other conditions which afford an immunity from these pests in a natural state, but still the causes named may be worth attention in a practical way. I have always found the free use of dry wood ashes of great help in bringing such plants through the winter. Top-dressing the soil too with gritty material mixed with fine charcoal tends to preserve the stems and foliage which may rest thereon, always of course keeping in mind that by some means the immediate surface be kept dry, covering them over with some sort of shelter that does not obstruct either light or air. It is well known that these plants are otherwise hardy enough; it is the constant wet which simply clogs the hairs and glands until the leaves rot.

Woodville, Kirkstall.

J. WOOD.

The Rock Cress (*Arabis procurrens*) and its variegated-leaved form are well worth growing as winter rock plants. Both are just now in full flower, and although the individual blooms are

small, they are borne in such numbers as to form quite a sheet of snowy white above the lovely pale green carpet formed by the leaves. The type especially is very easily established, and will be found useful for covering old walls, dry banks, and such places, which its creeping branches soon hide, rooting firmly as they go along. The variegated form is also very useful for edgings and such like. Where used for flower beds, &c., the flowers of the variegated form should be removed as soon as they make their appearance.—D. K.

FLOWER GARDEN NOTES.

RETROSPECT.—This, for the present, being the final note under this heading, it is but natural that one's thoughts should revert back to some of the hints given and phases of flower gardening alluded to in the "notes." It is not long since that when the two words "flower gardening" were mentioned the term was understood simply to mean bedding out. This idea has been effectually disposed of, and the term is now by everybody understood to include flowers of every and all descriptions, and so far as my own notions are concerned I include foliage plants also, more especially hardy species, that are as ornamental in winter as in summer. Indeed, this feature of ornamental gardening is, I think, worthy of extension, and by reference to my notes at page 549 it will be seen that some little progress is being made in that direction. But the small coniferous plants there mentioned, that are so effectively doing good duty as all-the-year-round subjects, constitute but a small proportion of the plants that can be made to do service in a similar way. To some of these at various times allusion has been made in these notes, and I will therefore content myself by enumerating only a few of the best, that as regards cost are within the reach of all and so easy of cultivation that the greatest novice should not fail in the attempt to grow them. Pampas Grass and its near relative, *Arundo conspicua*, are invaluable for planting in close proximity to water and low-lying damp positions, where other plants would dwindle and die. *Bambusa Metake* and *Arundo donax* also like plenty of moisture, but shelter from cutting winds is a necessity. New Zealand Flax (*Phormium tenax*) is perhaps the best type of a hardy sub-tropical in the whole range of foliage plants. It is a magnificent plant for isolation on the lawn, and though it revels in plenty of moisture, a swampy state of the soil is fatal to it. The best place for it is on high ground and sheltered from cutting winds. The variegated variety is the most ornamental and the hardiest. *Aralia Sieboldi* does well and makes quite a tree in good soil and shelter. Damp is more injurious to this plant than frost, and a high ground position is therefore a necessity. But two varieties of *Yucca*, *recurva* and *aloifolia*, are desirable as permanent ornamental lawn plants, and, of course, they are both so hardy that they may be planted in any position. Add to these, and the small shrubs named at page 549, the many varieties of Ivy, *Periwinkle*, *Vinca*, *Cotoneaster*, *Pernettyas*, *Fortune's Ilex*, &c., suitable for clothing old tree stumps, banks, drooping over walls and rockwork, and we have an array of hardy ornamental subjects, scarcely second to the best summer-flowering plants, and this, too, at literally no cost of labour other than the first preparation of the ground. To some, I might say to most, gardeners this is a matter of consequence. Other recent and desirable changes in flower gardening that have now for some little time been going on have this year been continued. Lilies, Irises, Narcissi, herbaceous Peonies, Poppies, Gladioli, Phloxes, Pyrethrums, Pinks and Carnations are, from once being the favourites of the few, fast taking the same position with the many, and this increased interest is due in no small measure to the surfeit that we have had of Pelargoniums and what are known as summer-bedding plants generally, not that these are only fit to be relegated to oblivion, but rather that the numbers of some should be reduced, and plants in greater variety take their place. A move in that direction must during the past season have been observed by all interested persons. I allude to the extended use that has

been made of Fuchsias, tuberous Begonias, tufted Pansies, seedling Petunias, Verbenas, Zinnias, Stocks, Indian Pinks, Phlox Drummondii, and other easily raised seedling summer-flowering plants, and there can be little doubt that now the revival has started, the monotony, the gaudy glare, the lack of variety once so prominent are now doomed to extinction, and may the change soon come.

PLANTS IN FLOWER.—What a change ten days' frost has made! Whilst the mild weather continued, open-air flowers were plentiful and in great variety; now I can only count five kinds. They are the yellow Jessamine on a west wall, Wallflowers, tufted Pansies, *Limnathes*, and *Laurustinus*. Old plants of the last are full of flower, better than they have been for years. It may not be generally known that if the flowers of *Laurustinus* be gathered just as they are unfolding, and be placed in water and put in warmth, they open more kindly, are whiter, and do good service as cut flowers intermixed with their own foliage. The large old plants of *Laurustinus* that are facing west are the most profusely flowered; equally good plants facing north are not nearly so fine.

GENERAL WORK.—To make the ground firm around spring-flowering plants that have been upheaved by frost. A thin mulch of Cocoa-fibre would prevent this being necessary, and make the beds look neat and trim. To repair gaps in Box and other edgings, and afterwards "point" over all discoloured and Moss-grown parts of gravel walks, apply a sprinkling of new gravel, and roll repeatedly till firm to the tread. Levelling and renewing bare portions of lawn with new turf, and afterwards in damp weather rolling the entire lawn as frequently as circumstances admit of its being done. Winter treatment of this description never fails to produce a fine sward. W. W.

TRENCHING.

MORE seasonable work than deeply trenching a considerable area of ground at this time of the year can hardly be found for unskilled labour. Happy indeed is the man who has looked forward for weather contingencies and has spread a thick dressing of long manure over the ground so to be moved before frost sets in, as in that way work can be found for labourers. I get a good breadth of vacant ground trenched every winter. The labourers like it, as they can keep themselves warm, and it is far more profitable than is some of the work found in hard weather and a long way better for both employer and employed in the end. Trenching soil deeply adds to its fertility fully one-third, and is often found more serviceable than a dressing of manure. Soil may be so heavily dressed with manure from time to time, that it becomes manure-sick. Trenching is not an essential work every year; indeed, if it can be done once in four or five years in large gardens very much indeed is accomplished. It is well to make a note for reference each winter of what area of ground was trenched, as it is not possible the exact spot moved at such a date can be accurately remembered after two or three years have elapsed. We are very often warned, with a grave shake of the head, against the danger of bringing up to the top any of the subsoil. It is a good thing the worms have not been afraid of the consequences to man thus often prognosticated, or the ground would not have been so productive as it is. In trenching we do but ape the worms, which in their unobtrusive way aerate the soil by constantly opening up tiny channels through which the air as well as moisture can pass, whilst also bringing soil from a depth to the surface. If we will but bring up only 1 inch thickness of the subsoil each trenching, in time the whole of the crust of the earth to a depth of 2 feet at least will become fully incorporated, sweet, and fertile; then with the bottom well broken up also, we have fertile soil deep enough for anything. We may in trenching bury down any refuse. Even that dread weed, Couch Grass, is a most fertilising

product when buried some 12 inches to 15 inches below the surface. Those of our market growers, such as Mr. Poupart, of Twickenham, who grow some ten or twelve acres of Celery yearly, practically trench their ground constantly, but too many market growers are content to cultivate their open ground by means of the plough only, and then when hard weather comes the labourers are standing idle. Far better would it be to trench a few acres every winter, because the extra products extending over the ensuing six years would far more than repay for the labour involved, and the trenching would keep men who had worked hard all the summer in satisfactory occupation during the winter. A. D.

STORING ICE.

A REGULAR or all-the-year-round supply of ice is considered indispensable in innumerable public and private establishments, and there is every probability of the demand increasing. In spite of the greater and more widespread use of ice, there is yet less of it stored in private places than formerly—at least such is my experience, and the reason for this is not far to seek. Probably the most general cause of the discontinuance of storing ice is the fact that it can now be bought at a comparatively cheap rate from any good fishmonger, and the ice thus obtained is also of a better quality than much that is saved privately. The latter assertion may not at first sight be acceptable to many of my readers, but I maintain that the imported ice is obtained from purer sources than are available to help the gardeners who store ice in this country. Originally the imported supplies were principally drawn from Wenham Lake, near Boston, U.S., and these gained a good reputation in this country. Latterly, the ice supplies have been obtained from Norway, a country famous for its lakes of pure water. Costing less to import, the prices have naturally fallen considerably, the result being a great increase of imports. About the year 1854 it was estimated that only 2000 tons on an average were brought into this country, but at the present day the quantity averages a little over 100,000 tons. In how many instances is the ice competing with this, or saved in England say, of a character fit to use in any way thought desirable? It should be remembered that ice is not merely used in refrigerators for cooling purposes, but large quantities are also dropped into cooling drinks. We are fastidious enough about what water we drink, but does it ever occur to those who freely imbibe iced drinks that if the ice is taken from impure water it cannot possibly be wholesome? Water is wonderfully absorbent and easily tainted by an impure atmosphere or filthy surroundings, and I have yet to learn that it is purified by being frozen. I hold, then, that if water is not fit to drink, neither is the ice taken from it fit to swallow, and further that impure ice may be the cause of more illness than the doctors generally are aware of.

It is a simple matter to define what is bad ice, but not so easy to state where really good ice can be obtained. What I would avoid is stagnant water of any kind. Nothing can well be worse than duck-ponds, as well as those to which cattle have free access. Nor are comparatively large lakes with muddy bottoms, kept stirred by carp, eels, and other fish, suitable for providing pure ice. Ice fit for all purposes can be cut from lakes or ponds filled with clear water, and fed either with springs or which have a stream of clear brook water passing through them. Such are by no means numerous, but they are to be found on many large estates. Ice obtained from comparatively impure sources is serviceable in various ways, but ought only be considered supplementary to the bought blocks of Norwegian ice, though whether it pays for collecting and storing is quite another matter. I have my doubts about it, especially when the horse hire and extra manual labour are reckoned when the balance is struck. The work has to be done quickly, or the store may be too small to be of any value; hence the necessity for much extra assistance and outlay.

The question arises whether it is not possible in favourable winters to store a considerable quantity

of perfectly pure ice, even where no sheet of clear water is available? Not being in a position to experiment on a fairly large scale, I cannot speak positively on the matter, but venture to think it could be done, and that, too, both cheaply and well. Already we have had several moderately severe frosts, the thermometer with us, however, not having fallen much below 21°, but yet this during three nights was quite sufficient to freeze the water in fairly large exposed tubs into a solid mass of ice. This does not suggest the possibility of filling an ice house, or of the formation of an ice stack with the ice formed in tubs, as it is almost useless to store much less than 100 cartloads in a heap. What, however, I have often thought would be a plan well worth trying is the erection of a water-tight tank in an exposed, yet cool, position and above ground, this to be gradually filled with ice or as fast as water pumped in may become frozen. Such a tank ought to be at least 18 feet long and 6 feet wide, the walls being from 5 feet to 6 feet in height, formed of 9-inch brickwork, and well cemented; the bottom to be somewhat concave, paved and drained, provision being made for stopping the outlet while the tank is being filled. Another wall, thinner if need be, should be built fully 18 inches clear of the inner wall, the intervening space to be eventually filled with dry sawdust, or the best substitute procurable. Whether the requisite supply of pure water be pumped from a well sunk conveniently near, or be brought in some other way, must depend upon circumstances. Directly it is seen a sharp frost is imminent, the drainage outlet should be stopped, about 6 inches of water run or pumped into the tank, and if several shallow tubs are available, these, too, may well be gradually filled. As fast as the water is frozen into ice more water should be added, one or more men being kept on duty all night long for that particular purpose. The tubs being full, these ought to be emptied into the tank and the heaps broken into small pieces, and towards the end the ice obtained from the tubs would be especially serviceable for topping up the heap. At first the progress would be slow, but when once a fairly large mass of ice was formed the water subsequently added would congeal very much more rapidly, and I am convinced the difficulty of creating a large solid mass of pure ice would be more apparent than real. Probably the ice at the outset would rather test the stability of the walls, but the strain would soon be lightened, and even if the inner wall cracked, not much harm would be done.

If possible, the mass of ice should be finished off rather higher than the brickwork and ridge-shaped. It ought to be well enclosed by a wooden roof or shutter, over this being placed 18 inches or more of dry sawdust, finishing off with a good thick thatch of straw, Reeds, or Heather, the aim being to rigorously exclude warm air and moisture. If sawdust is not available, then good Wheat or Rye straw must be substituted, a thickness of not less than 3 feet not being too much. The drainage outlet must be opened, ice standing in water not keeping well. Whenever ice is needed for use, the covering ought to be carefully removed and returned as cleanly and quickly as possible, the greatest pains being taken and no expense spared to exclude warm air from the ice. The above may partake somewhat of a visionary scheme, but if anyone can point out how really pure ice can be more simply and generally obtained, he would confer a great favour upon myself and, doubtless, various other readers of THE GARDEN. One thing is very certain; it does not pay to construct the old-fashioned ice-houses, the excavation alone costing a large sum of money, especially seeing that ice keeps quite as well, or better, in structures erected on the surface.—W. IGGULDEN.

— Having had considerable experience in the collecting and storing of ice in the open, a few remarks on the manner in which the work should be done will be seasonable and may prove useful to not a few readers of THE GARDEN, who would doubtless be glad to have their own store of ice could they but see their way clearly to do so. The *modus operandi* is simplicity itself, and at the same time most effectual. No expensive icehouse nor excavated

and board-lined pit in the open is necessary to have a supply of ice all the year round. Indeed, this may be had in ninety-nine homesteads out of a hundred without expending a penny in excavating and fitting up an ice-house or pit in the open. This is to be done by following in detail the instructions herein given, which represent the manner in which the work of preserving ice has been practised here during the last eighteen years with the best possible results.

In a valley shaded by large trees, the foliage of which shades the ice rick from the direct rays of the sun during the summer and early autumn months, and at the bottom of a slope having an angle of about 30°, thus affording ample drainage, we commence our rick and build uphill about 12 feet or 15 feet to the edge of the cartway, which we made for the purpose. Some hurdles are then placed at the bottom and ends to prevent the ice when tipped up at the top from going beyond its limits. It is then well broken with mallets, and boiling water applied as the work is proceeded with to consolidate the ice. This is very important. The section of rick when finished somewhat represents that of a three-quarter span-house, the cartway representing the wall plate of the hip-roof. Then a man, with a ladder placed against it, spade in hand, begins at the top and trims the whole rick right round to the bottom, thus filling all the crevices with the descending ice dust, which is well beaten in as the operator advances with his work. This done, the whole is covered with sifted sawdust to the depth of about 4 inches to exclude the air, this being most essential in preserving the ice, following this with 2 feet thick of freshly collected leaves and sufficient long litter to prevent the leaves being blown off, afterwards enclosing the rick by hurdles, which are fastened by tarred string to stout sticks driven into the ground to keep cattle away. The sawdust we use is passed through a half-inch mesh sieve. The making of the ice into a rick instead of a stack is the better way, inasmuch as it obviates the question of insufficient slope arising to prevent the system being practised for that reason. But the rick, as a matter of course, should be made long enough to make up for loss sustained through deficiency of height and width. We have a capital ice house here, but having several years ago fully demonstrated the fact that a good supply of ice can be had all the year through without incurring the expense of making and filling an icehouse, I ceased to make use of the one here on the score that nearly half the labour necessary to fill the house is ample to make a rick containing a like complement of ice. From a rick made as indicated we have had a supply of ice for sixteen months from the date of making it. This was a test rick, and after it was finished we had recourse to the ice house, which had been filled in the ordinary way to supplement the supplies previously had from the rick, but it only contained about half-a-dozen loads of ice out of some 200 loads stored therein sixteen months before. These facts not only prove that a supply of ice can be secured all the year through from a rick made above ground, but that in ordinary winters an overlap supply of four months can also be obtained. In removing the coverings of the ice rick each time a fresh supply of ice is required, great care should be taken in replacing the coverings to again make the ice rick air-tight.—H. W. WARD, *Longford Castle, Salisbury.*

Taste in gardens.—I observe that the well-intentioned "J. I. R." has already been taken to task for divers of his edicts upon this subject. It is a pity to be over-dogmatic, and I, for one, object strongly to have such procrustean tests applied to myself or my garden. The double Pheasant's-eye Narcissus is a lovely and sweet flower of the old-fashioned kind. I love it, and resent "J. I. R.'s" decrying of it as "a sham outdoor Gardenia." Why should not I, on the same principle, call a Gardenia "a sham indoor double Pheasant's-eye"? "The Privet," says "J. I. R.," "is never lovely at its best." It is very beautiful indeed in copse and lane in my country, whatever it may be in "J. I. R.'s," and I know no flower which possesses

quite so choice a tone of ivory white. "J. I. R." dislikes the scent of Musk, but that is no reason why he should order its banishment from all gardens. I happen to like its smell, for its own sake and for the sake of old associates, and entirely decline to banish it from my garden. Again, "J. I. R." can scarcely have looked very attentively at Columbine, or he would know that their name comes, not "from the two doves in the nectaries," but from the form of the entire corolla, in which sepals and petals unite to build up the unmistakable appearance of a clustering group of doves. I enclose a rough sketch (not for publication) in which this is made clear.—G. H. ENGLEHEART.

GARDEN FLORA.

PLATE 733.

ROSE MARIE VAN HOUTTE.*

Of that charming section of Roses—the Teas—the variety represented in the coloured plate is one of the finest. It was sent out by Ducher as far back as 1871; and if this celebrated Rose-raiser sent out no other variety than Marie Van Houtte, it would be sufficient to perpetuate his name. There is no Tea Rose in the garden that surpasses this variety; no one that shows such charming variation and shades of colour; no one that is so constant, free, vigorous, and hardy. It deserves to be planted everywhere, especially in bold groups in the garden or in distinct beds, and it will give an unfailing supply of flowers from early summer until autumn rains and frosts cripple the opening buds. It soon makes a handsome bush, and never seems without a flower, even in autumn, when the blooms open of a good colour and in perfect character, showing all that perfection of shading and form that have made this one of the most famous of Roses.

The plants from which the blooms were figured were grown in the open in full exposure and allowed to flower at will, no feeding or elaborate treatment given, as with plants that are to supply exhibition blooms. Those who have not yet made good groups of this Tea Rose should do so, especially if handfuls of flowers are wanted until late autumn, and we have in mild seasons even gathered a bunch for the table on Christmas Day. As people generally see this Rose grown in hothouses and in other ways it is of a different colour. This drawing is in no way exaggerated, as hundreds of blooms of this colour have been seen on the group of Roses from which it was made. The plants are fully exposed, away from all shade, and planted in rather deep clayey loam. They stood the severe winters of 1886 and 1887 without protection of any sort. The plants now stand 4 feet high with beautiful leaves, and are handsome bushes even if they never produced a flower. No manure nor dressing of any kind has been given since the Roses were first planted in a well-prepared bed. The colour varies according to the month, the sun, and the weather, but the flowers are nearly always

* Drawn for THE GARDEN from plants three winters unprotected in open beds, at Gravetye, by H. G. Moon. Lithographed and printed by Guillaume Severeys.



ROSE 'MAFIE' VAN HOUTTE

beautiful. Sometimes they are almost white, with a faint flush of yellow in the base. In the summer season the side of the Rose exposed to the sun takes a colour as rich as that of the deepest form of *Mme. Lambard*. On the other side of the Rose it is almost white. It is curious to see the flowers of both shades sometimes open together, and there is considerable variety in the intensity of the colour of the buds. Flowers were produced throughout the whole of the summer and late into the autumn, hundreds often being open together. We think this is the finest Rose for the open air we have ever grown.

KITCHEN GARDEN.

FLOWERS IN THE KITCHEN GARDEN.

As a rule, the kitchen gardens connected with small establishments especially are anything but attractive to the generality of owners and their friends; in fact, more often than not they present a muddled-up, rubbishy appearance. Plenty who own or rent these badly-arranged gardens would gladly alter their character for the better if they only knew how to proceed with the work, and I am afraid there are a good many who are altogether indifferent to appearances, their principal desire being a regular and good supply of vegetables. As it happens, it is a comparatively easy matter to make a garden fairly ornamental without impairing its usefulness in any very perceptible manner. The rage for tender summer bedding plants has decreased in a very marked degree during the past few years, and very thankful innumerable over-worked gardeners are for this sensible relief. There is yet, however, much room for improvement in this respect, especially in the smaller places, where perhaps only one or two gardeners are employed as well as in innumerable cases where the proprietor can be classed as an amateur gardener, or one who only employs casual labour. Instead of cutting up and spoiling a small lawn with flower beds it would, in many instances, be a far more satisfactory plan to dispense entirely with these and grow many more flowers of a more serviceable and really beautiful character alongside the principal walks in the kitchen garden. With the aid of various hardy plants and a good variety of more tender subjects, an almost continuous and at times quite a gorgeous display of flowers would be had.

As gardens vary so much in their conformation and arrangements, it is scarcely possible to lay down any general rules as to the best positions for the principal walks and the borders running parallel to them, but a few general hints may perhaps be given with advantage. In some instances a walk would best be made to encircle the garden well clear of the boundary walls or fences, a flower border from 2 feet to 4 feet in width being formed on the inner side, or it may be on both sides if the border does not unduly encroach on ground valuable alike for early vegetables and the roots of wall trees. Sometimes the principal walk might well be taken through the centre of a garden, or at any point where it and borders alongside can be viewed from the best rooms in the dwelling-house, and if a hardy fernery was formed at the furthest end this would be an additional attractive feature. For these central positions I have a predilection for turf walks, these being easily kept in order, always pleasant to walk upon, and doing away with the necessity

for any kind of edging. *Espalier* or horizontally trained Apple and Pear trees form an excellent background for these flower borders, or if preferred, bushes or pyramids may be substituted. There is an almost unlimited selection of plants that are attractive when in flower, and, in addition, particularly well adapted for cultivation where a good class of plants for cutting from is needed.

It may not be always possible or convenient to form borders in kitchen gardens solely for flower culture, but there is yet much that might be done towards improving their appearance. A few dwarf Roses, clumps of Carnations and Pinks, patches of *Mignonette*, groups of Asters, Stocks, *Antirrhinums*, *Pentstemons*, and *Gailardias*, with dwarf Cactus Dahlias, variegated Maize, Chilian Beet, and a variety of other showy and serviceable plants at wide intervals, it may be among bushes, would all serve to enliven a garden. The various sections of *Anemones*, and which but few fail to admire, would appear to be especially at home when grown among fruit trees and bushes, and I have seen good collections of *Hellebores* successfully grown in such positions. *Narcissi*, again, as a rule, thrive well when grown in fruit borders, large clumps being formed and abundance of flowers produced without any apparent injury to the other occupants of the borders. Patches of the common Daffodil planted within 15 inches of the stems of large bush-shaped Apple trees soon become well established, masses of flowers much superior to those gathered in woods being annually produced. Much may also be done towards making a kitchen garden attractive by having a few rustic archways, these being covered with Roses, Clematises, Hops and Gourds. Many of the Gourds are so strange in form, in addition to being variously and brightly coloured, that they never fail to prove attractive, and most of them being edible, they are therefore very appropriately located in a kitchen garden. Tomatoes, generally, are of an ornamental character when in good health; some of the varieties are particularly well adapted for training on walls over sunny doorways, among these being the Peach, Golden Nugget, Blenheim Orange and Chiswick Red.

The least that can be done in a kitchen garden is to form good walks, and if the surface is of a nature to admit of its being walked over comfortably in all weathers, so much the better. A neat edging should also be laid. Box is still the most popular material for this purpose, but imperishable tiles or thin stone are the least trouble and expense in the end. Good order should reign in a vegetable garden quite as much as it usually does in the pleasure ground. If it does not, then to many there is no enjoyment in walking through. The frames and forcing quarters, that is to say all hotbeds, whether surmounted by frames or formed over clumps of Rhubarb and Seakale, ought as much as possible to be outside the kitchen garden proper, as they are invariably of a rubbishy character. No heaps of decaying rubbish should be seen, nor any decaying stumps and leaves of the Brassica tribe be smelt. Burn all trimmings, old stumps and anything of a somewhat woody nature, and if more soluble rubbish cannot be dug in quickly, convert it into manure in a heap well away from the principal walks.

W. IGGULDEN.

Gathering Mushrooms.—I never pull Mushrooms, because there are generally many little ones connected with the bottom of the stems of the large ones, and pulling displaces and destroys these. I prefer to cut them over close under the heads and

allow the stems to remain until the others have grown, and as soon as the stems have partially withered they can be removed without disturbing any of the coming produce or the surface of the bed.—J. M.

KITCHEN GARDEN NOTES.

THE SEASON OF 1889.

WE are now at the end of what on the whole must be considered a prosperous year. Failures there were and failures there always will be, let the weather be what it will, but in the course of a retrospective review I think it can be proved that vegetables of all kinds have been and are still abundant, our experience being much the same as fell to the lot of various correspondents in different parts of the country, the extreme north excepted.

ARTICHOKES.—It is not often that Globe Artichokes were so early and good as we had them this year, this being principally due to the care taken of the crowns. They cropped almost continuously till cut down by frosts in November, and strong suckers were also formed. Frosts have crippled the tops of these, but the hearts are right. Seedlings were unusually poor, not one in a dozen being worthy of preservation. Jerusalem Artichokes attained an enormous height, and the roots are correspondingly coarse.

ASPARAGUS.—This was not nearly so good as in 1888. Evidently it is warmth rather than moisture this valuable vegetable most needs, a cold wet summer greatly weakening the plants. I am in hopes the quality and quantity of the shoots next spring will again be above the average. The tops ripened off well, and what is a good test, the roots now being forced are producing excellent Asparagus without much trouble.

BEANS.—Kidney Beans were early and very productive, thanks to the genial weather experienced in May. Several French varieties were tried, but it is doubtful if any of them will supersede those we have long grown. *Ne Plus Ultra* is still the best for forcing and early crops generally, and both Canadian Wonder and Negro Long-pod are very profitable later varieties. I cannot speak very highly of the new giant Runner Beans, and for home consumption still believe the true old Scarlet Runner Bean the best, this producing very large clusters of small straight pods of the best quality. Jubilee, Mammoth Scarlet, and *Ne Plus Ultra* all produced heavy crops of very large straight pods such as exhibitors delight in, but they are not quite what cooks prefer. Those who like variety ought to grow one or more of the Butter Beans. They are not of so vigorous growth as the ordinary Runners, but they crop heavily, are very prettily coloured, and cooked as grown are of distinct and good quality. Of Broad Beans the best were Beck's Dwarf Green Gem, Improved Long-pod, and Improved Broad Windsor. The first-named takes up but little space, is early branching and productive, the Beans being of a size and quality that please many who do not appreciate the larger varieties. Both Runner and Broad Beans were remarkably productive, the former holding out till very late in November.

BEEF is somewhat coarse, in spite, too, of the seed being sown as late as the first week in May. *Crimson Ball*, the best form of the Turnip-rooted, again did good service, this being the best for the early crops, and also keeping well. *Dell's Crimson*, sown on poor hot soils, did not attain a serviceable size, but on our richer soil it is quite large enough, the colour being excellent. Improved Black (*Veitch's*) is rather too large, but the colour and quality are most satisfactory. This and *Pragnell's Exhibition* are particularly well adapted for sowing on poor or shallow hot soils.

BORECOLE has grown strongly, too much so in fact, and severe hoar-frosts have crippled some of the hearts and leaves—a very unusual occurrence. We rely principally upon *Read's Hearting*, this producing very tender blanched hearts, in addition to a crop of side shoots. *Cottager's Kale* is uninjured and will yield abundance of fairly tender succulent shoots. Asparagus or Buda Kale is never

injured by frosts, and this produces very succulent shoots in quantity late in the season, or long after the supplies of all other greens are exhausted.

BROCCOLI will, I am afraid, be cut up badly in many gardens. All are unusually luxuriant, the growth being late and sappy. Hoar-frosts have already injured many of the younger leaves, and any of the early varieties not protected are spoilt. Veitch's Autumn Protecting has been very fine, and is the best for storing. To succeed these we have a good breadth of the Sandringham selection of Snow's Winter White, which as yet is quite uninjured, and promises to again be a good succession to the Autumn Protecting. Last spring the Spring White, Dilcock's Bride, Vanguard, and Leamington were all of good service, the later supplies consisting of Champion White, Model, Standwell, Ledsham's Latest of All, and Late Queen.

BRUSSELS SPROUTS.—On all sides the breadths of these are unusually strong, but I have observed many crowns much injured by frosts. The crops are heavy and the quality good. Ne Plus Ultra (synonym, Northaw Prize) is our favourite, but Perfection is more profitable, especially for market purposes.

CABBAGES were early, plentiful, and good in quality last spring, and the breadths planted this autumn are very promising. A few of ours have hearted in prematurely, but are not injured by frosts. Earliest of All plays rather strange freaks. Sown in the spring and again early in July, it hearts in quickly and is quite a model variety. When, however, it stands through the winter, the hearts attain an enormous size—altogether too big, in fact. Ellam's Early Spring, Matchless, All Heart, Early Etampes, Paris Market, and Wheeler's Imperial are all of quick growth and excellent quality, the first-named being perhaps the best in the latter respect. Chou de Burghley we sow late in order not to have it too large and before it is wanted. This season this plan has not answered quite so well as usual, there being at the present time large numbers of great close conical heads in a blanched state or ready for use. They are quite a foot in depth, and therefore have to be spoilt in order to get them into ordinary vegetable sauce-pans. They are best cooked whole. Savoy Cabbage is also rather too early, but the quality of Tom Thumb, Dwarf Ulm, and Gilbert's Universal is excellent. Dwarf Green Curled and Drumhead are useful as forming a good succession, but they never equal those named in point of quality.

CARROTS.—These are and have been during the season both plentiful and good. In some instances, coarseness is the only fault that can be found. Parisian Forcing is of quick growth, very tender and sweet. Nantes Horn, Early Gem, and Guerande are all admirably adapted for forcing, sowing on warm borders, and for later sowings, each and all being preferable to the larger varieties. Of the latter the best are New Intermediate or Matchless Scarlet, Scarlet Perfection (Carter) and Long Surrey.

CAULIFLOWERS, again, were never better than during the past season. Early Forcing under hand-lights commenced to heart in long before the supply of late Broccoli was exhausted, Dwarf Erfurt, Mammoth and Magnum Bonum are also doing well. We grow the last largely for the later supplies. It is of compact growth, and forms hearts of superior quality. Early in August, spring-raised plants of Eclipse (an early form of Autumn Giant) was very good, Autumn Giant being fully a fortnight later. Autumn Giant was wonderfully fine everywhere this season, far more so than I have ever seen it previously.

CELERY has had a good time of it, and it is of superior quality accordingly—at least where it has been moulded up long enough for it to blanch properly. Superb White proved very satisfactory, and is undoubtedly the best white Celery yet tried here. Early Rose, another fine new variety, forms a capital succession, this being rightly and sufficiently well described as an early form of Major Clarke's Solid Red. The latter we still think highly of, and for the latest crops we depend solely upon Standard-bearer. Celeric, or

Turnip-rooted Celery, has also done well, Continental varieties only being grown. Large Early Erfurt and Large Smooth Paris are both superior to the ordinary form; the new Apple-shaped is of compact growth, the roots being of good size and excellent quality; while the most compact growing of all is found in the Large Smooth Prague.

LEeks AND ONIONS.—Leeks are very fine and the quality good. The Lyon is the most popular with exhibitors, while either Ayton Castle or Musselburgh are the best for home consumption. Leeks appear to be still growing strongly, a moderately severe frost not checking them much. Good beds of Onions were the rule, though unless the bulbs were thoroughly well ripened under glass they are keeping badly. Both the Silver and Golden Queen forms bulb exceptionally early, and other varieties suitable for autumn sowing are Early White Naples, Large White Italian, Lemon and Giant Roccas. For spring sowing, the variety Tennis Ball is distinct and good, Banbury, Main Crop, Giant Zittau, and James' Keeping forming a good succession. Anglo-Spanish, Rousham Park, and The Wroxton all attain a great size under special treatment, but are of no great value unless for exhibition purposes.

PEAS.—Early sowings were not a great success. Chelsea Gem, Extra Early Selected, and William I. all did fairly well, but far better crops were obtained from such excellent second early varieties as Telephone, Criterion, Prodigy, and Anticipation. Gladiator did not hold out long enough, and Duke of Albany was badly diseased. Of main crop and late sorts the best were Ne Plus Ultra, a selection from the latter named Goldfinder, Autocrat, and Royal Jubilee. Sturdy failed, a cold soil and too much wet weather being the cause. William Hurst, a very dwarf variety, is well adapted for very early or very late sowing.

POTATOES.—Had there been no disease the crops of these would have been exceptionally heavy. As it was, a capital lot was lifted, the quality in most instances being good. All the Ashleaf varieties did well, and so also did Coles' Favourite, Sutton's Seedling, Masterpiece, and Carter's Surprise. Curiously enough, Scotch Champion was badly diseased, Laxton's Reward also being much checked in growth by it. Magnum Bonum lost its haulm early, but the tubers were quite sound; and the same may be said of Abundance and King of the Russets, the last-named being a good all round variety.

TURNIPS started badly, not being nearly so good in frames as usual. Early Milan is much the quickest in growth, but the early White Vertus (Vilmorin) keeps good fully a month longer. Snowball is the best round white variety, and we had it cleaner and better than is often the case. If we add to these Veitch's Red Globe and Chirk Castle Blackstone, the selection will be difficult to improve upon.

TOMATOES were much diseased in some places, but as far as my experience goes the crops were well above the average. Some of the best with us against open walls were Ham Green Favourite, Early Chemin (Vilmorin), Perfection, Dedham Favourite, Golden Sunrise, Peach, Mikado and Large Red.

VARIOUS.—Parsnips are very large and not quite so sound as usual; The Student suits us best. Vegetable Marrow Long White and Pen-y-byd were very productive and good in quality, but ridge Cucumbers failed. It has been a good year for Spinach. Victoria, Monstrous Viroflay and Long Standing proved much superior to the ordinary forms, and at least one out of the three ought to be substituted for the old smooth-seeded. There is nothing very special to chronicle with regard to Lettuces. A considerable number of varieties were tried, including several from Paris, but I find none to surpass Early Paris Market for the earliest crops, while Perfect Gem is good for later sowings. A good selection of Paris White Cos and Black-seeded Brown Cos are not to be beaten by any tried against them. Louviers fine lacinated (Vilmorin) is undoubtedly the best early Endive. We

have had it very good. Picpus Green Curled is also very serviceable, while as regards quality, I find none to equal the Lettuce-leaved; but, unfortunately, this is not nearly so hardy as the Broad-leaved Batavian, this, therefore, being the most extensively grown for the latest supplies. Novelty in Radishes are numerous, and it is a difficult matter to decide which is the best. W. I.

MUSHROOMS.

HAVING to furnish a supply of Mushrooms from the middle of September till the end of April, a brief description of the method of growing them as pursued here may be of interest to some of your readers.

Our Mushroom house, which is a very old one, is a lean-to, situated on the north side of a range of very lofty vineries, and is 26 feet in length and 11 feet in width, with a path 2 feet 6 inches wide running down the centre. It is heated by means of a flue, which also forms the pathway. There are two tiers of beds, those on the side near the outer wall being 15 inches in depth, and those against the back wall 18 inches. In the former, the earliest and latest beds are made up, and in the latter, because of their greater depth—the beds for midwinter supply. The height of the front wall from the floor is 7 feet, and that of the back wall 12 feet. About 3 feet above the top of the uppermost beds there are at regular distances joists, which rest on the wall plate in front and are let into the wall at the back, and on the under side of these joists inch boards are nailed, thus forming a hollow space between the joists mentioned and the rafters which carry the roof. This hollow space is packed as full of hay as it is possible to get it, and renders the house very snug and warm and quite free from fluctuations of temperature, and although we have the means of heating the house, it is but seldom that it is required, as the temperature generally ranges from 50° to 55°. I always have the droppings collected regularly every morning from the stables, and in the autumn they are thinly spread out on the ground under the shade of a tree, and after that time in an open shed. After a sufficient quantity, or about ten barrow-loads, of droppings has been collected, they are then thrown together with two barrow-loads of maiden loam added. After lying six or seven days the heap is thoroughly turned and again thrown together, when, after lying for another five or six days, it is in a fit condition for making into beds. This quantity of material will make a bed about 18 feet square and 15 inches deep, and I much prefer those small beds to larger ones, as they keep up a much more constant supply, and a fresh bed can be made up every fortnight. When making the beds the whole is well rammed, and when finished the bottom-heat thermometer is inserted, and as soon as the latter indicates that the temperature of the bed has declined to 70° or 75°, it is spawned and the surface covered with 2 inches of finely-sifted loam, which is beaten down and smoothed over with a spade, and afterwards well covered with hay. The bed gives no further trouble, beyond turning the hay occasionally, until the Mushrooms commence to appear (which they usually do in about four or five weeks from the time of spawning), when the hay is gradually dispensed with. Beds made up in the way I have described will continue in good bearing for eight or nine weeks.

The house is damped down twice daily, the walls syringed, and when a bed shows signs of becoming dry the surface is syringed two or three times with tepid water, which, I think,

is far more preferable than watering with a water-pot. By preparing the materials for the beds in the way I have described, and by making up small beds and often, I am enabled, and without any difficulty, to keep up a daily supply from September till April. A. WARD.

Stoke Edith Gardens, Hereford.

POTATO TUBERS FOR SEED.

No place proves to be so useful for the proper keeping of Potato tubers in resting condition through a mild, open winter, such as the present bids fair to be, than a lean-to shed behind a south wall. If tall trees be near, indeed be partly overhanging, so much the better, as not only in that case is the temperature so much the more equable, but fully one-half the intensity of frost which may prevail is mitigated, so that little covering is needful. I prefer close, stout boarded shelves, upon which is laid some straw, to open trellis shelves, as should sudden intense frost prevail and get into the store, these open bottoms are so many traps for the unwary, as all top coverings avail little. With close boarded shelves and some clean straw or litter for a bed fully 12° of frost can be resisted from below, and if properly covered above the tubers are safe enough when the thermometer is down to 20° of frost outside. Where Potatoes lie in bulk they are apt always, but especially when the weather is changeable, to sweat a little, and the moisture thus generated is in frosty weather specially dangerous. Those who have deep cellars or very extensive stores need not fear any amount of frost, but few are so favoured, especially in private gardens. Whilst Potatoes for consumption must of necessity be kept from light and air in bins, tubs, heaps, &c., tubers for seed purposes are all the better for exposure, because they are thus thoroughly seasoned to endure the changes of temperature to which they are subjected when planted in the spring. But I have found, moreover, that thoroughly exposed seed tubers having their skins thickened and toughened by the exposure can withstand frost comparatively almost with impunity as compared with the effects seen on non-exposed tubers. When the weather is mild and dry a seed Potato shed can have all possible air admitted, but when the weather is damp and foggy or rainy, the shed is best kept close, as the air will probably be drier inside than out. When tubers are required for special planting, whether in pits or frames or on warm borders, specially selected ones put into shallow boxes and stood in a warm house where there is ample light, such as the floor of a vinery, will cause the sets to push shoots, which can be thinned if needed, and the tubers removed into a cool house for a week before planting, then have shoots an inch in length well hardened for placing in the soil. The practice of first sprouting tubers before planting is so advantageous, because failures are prevented, any blind or decayed tubers being discovered and rejected, as also are rogues, whilst the after growth is of a more equable character; indeed, selecting the strongest and planting these first there is the advantage when the digging is started in finding every root equally forward and prolific. A good, fairly frost-proof Potato shed or store should be found in every garden, and with the tubers for seed exposed on shelves, the floor can be occupied by bins for the storing of tubers for eating, or for Carrots, Beet, and similar roots. A. D.

Christmas vegetables.—The phrase, a green Yuletide, is commonly applied to Christmas when the weather is, as now, very open, soft, and every form of vegetation is looking green and luxuriant. There seems to be considerable identity between a green Yuletide and wealth of green crops at Christmas, for with a somewhat open season, such as the present one on the whole has been, a wealth of green stuff seems to be but a natural consequence. The few sharp frosts which visited us early in the month led to the impression that some real wintry weather had set in, but the illusion was speedily dispelled, and here all the

ordinary green crops of the field and garden look as fresh and vigorous as though no frost had visited us this winter. No wonder green stuffs are a drug in the markets. About this neighbourhood, Cabbages, Coleworts, and good Savoy are bursting with bulk and age, and are wasting uselessly in large quantities. They may prove of some value as sheep or cattle food, although that is very plentiful with all similar products, or they may be of some value ploughed in as manure. Still Cabbages and Coleworts are sown and planted out at considerable expense for such purposes, and with such uses result in loss. Spinach has been abundant, and because the weather is so open, grows well; therefore keeps fairly plentiful and always pays well. The wintry weather of the early part of the month generally settled the whole of the late Cauliflowers, and even Protecting Broccoli suffered somewhat, but that is a rather risky crop grown in large quantities; hence only very moderate breadths are put out. Autumn Giant may always be relied upon to turn in before any material frosts come, and is thus cleared off in good time, whilst late Broccoli, with the exception of the sprouting purple, are far too long on the ground, and too uncertain in constitution to render the planting of any large quantity desirable. Brussels Sprouts have been a capital crop, and still continue to yield myriads of bushels for market; indeed, at this season many of the stems give some of the best and firmest sprouts. The large early sprouts are rarely so firm as is desirable, whilst later ones less in size are usually much firmer and better flavoured. Small Coleworts for bunching find a moderate sale, but the growth has been rather prolonged this year. It is to be deplored that these tender and pleasant eating members of the Cabbage family receive such rough usage, for they are pulled, thrown into heaps, bunched, and roughly handled on a table, pitchforked into carts, taken to the homestead and sometimes washed in large tubs, then packed into vans, and hence to the markets. Were they cut and put into baskets at once, it is evident the heads would be little injured, and would be kept cleaner and fresher. The bunching plan is a very objectionable one, and is a disgrace to our market methods.—A. D.

MOLES IN THE GARDEN.

ARE moles useful in a garden as destroyers of vermin? I can remember an Essex clergyman some time ago asserting that when he came into possession of his living he found the soil full of wireworms; indeed, they were so numerous that they completely destroyed his crops. To remedy this he encouraged moles and partridges on his fields, and he actually purchased some of the former and placed them on his land. They honeycombed his fields, but they rid them of wireworm. They lived upon the insects they found in the soil, wireworm being the chief, and having cleared the ground of them, they had to seek for pastures new. I cannot think but that if they get into a garden they work a great deal more harm than good, uprooting some plants, burying others, and causing the loss of crops. I once had a garden separated from a cornfield only by a dry ditch, and the moles appeared to burrow under this ditch and come up again in the garden, running for a considerable distance under a narrow border until they reached its utmost limit, when they had to return. It was of no use to try and grow anything in the border; they cast up all the plants. Finding the moles worked at certain hours every day, I took a spade, and, getting behind the animal, dug it out. In this way I gradually rid myself of the marauders. But it is surprising how far they will run; one naturalist has informed us that these runs have been traced for half a mile in one direction. In summer time, when the weather is hot and dry, the moles work at a great distance under ground, and, except when the soil is moist, they cannot work near the surface. It is said that a hot, dry summer destroys a considerable number of moles, and they are not unfrequently found dead in woods, apparently from fatigue and want of food. My own experience inclines to the opinion that moles are injurious

rather than otherwise in the garden, notwithstanding others may be disposed to take a more generous view of the matter. R. D.

STOVE AND GREENHOUSE.

MANETTIAS.

WHY do not people who possess a stove use such plants as these upon the rafters, instead of leaving them bare and unsightly? Manettias may be kept well within bounds, and at this season of the year are charming objects; indeed, I may safely assert they are superior to Fuchsias treated in this manner in a greenhouse in the summer months, and this is saying a great deal. I remember having been quite enchanted with a roof covered with Fuchsias at Chatsworth Gardens when on a visit there some few years ago. In a small and beautiful old-fashioned garden, some eighteen miles or so from London, a garden in which the old plants revel and increase in the open air, and in which there is always something to attract the eye, there are two species of this genus now in great beauty. Manettias are very easily managed, and should be potted in a mixture of peat, loam, and decomposed manure, the whole being made sandy; allow fair pot-room and drain the pots well; water liberally, and syringe the plants frequently to prevent the attacks of red spider. If these plants cannot be afforded the space upon the rafters in the summer months, they may be grown upon long rods and placed in position in the winter, and thus the rafters of a house may be kept bright and gay instead of being bare and uninteresting. What a brilliant effect might be made with these plants and the beautiful and fragrant *Jasminum gracillimum*, and when these plants are over let them be removed and their places filled with something else. What a beautiful effect could be made, for instance, in the Palm house at Kew, which I have noted upon many occasions is usually devoid of a single flower, whilst quite a gay and festive scene might be produced at this season by the introduction of these Manettias alone, draping the roof for some 15 feet or 20 feet up with their many drooping tubular and brilliantly coloured flowers. I strongly urge upon the attention of readers of THE GARDEN the ornamental properties of these plants.

M. CORDIFOLIA.—This is a beautiful plant which is just now one of the most superb ornaments a stove can have, but it has one great drawback, i.e., it is an old plant, having been introduced to cultivation so long ago as 1831—nearly sixty years. The plant is sometimes named *glabra*, from its opposite, heart-shaped pointed leaves being shining green and smooth on both sides; it grows some 8 feet in height, perhaps more, the upper parts of the shoots being heavily laden with scarlet tubular flowers, which hang in a very graceful manner; the footstalks are slender, between 2 inches and 3 inches long, and the tubes increase in size upwards, with reflexed tips. They are each over 2 inches in length and brilliant scarlet. The plant, I believe, is a native of the cooler parts of Brazil.

M. MICANS.—This is a much stronger growing plant than the last, and was introduced to this country some twenty-five years ago by the Messrs. Veitch and Sons, of Chelsea. It grows some 15 feet to 20 feet long, the ends of all the shoots being clothed with large drooping panicles of rich orange-red tubular flowers. It is a native of Peru.

M. BICOLOR is also a very pretty variety, which, however, flowers later and is a smaller growing plant, seldom attaining more than

about 5 feet or 6 feet in length, with lanceolate, somewhat glaucous leaves; it flowers very abundantly, the tube being narrow, the basal half red, the upper portion with the spreading tips bright yellow. It comes from Brazil.

W. H. G.

Rubus rosæfolius plenus.—This is a greenhouse Bramble that will produce its pretty double white Rose-like blooms during the winter months if the plants are grown on freely the preceding summer. It is a rather small, erect-growing bush that pushes up suckers freely, and in this way soon forms a dense mass. The stems are very thickly studded with spines, while the Rose-like leaves are thin in texture and apt at all seasons to be attacked by red spider. As they may be grown out of doors during the summer months, especial care must be taken at that time against these pests, a very successful check being constant syringing. The typical form of this Bramble is spread over many parts of the globe, being in some cases cultivated for its fruit, but, singularly enough, it does not appear to have been introduced into this country, while the double-flowered form has been grown here for the last twelve years.—H. P.

Carnation Winter Cheer.—This beautiful Carnation, which was exhibited by Messrs. Veitch and Sons at the meeting of the Royal Horticultural Society on December 9, 1889, deserves more than a passing note. I could not understand why a first-class certificate was not awarded, but on inquiry I learned that a certificate of merit was the highest award that could be made by the committee. I do not know how long this law has been in force, but it appears to me a very strange regulation, especially as I find that many florists' flowers have received first-class certificates during the year. Among these may be mentioned Begonias and Primroses, which may be raised by thousands from seed, and which, moreover, cannot readily be propagated by any other means. It is not so, however, with Carnations, for there are few plants raised from seed which produce so few really meritorious varieties, and when once obtained they can only be increased by propagating from cuttings or layers. I consider the Carnation should be eligible for a first-class certificate as well as a Rose, an Orchid, or in fact any plant in which variation is to be found.—**QUERIST.**

The Tree Tomato (*Cyphomandra betacea*).—A large number of the fruits of this greenhouse shrub were shown at the Royal Horticultural Society's December meeting, but to our taste they are of little value, in spite of the assertion of some that they are substitutes for Tomatoes. Apart from the fruit, it is a useful plant, as the leaves are large, thick, glossy deep green, and as handsome and ornamental as those of many foliage plants. There are two specimens of it in the garden of Captain Fernie, Chase Lodge, Mill Hill, that have not yet fruited, but without its fruit it is worth keeping. In the late autumn we have the beauty of its smooth, reddish, egg-shaped fruits, which give the plant an unusual appearance. It will do well in a cool house, and will rise to a height of 12 feet or 14 feet, as may be seen from the large specimen which has been fruiting freely this year in the Cactus house at Kew. It may be easily grown in a pot with good loam for soil, and can be propagated by seed or cuttings. *Solanum fragrans*, in allusion, we presume, to the fragrance of the flowers, is the same thing, and was introduced from South Brazil as far back as 1836. During the past two years the Tree Tomato has been frequently exhibited, but it is never likely to be of value except as a handsome plant for the warm greenhouse. The Rev. W. Wilks sent the following account of the plant with his exhibit: "The tree on which the fruits shown have been grown is about 9 feet high, with a spreading, much-branched head. The leaves when young are of a violet-purple colour, changing with growth into a deep green. They are very large when fully developed. The blossom is precisely like that of a *Solanum*, being, in fact, to an ordinary observer identical

with that of the plant commonly known as 'Black' or 'Woody Nightshade.' It is an abundant bearer, the fruit ripening late in November and throughout December and January. The fruit when raw has a much firmer flesh than a Tomato, and is slightly more acid, but when cooked it is almost indistinguishable from the ordinary Tomato. The plant has been grown throughout in a cool orchard house, from which frost is only excluded."

HELICONIAS.

I FEEL compelled to say a word or two respecting these plants, which have to a very great extent dropped out of cultivation of late years. During my last visit across the Channel I saw some of these plants used for indoor decoration, and as they have somewhat stout and leathery leaves, they stand well and have a very imposing character, having the appearance of miniature Musas, to which Order indeed they belong; whilst some species have large and highly coloured bracts, which retain their colour for many weeks, and thus are found very ornamental. Heliconias are easily grown plants; they have a creeping root-stock, by the division of which they may be increased; all require strong heat to induce them to grow vigorously and to flower freely. They should be potted in good rough leaf-mould, a little loam and peat, and the whole enriched with some good well-decomposed manure. I find leaf-mould far preferable to loam as the staple for these plants, as it induces more vigorous growth, but it must be well enriched with some good manure. Heliconias enjoy a liberal amount of water to their roots; therefore the pots should be well drained, and the plants also enjoy a shady situation in the house. When these plants are taken for the decoration of the dwelling-house they should be employed at the time growth is inactive or when they are flowering, and after a time they should be returned to the growing house and be re-started. The following half-a-dozen kinds are noble plants, and should be grown in every garden where sufficient accommodation can be afforded them:—

H. AUREO-SIRIATA.—This is a superb plant, which has been an inhabitant of our stoves for some few years, having been introduced by Mr. Bull, of Chelsea, if I mistake not, from the Solomon Islands. The finest plant of this I have ever seen was recently in the nurseries of Messrs. Williams and Son at Holloway, where it is assuming the habit and appearance of a small Musa; it is potted in the material recommended above, and bids fair to become a noble and showy plant. It has the habit and shape of leaf of *Musa Cavendishi*; the stems are green and yellow, tinged with a shade of pinkish violet, and the broad blade is rich deep green, the veins which run from the yellow midrib to the margin being yellow, the intervening spaces being more or less blotched and dotted with yellow on the deep green ground. The plant, as far as I am aware, has not yet flowered in cultivation.

H. TRIUMPHANS is another plant which has not yet flowered, so that it is not quite certain that it belongs to this genus; it has been introduced some few years now, having been brought from Sumatra by M. Linden, of Brussels; the leaves are of a rich deep green colour, heavily striped between the midrib and the margin with broad bands of deep blackish green, which renders the plant very distinct.

H. HUMILIS.—This species is a bold and distinct plant from Guiana, and its beauty lies in its large and highly coloured bracts. The leaves, from 15 inches to 2 feet long, are borne upon foot-stalks some 3 feet long, the plant having somewhat the appearance of a dwarf *Strelitzia*. Its large boat-shaped bracts, nearly 6 inches long, are thick and fleshy in texture and bright scarlet, with a stiff green tip; the flowers contained in these are not showy, being greenish white.

H. METALLICA.—In this plant we have a very beautiful species, growing 4 feet or 5 feet in height, and having the appearance of a slender Musa. The leaves are rich velvety green on the upper side, strongly nerved, vinous purple beneath, and from 1 foot to 18 inches or more long. The flowers are quite different from those of the previously named plant, for here the bracts are green, and the flowers are large and showy, being each 3 inches or more long, of a brilliant deep scarlet tipped with white.

H. AURANTIACA is a small species which blooms very freely. It grows about a yard high, and bears narrow plain green leaves and terminal spikes of flowers, which are very showy. The bracts are reddish orange, tipped with green, and the flowers yellowish white. This plant appears to have been imported by M. Verschaffelt, of Ghent, from South America.

H. GLAUCA.—This plant is still rare, but it is a very beautiful species, and well deserving of more general cultivation; the leaves are of a rich deep green, over which is a bluish green glaucous hue on both surfaces. The flower-spike is coral-red, and the footstalks are also of the same colour, the flowers themselves being yellowish green; the bracts are small, dull yellow. It is a native of South America.

Many other species used to be grown in my young days, but it would be useless to repeat them here, for I suppose it is not possible to find them now in our gardens. One species, however, I remember well, i.e., the Parrot's-beak (*H. psittacorum*), which is a very pretty plant, its flowers being orange-yellow, tipped with velvety black. It is nearly a hundred years since this was first introduced to this country.

W. H. G.

Dwarf Asparagus as a room plant.—Observing "T.'s" complaint that *Asparagus plumosus nanus* is subject to red spider in a dry atmosphere, I should like to mention that having early last July had a plant of this variety in a 5-inch pot given me, which ever since, with the exception of being occasionally stood outdoors to have a drenching of water, has been kept in a living room in which gas is burned for some six hours daily, and a fire is kept all day also. In spite of that there is not on the plant the least evidence of spider, and whilst it has some sixteen stems and new ones keep showing, the foliage is wonderfully green and fresh, and it is now within a week of Christmas. I think I have shown that this pretty dwarf Asparagus is a capital room plant.—A.

Rhododendron Daviesi.—The flowering season of this *Rhododendron* is usually limited to the spring months, but we have had quite recently several expanded clusters of its bright-coloured blossoms which are doubly valuable at this particular period of the year. It scarcely belongs to the tube-flowered section with which Messrs. Veitch have made us so familiar, many examples of which are now in full bloom, and have been for some time. *R. Daviesi*, which is of more vigorous habit than Messrs. Veitch's varieties, was raised by Mr. Davies, of Ormskirk, to whom we are indebted for some beautiful white-flowered, sweet-scented varieties, the parents being the bold-growing *R. javanicum*, with massive heads of reddish orange-coloured blossoms, and *R. retusum*, whose flowers are small, somewhat Fuchsia-like, and vermilion-red in colour. The hybrid produces blossoms about midway between those of its parents, while the leaves are of a very dark green, with the leaf-stalks and bark of the young shoots reddish. It is certainly a desirable *Rhododendron* for the greenhouse, for though it seldom blooms at this time of the year, yet in the spring every shoot of sufficient strength is terminated by a cluster of its bright coloured blossoms.—H. P.

Arum Lilies.—Much has been written of late as to whether this beautiful *Arum* should be planted out in summer or kept continually in pots. I would, however, recommend the following plan to all those who have the necessary convenience, viz., a pond or lake, with shallow water near the sides: Early in May take old stock plants and divide them into good strong clumps and plant them in old worn-out hampers, using good turfy loam and manure; then plunge them into the water, in an open sunny situation, deep enough for the top of the soil to be from 3 inches to 6 inches under the surface, and let them take their chance till the middle of October, when they should be taken up and planted in very large pots, or tubs made from old casks cut in two. If placed in a light, airy house, where a little heat can be turned on in severe weather, and kept well deluged with water and an occasional dose of liquid manure, no one, I think, will be disappointed with the results. In October

of last year I lifted a cartload of fine clumps from a pond, and after splitting them up into manageable-sized masses, planted them in large tubs. They produced a grand lot of flowers all through the winter, and in spring the last lot, nearly 7 dozen, were cut for Easter decoration. The plants were immediately turned out of the tubs, carted off again to the pond, and plunged into the water with a barrowful of soil mounded up around each clump. They made wonderful growths during the summer months, and many of them are now in tubs for flowering during the present winter. In the south of England, especially near the sea, Arums will stand the winter, and though sometimes they may get cut to the surface of the water by frost, they will come up again as strong as ever, and furnish plenty of blooms for cutting later in the summer.—SANGUINEA.

ACHIMENES.

This is a lovely family of flowering plants, with scaly underground tubers, which die down

house and conservatory are fading somewhat, and continue to produce a gay appearance for many weeks. As soon as the plants have done blooming the tubers may be put to rest for the winter, and thus space be made for those things which have been grown for winter decoration. The Achimenes is a native of South America, but the majority of the sorts now to be found in English gardens have originated there, being, for the most part, hybrids. Of late years we have had but very few new varieties, and this neglect has probably been one of the causes why their culture has been so much discontinued, and it would be a great boon if amateur gardeners would again take this family in hand. I think it was a Mr. Parsons, of Danesbury, who in years gone by used to champion this family, and many of the best kinds in cultivation were raised by him.

Achimenes require stove heat to grow them

kept fairly moist, and the receptacle, be it pan or box, should be placed in a fairly light position, not too far removed from the glass, in a warm house; so treated the tubers will soon begin to grow, and when the growths are 2 inches high they should be lifted and placed in their flowering pots. They should be set out regularly and at equal distances apart, but not too thickly. I prefer pans, as in these larger heads of bloom are produced, and the pans occupy very little more space. Do not cover the roots deeper than 1 inch or $1\frac{1}{2}$ inches, and at all times drain well. When the plants have grown to about 6 inches in height pinch out the ends of the growths. As soon as the laterals begin to push each stem should be provided with a stick sufficiently long to last through the season, and they require attention in tying, so that each may be kept in position and afforded room for the due development of the foliage. Achimenes require an abundant supply of water to their roots when growing; hence the necessity for good drainage. Some growers frequently syringe them overhead. I, however, object to much syringing, having grown them quite free from red spider, which is their greatest enemy, by an occasional dewing overhead and by keeping the atmosphere well charged with moisture. At all seasons of their growth they should occupy a position near the glass, or otherwise they become drawn and weak and lose their bottom leaves, which is a great disfigurement, and their flowers are of less substance and lack colour. Whilst growing, a watering with weak liquid manure about once a week will be highly beneficial, and when the flowers appear, twice a week will greatly assist them. The soil should be good light turfy loam and leaf-mould, in about equal parts, about a sixth part of old sheep or some other well-decomposed manure, and a liberal amount of sharp sand. After the flowering is past the plants should be removed to a frame and kept moderately moist until the tops have died, after which they should be laid upon their sides until the soil becomes dry, when the roots may be turned out and stored in dry sand for the winter. The tubers should be kept cool and dry, but I do not think the temperature should fall lower than about 50° at any time.

If required for hanging-baskets, I would advise them to be planted just the same as for pots, only it is best to start these in their position at once, instead of transplanting them. The baskets which have been most effective with me I have grown bottom upwards, until the plants begin to show flower. I then hung the baskets in their proper position, dropped a pot of flowering plants into the empty pot which had been in the basket all the time, and had a fine display of bloom. The slight turn which the points of the stems will take serves to bring the blooms into just the right position. In planting the baskets a nice admixture of colours may be obtained, but care should be taken to see that the habits are similar, so as to avoid a patchy appearance. J.



A well-grown Achimenes.

annually. In years gone by these plants were largely grown, but now they are very rarely seen, and when they are to be found the gardener or amateur appears to treat them in such a careless manner that they usually lack half the beauty which, with a little care, they would produce. I am at a loss to understand why or how this neglect has come about. They are of easy culture and well adapted for hanging-baskets or for pots; they flower at a season when the usual occupants of the green-

well, but when they arrive at the blooming stage they should be gradually inured to a lower temperature; then they will continue to flower for weeks in full beauty in a cool conservatory, care being taken to shelter them from cold draughts. If a succession is desired, batches may be introduced at intervals of a month. Some time in February the little scaly tubers should be started, by laying them thinly in a large pan or box, and covering them with about 1 inch of soil. The soil should be

Hamiltonia spectabilis. — "Manchester" sends flowers of two plants, both of which are highly desirable for flowering at this season. No. 1 is the above-named plant, the flowers of which are strongly perfumed like Orange blossom. This is a shrubby plant with persistent leaves and dense heads of flowers, which have a long tube and a spreading limb, which is five-parted and reflexed, lilac or pale blue, blotched with deep blue at the base of each segment. This plant, from its colour and delightful fragrance, should be very largely grown. The plant is rare, I think, as I have only seen it once before, and the genus is not a familiar

one, but it appears to have been named after an American botanist. It is a handsome plant, but I am quite ignorant of its native country. The sender says he has grown it in a cool stove. No. 2 is *Toxicophæa spectabilis*, a pretty, sweet-scented South African plant, of which a coloured plate was given in *THE GARDEN*, Vol. XII., p. 14. The plant was obtained by Mr. Williams, of Holloway, and sent out by him, and the blooms now before me appear to be those of an extra good variety, the head being large and dense, the flowers of the purest white and deliciously sweet. There appear to be two kinds of this plant, the first form obtained by Mr. Williams proving to be *T. Thunbergi*, but the true *T. spectabilis* was soon obtained. It appears to be a free-growing variety, producing larger flowers with a longer tube, and it is altogether a more beautiful species.—W. H. G.

WORK IN PLANT HOUSES.

GREENHOUSE.—AMARYLLIS.—The deciduous varieties of these plants, to which section by far the greater portion of the *Amaryllises* grown belongs, are now treated so as to have them in flower over a longer period than formerly. This is a decided advantage. Though a houseful of them all in bloom at once is very striking, they are yet more useful when brought in over a longer period. The plants which flowered in summer will now have shed their leaves, and should have the soil kept nearly dry. This portion of the stock should be retained for successional bloom again, as, in common with other plants, those which were started first last season will again move the earliest. I have always found these deciduous varieties do the best when not kept quite so cold in the winter as they are sometimes, being less inclined to decay about the collar where the leaves were attached when so treated. Where they can have a temperature of about 45° there will be little danger of injury from the cause named.

EVERGREEN AMARYLLISES, or *Hippeastrums*, as the evergreen sorts used to be called to distinguish them from those that shed their leaves, will require little water for the next two months, but they must on no account be kept so dry as to cause the leaves to flag or shrivel, as any loss of foliage beyond that which goes off in the ordinary course of decay will weaken the bulbs.

VALLOTAS.—For late summer flowering there are no greenhouse bulbs which give so good a return for the little attention they require and the room they take up as *Vallotas*. The rate at which they increase by the numerous small offsets which they produce admits of a large stock being got up in little time. Keep the soil in a half dry state until the end of February, when more water will be required. They will not suffer if kept cooler than advised for *Amaryllis*.

BERRY-BEARING SOLANUMS.—It is well to have a portion of the stock earlier than the rest, so that their berries will be coloured in the autumn, and admit of the plants being used in conservatories and greenhouses amongst the comparatively few things then in flower, and which the bright colour of the berries will do something to help. There is so much difference in the freedom with which some of the plants that are raised from even a good strain of seed produce their berries, that it is advisable to grow the stock from cuttings selected only from the freest fruiting examples. The sooner the cuttings are now put in the easier it will be to get the plants of a flowering size. Plants that have been in a warm greenhouse during the autumn will have made a little top growth. Shoots produced in this way will be in right condition for striking readily; whereas if cuttings are made of older, harder wood they will be too long in rooting. The temperature of an ordinary propagating frame will suit them. It is best to put the cuttings separately in small pots, as then they have not to undergo the disturbance which takes place in separating them when a number are struck together in one pot. The old *S. capsicastrum* is still worth growing; with the main stem of the plants tied to a neat stick it forms a pyramid that affords an agreeable

contrast to the bushy form of the now commoner sort. Where a second batch of the plants have been provided they will retain their berries fresh until far on in the spring, provided they are now kept quite cool. No more heat is necessary than will suffice to prevent the frost injuring them. *Solanums* are subject to the attacks of aphides. When any aphides are found, the plants should at once be well fumigated before being associated with other things.

CHINESE PRIMULAS.—Plants that were raised from early sown seed will now be in flower. If possible they should be kept where they can have a night temperature of 45° or not much less. Where this can be given them, there will be little danger of the leaf-stalks damping, to which this section of *Primulas* is subject during the depth of winter. Under any circumstances, the plants should be stood well up to the glass, especially when they have to be kept cooler than they like. Light, with the help of the extra motion in the atmosphere that is always going on near the roof, is the next best safeguard against damping. Younger stock that is intended to give successional bloom towards spring should, if possible, be kept a little warmer during the next two months than the generality of greenhouse plants requires. The more light the plants get, the more strength they will gain, and, as a matter of course, the better they may be expected to flower.

DOUBLE PRIMULAS.—Where white flowers are much in request for bouquets, button-holes, and sprays, or for arranging in small specimen glasses, there is nothing in the way of *Primulas* equal to the old double white, as its blooms will keep fresh for several days in water; whereas the single kinds are so liable to fall off, that little dependence can be placed on them. With the double form of the flower little can be done, unless the plants have a temperature of from 45° to 50°; if much cooler than this, they are subject to damping off at the collar, and the flowers do not come on fast enough to admit of the requisite quantity being forthcoming. Where these double *Primulas* are well grown and receive the necessary support they will continue blooming with little falling off until spring. To keep up the strength that will allow of this, manure water should be given once a fortnight. Whatever watering is now required in houses or pits where *Primulas* and other plants of a similar nature that do not like much atmospheric moisture are located, should be done early in the day, so as to admit of its getting dried up whilst the ventilators are open. A little warmth should also be turned on the pipes for two or three hours early in the day, reducing it as may be necessary towards evening.

CAMELLIAS.—The late severe weather, coming as it did early in winter, acted as a reminder of the necessity for taking precautions to prevent the atmosphere in conservatories and other houses containing *Camellias* getting too dry. If this is not attended to, the buds are almost certain to drop, more or less according to the condition of the plants. Any that are at all weakly through over-flowering in past years, or through a deficiency of roots, are the first to suffer from this cause, especially when the buds are backward. The favourite old white variety is generally the worst sufferer in this way. Where the plants are turned out in a bed or border, and consequently are more robust, they usually are less affected. In trying to correct this over-dry state of the atmosphere, it is not well to do anything that will cause the production of steam. Where this exists it condenses on the flowers and spots them, and is also injurious to whatever plants of other kinds happen to be present. In houses where there are beds or borders with plants of any description planted out, the moisture present in the soil rises from it to an extent that goes far to counteract the drying effect of the heat from the pipes. It is when the whole surface of the floor is composed of stone flags or tiles that the worst effects of parched air are experienced. In such places it is well to put a good body of Moss or other matter capable of hold-

ing moisture in the cavity where the pipes are laid, or immediately below the pipes when these are above the floor. By keeping this wet enough, moisture will be given off to prevent the air getting over-dry without the production of too much vapour. Needless to say, the plants require much less water in winter than at other times, yet it is well to bear in mind that *Camellias* have a large amount of leaf surface through which evaporation is constantly going on, independent of which when they are carrying a heavy crop of bloom buds, the increasing size of which as a matter of course requires moisture, it necessitates care in seeing that the roots never get dry, especially when the plants are confined in pots or tubs, and are wholly dependent for moisture on the limited amount of soil within their reach. *Camellias* more frequently get out of health through the soil becoming dry than from all other causes put together. When the soil happens to get dust-dry, nothing but plunging in water for a time sufficient to let the whole get soaked through is of any avail.

CAMELLIAS PLANTED OUT.—Where the plants are turned out in a bed the roots have a further run; consequently they are less dependent on the moisture nearest home, and are longer before they suffer to an extent that is perceptible. Now, when there is more time to attend to the wants of plants under glass than there will be a little later on, it is well to go over the whole of the stock with a sponge and soapy water to clear the leaves from the dust and dirt that even in the best atmosphere are more or less present. Where the plants are at all affected with scale, it is doubly necessary to give them an extra cleaning, so as to reduce the insects as much as possible.

STOVE.—JASMINUM GRACILLIMUM.—This plant is not yet sufficiently known amongst those who have to provide large quantities of sweet-scented flowers. To many the perfume of *Jasmine* has no equal. The variety in question is much the freest flowered of all the kinds that succeed under glass, as it will bloom from every bit of shoot that it makes on small examples as well as on large specimens. It will bear a good deal of warmth, blooming earlier or later according to the amount of heat that is given it. Plants that have been kept somewhat cooler during the autumn should now be put in a forcing house or warm stove to hasten their blooming. Syringe overhead once a day, but not oftener, as if too much water is applied in this way, it will cause the flowers to come weak and too soft in texture to enable them to stand well when cut.

T. B.

BEGONIAS.

A READER OF *THE GARDEN* sends me a few flowers and leaves of these for identification, and they are so exceedingly beautiful and interesting, that I here enumerate them. They remind me somewhat of the days when at Kew a house used to be devoted to these plants, which just at this season were very gay with bloom. They are easily managed, and when well done they bloom profusely through the winter months. I made note a short time since of the beautiful effect produced in Sir Trevor Lawrence's garden at Dorking by two kinds, *B. geranioides* from Natal, and *B. John Heal*, one of Messrs. Veitch's hybrids. No. 1, *B. microptera*, is an Eastern species with dark green leaves above with a red spot at the base, beneath light green, the prominent veins red. The panicle of blooms is terminal, much-branched, and many-flowered, the blooms being white tinged with pink. It comes from Borneo, and is very effective at this season of the year. No. 2 is *B. Kunthiana*. It occurs to me that I have usually seen this variety in bloom earlier in the season, but no matter, it is one of the most beautiful species whenever it is seen on account of its rich and decided contrast in the coloration of its leaves, which above are deep green, whilst beneath they are rich and bright purplish-crimson; the flowers are numerous, large, and of the purest white. It comes from South America. No. 3 comes with a question, Is this *geranioides*? No; it is *B. natalensis*, and although very beautiful, it cannot compare with the plant it was supposed to be. It

is a species with a tuberous root, and bears a somewhat coarsely-toothed leaf, the colour being deep green, irregularly spotted with white; the panicles of flowers are numerous, the flowers individually being white flushed with flesh colour. No. 4 is a pretty dwarf-growing plant which appears to be common in the island of Trinidad, and is named *B. glandulifera*. It has stemless, dark green leaves; the flower-stems are erect, hairy, bearing a much-branched panicle of many flowers which are rather small, but of the purest white. This is one of the most handsome species. No. 5 is a coarser-growing plant, but still very beautiful. It is the *B. punctata* of some gardens, *B. nigricans* of others, but it is better and more correctly named as *B. heracleifolia nigricans*, the leaves being deeply lobed and the lobes deep green bordered with black; the spike is tall and erect, bearing quantities of blooms which are white flushed with rosy-pink. It comes from Mexico. G.

CHRYSANTHEMUMS.

THE PAST SEASON.

THE Chrysanthemum season that has just closed is the most memorable in the history of the autumn flower, and the same enthusiasm that worked such big results in the way of exhibitions through the length and breadth of the land will, we hope, be repeated next year, when the centenary of the introduction of the flower into England will be celebrated by the society especially devoted to its interests. It is safe to predict, if there is any certainty in prophetic utterances, that the present ardour for the Chrysanthemum will cool in 1891, when the centenary celebrations will have had their season, and things go on in the usual way. The outcome of such unwonted, if not excessive, enthusiasm is usually a relapse, followed by years of quietude, when the flower suffers neglect, if not oblivion, until again a new love springs up in the hearts of its former adherents. It is enough to deal with the Chrysanthemum in its present light, and briefly review a season that is full of good and bad features, teaching also lessons that intending cultivators may well make note of. The January and September shows that have now become established encourage a lengthened Chrysanthemum season, but it is quite a matter of opinion whether we want the flowers that we look for, and hail with pleasure in the fog and darkness of November, in the middle of January, or even through September and October, except such outdoor varieties as *Mme. Desgrange*, that makes bold blocks of colour in the garden, and gives handfuls of welcome bloom just when the waving shoots of Michaelmas Daisies are studded with opening flowers. Long continuance of even a good thing creates a certain distaste and indifference to it; but when a flower appears at one season only, it comes with a delightful freshness that lingers until the flowers again fade from sight. At the present rate of progress, we shall have the Chrysanthemum in one or other of its various phases from December to December, and then much of its present interest will disappear. The January shows so far, though tempting prizes have not been wanting to promote a satisfactory competition, have failed, if the intention has been to extend the season by new varieties. The exhibition at the Royal Aquarium last January was a show of a few varieties, as *Gloriosum* (by no means new), the violet-scented *Progne*, *Meg Merrilies*, *W.* and *G. Drover*, &c., none with the exception of the last on the list being old, and this novelty is a disgrace to the family. The shows are made respectable by the assistance of flowers proper to the season, as Chinese *Primulas*, *Cyclamens*, and berried plants, which quite over-

shadow the Chrysanthemums. The few notes that have appeared recently on Chrysanthemums for cutting show how by permitting the plants to grow naturally, that is, with but one or two stoppings, a house may be kept full of bloom until Christmas without effort, but the attempt to make January a reflex of November is to be deprecated in the true interests of the flower. The same remark may be applied to early-flowering varieties, except it may be to encourage outdoor cultivation by extending the list of such acquisitions as *Mme. Desgrange* and *Mrs. Hawkins*. This Japanese Chrysanthemum has a history that brought it speedy fame, but such a flower would have made quick progress in favour without the "law." It is the most useful new variety of 1889, especially as it can be grown outdoors in company with *Mme. Desgrange*. It will assuredly displace *G. Wermig*, from which it is a sport, as the flower is larger, fuller, broader, and of a far deeper shade of colour, as intense as a yellow Buttercup. It is this class of plant that should be encouraged, and all gardeners who want rich colouring in the beds in autumn will give their best attention to such things and Michaelmas Daisies. Some Chrysanthemum growers are so blinded to everything but purely show flowers that they see neither beauty nor worth in outdoor hardy varieties. The conference at Chiswick has sown some good seeds, and Mr. Haywood's reference to outdoor varieties will, we hope, bring forth rich fruits. It was a timely remark, as, in spite of the glory that surrounds the November Chrysanthemum, absolutely nothing has been done to promote a hardy race. That the Chrysanthemum is hardy, anyone who has visited hundreds of suburban gardens this season, or seen the groups in the London parks, where they continued fresh and fair for weeks, cannot deny; but there has been until now no earnest proposition put forward to make them popular. The old Emperor of China, figured in THE GARDEN, Jan. 26, 1889 (p. 69), under the name of Cottage Pink, is a true outdoor Chrysanthemum, blooming freely until November, and the bunch of flowers there shown in the engraving was gathered in the middle of November in 1888. Then we have the free-blooming *Julie Lagravère*, a variety that seems determined to flower itself to death, as every plant is covered with the precious burden. In last week's GARDEN (p. 580) a list is given of outdoor varieties with notes on the culture of the same, and I can agree with the selection there given. *St. Michael*, *Soleil d'Or*, *King of Crimson*, *Progne*, *Elaine*, *Snowdrop*, *Bouquet Fait*, and *Mrs. Forsyth* are all excellent for the open. They belong for the most part to other sections than the Japanese and incurved, and the reflexed are naturally more likely to withstand rains and dampness than the charmingly informal Japanese types. The incurved are of little value. Flowers of extreme delicacy of shading are no proof against smoky fogs and wet, as their purity of colouring will quickly be sullied by the elements; rather choose for the outdoor garden deep tints, as the yellow-flowered *Soleil d'Or* or *St. Michael*, and the rich crimson *Progne* and *King of the Crimson*, whose petals are so reflexed as to throw off heavy rains. The attention that has been drawn to hardy Chrysanthemums is one of the best points of the year that is past, and next season there should be a still more abundant display of the types named in the outdoor garden. There is plenty of time to make a commencement, as it will suffice if the cuttings are struck in the spring. A few of the prettiest effects have resulted from nailing the shoots to the wall, or passing along in front a thin wire to keep them in place, so that

the heavy bunches of flowers are well displayed. The wall in one suburban garden last November was sheeted with white flowers as pure as the finest *Elaine* under glass, and this by the simple plan here given. Another way would be to put the plants along the front of shrubberies and mix them with the dwarf shrubs in much the same way as Michaelmas Daisies should be planted. The Chrysanthemums have not the fairy grace of the Starworts, but the clusters of varied coloured flowers would be bright and acceptable. The controversy anent the big flowers should have done good service in setting forth the harm those who simply grow to gain prizes inflict on a beautiful flower, by stealing from it all the charming grace and freedom it naturally possesses; and another outcome of the controversy should be a change in the style of exhibition, something different from the monotonous rows of wooden boxes with flowers placed on them at regular intervals. Even if a more bunched way of showing the flowers is adopted, it will serve to relieve a formality of arrangement that is debasing to every man and woman of taste. Unflagging and persevering efforts made in THE GARDEN to bring the single flowers to the front have brought forth good results. This year this once despised race, and now even considered rubbish by those who hold up bulky exhibition blooms as the acme of perfection, has been more frequently exhibited than in any previous season. The flowers are shown too in a way that displays their charming expression, elegance, and freedom in a fairly true light, and we have received several valuable additions to which sufficient reference has already been made in THE GARDEN. Those who cherish graceful sprays of bloom should not fail in 1890 to have a selection of the best varieties, not forgetting the two finest, *Jane* and *Admiral Sir T. Symonds*.

Apart from the protests made against the present style of growing and exhibiting the plants and the indifference shown to hardy varieties, the season that is past tells of a greater reliance on our efforts for the raising of new varieties. This has been brought about in a measure by the rubbish sent from the Continent, and English growers are now raising their own seedlings, with so far encouraging, if not surprising results, as represented by such a flower as *Stanstead White*. This is only the beginning, but it is a new departure that will be assiduously followed up. In the present year the new incurved varieties have again shown an increase, and the list of Japanese types has been strengthened, but chiefly from the varieties introduced direct from Japan. It will be difficult to give us much that is really new, unless it may be an introduction from the land of its birth, as in the Japanese flowers there is almost every conceivable form and shade of colour. The Chrysanthemum season now past must be considered of unusual interest, and the controversies on certain points will, it to be hoped, bear good fruits in the year that is at hand.

Chrysanthemum Mrs. Alpheus Hardy.

In all that has been published in THE GARDEN respecting this Chrysanthemum, no mention has been made of the beautiful scent the flowers diffuse, far surpassing that of the lovely *Cullingfordi*, *Progne* or *Dr. Sharpe*. I have flowered the two cuttings sent me on April 28. One is just about over, the other now at its best. The blooms are not very large (about 5 inches in diameter), but quite as good as might be expected in so short a time. It is a lovely flower and quite deserving all that has been said in its favour, and will, I fancy, figure well among the best Japanese white varieties

next year. Being so sweetly scented, it will be a great favourite with all lovers of large blooms. This variety must be grown largely in order to bring out its characteristic points. In my opinion there is more beauty in one large grandly grown bloom than in a score of small ones, however useful they may be.—JOHN EASTWOOD, *Telegraph House, Great Yarmouth.*

SPOILING THE CHRYSANTHEMUM.

MUCH has been written lately in THE GARDEN deprecating the method most generally adopted in the culture of the Chrysanthemum. In Paris the craving appears to be for the biggest blooms, provided they possess all the other good qualities. One of the largest French growers assured me that the public would not look at a small flower if they could obtain a large one. I have lately been brought into contact with owners of gardens and gardeners in many parts of England, especially in the northern counties. The owners say we must have large blooms of Chrysanthemums, and the gardeners say we must grow them. A true lover of Chrysanthemums rejoices to see them in any form. I do not consider that only one method of growing them ought to be practised. Let us have them in all ways, and let everyone please himself according to his ideas and circumstances. My reason for upholding the method of large bloom cultivation so strongly is that in this way the characters which every variety possesses are brought to light. This cannot be if what is termed a decorative system of culture is practised. In many cases there is no comparison between the blooms produced under the two methods, as often they are hardly recognisable. Especially does this apply to the form and colour of the flowers. For example, I will name one variety which under the bush method of growth would not rise above any of its compeers. I allude to *Avalanche*, a variety which is extolled by all when seen at its best. What makes *Avalanche* such a favourite, I would ask? Is it not the mass of snow-white florets piled one on the other in a graceful manner, each petal recurving slightly? What made *Avalanche* so popular both in the exhibition building and upon the plants at home? Did not the large bloom method of culture bring this about? Does Mr. Riddell call *Avalanche* in its best form an abnormal and an unnatural production? Did ever Mr. Riddell place before a lady a single bloom of *Avalanche*, for instance, and a graceful spray of any other variety at the same time and note silently the one which she preferred? Does Mr. Riddell well consider what he asks in his closing paragraph, "that societies should offer prizes for plants and flowering stems naturally grown"? because the use of the word "naturally" grown may mean very much more than he seems to think. It is necessary to ask, What is a "naturally" grown plant? I contend it is one that is allowed to ramble away at will after the cutting is inserted, and not to be topped or stopped in any way. What would such varieties as *Mme. C. Audiguier* or *Belle Paule*, both excellent varieties in the Japanese section, be if allowed to grow "naturally"? If by "naturally grown" Mr. Riddell means topping the plants at 2 inches or 3 inches high and afterwards allowing them to assume their natural growth, then I agree with him that beautiful plants are produced. In that case then he, I think, must drop the words "naturally grown," because the actual topping will prevent its use. Here this season we grew *Mrs. G. Rundle*, *Lady Selborne*, and several other varieties under the method of pinching out the point of growth early, so as to induce a bushy growth; afterwards all the shoots were

allowed to extend and develop all the flowers they showed. Such plants were lovely objects for conservatory decoration or for providing cut blooms in quantity.

Much has also been written against the method of staging cut blooms at exhibitions, but beyond suggesting that they be shown with foliage and buds intact, I have not seen any practical suggestions how they ought to be staged. With regard to showing such varieties as *Novelty* and *Prince Alfred*, for instance, which have weak peduncles, how would they stage these? And again, how would they deal with such sorts as *Fair Maid of Guernsey*, *Pelican*, &c., which have peduncles quite a foot long? How would they exhibit these with foliage? If they will advance some sort of method, I shall consider that some end has been gained. Has not the National Chrysanthemum Society offered prizes for the best method of staging cut blooms without the objectionable cups, &c.? What was the result? Never at any time more than three or four competitors came forward, and the style adopted was quickly forgotten. The Southampton Horticultural Society for several years offered prizes for twelve blooms to be shown with their own foliage attached. What was the result? Such a miserable failure, that one never hears this class mentioned now. At the recent exhibition at Chiswick in connection with the conference I staged eighteen varieties of the single and pompon sections in long sprays, just as they were grown without disbudding, with the result that for one person who stopped to admire them, twenty passed them by in their eagerness to get near other blooms staged singly in the orthodox style. With regard to the insertion of foreign petals into the flowers with the aid of gum, the notion is too absurd. When writers talk about how the Japanese varieties have been "dressed" it exposes their ignorance, because a well-grown bloom of this section never requires any assistance to make it look well. Dressing the Japanese kinds is altogether new to me and to others who understand the growing of them.—E. MOLYNEUX.

— The questions opened up by "J. I. R." and Mr. J. Riddell are of such a character that I cannot refrain from adding a few words to the discussion. First, touching the "big bloom" craze. I do not think that anyone with the least pretensions to taste in such matters would maintain that the huge flowers in a winning stand possess any appreciable amount of either beauty or usefulness. I believe every flower to be more or less beautiful in its way, but undoubtedly these giant blooms have been robbed of every particle of elegance, while the way in which they are set out in formal rows on bare boards without any foliage or natural greenery of any kind still further detracts from their charms. As regards use, they are, of course, utterly worthless, except to win the prize, if they can.

There is, however, another side to this part of the question. The overgrown, overfed blossoms which "J. I. R." so strongly condemns, and yet in a great measure so rightly, are, in the first place, a direct evidence of skill on the part of the grower; and secondly, a source of great attraction to an unfortunately very large section of the general public, who must, of course, be pleased if the exhibitions are to prove successful financially. Ever since Chrysanthemum shows have been held in this country growers have been endeavouring (and have succeeded but too well) in growing the flowers to a larger size every year, and it cannot be expected that they will consent to part with their hobby all at once. Then, as regards the general public, the rage just now is for "big things" in every direction. True beauty is but little appreciated, while mere size carries the day.

Though both the incurved and Japanese sections suffer severely from being huddled together in the

manner to which I have already referred, the Japanese flowers stand the ordeal much better than the incurved, whose delicate beauty is completely destroyed in this way, whether ranked in rows on a board or huddled together in groups. I must totally disagree with "J. I. R." in his too severe strictures upon the incurved Chrysanthemum, an individual bloom of which—especially of the pure and blush-white, cream-coloured, and golden varieties—I regard as an extremely beautiful object, though I cannot say that I can see much to admire in the dull red and sickly purple flowers that we seem unable to improve upon in the deeper hues. But when shown as they are at present, whether as cut blooms on the tables or in groups, their charm is completely lost, their formal outline and delicate hues degenerating into dull monotony. In fact, I think they look far worse on a stand than double Dahlias, whose brighter colours and bolder character enable them to stand the trial more successfully. In the same way the greater irregularity and variety of form, combined with their richer colouring, cause the Japanese section to suffer somewhat less.

The complaint made by Mr. Shea (p. 531) is well timed. As he justly remarks, the "best twelve," however admirable (if not beautiful) in their way, become wearisome from their constant repetition, so much so that anyone conversant with the subject would have little difficulty in naming the majority in a winning stand of twelve without looking at it. This is not right, and by all means let us have classes for forty-eight or even seventy-two totally distinct flowers; in the Japanese section at any rate there is plenty of material for the purpose.

It is, I am well aware, very easy to find fault, but it is a much more difficult matter to point out a remedy, and totally impossible to please everybody as long as tastes differ. I would therefore suggest that instead of having the ordinary classes multiplied to the extent they generally are at present, we be allowed at least a few for (1) naturally grown specimens; (2) single blooms set up with foliage, and with some attempt at artistic arrangement; (3) natural sprays (cut) grown without disbudding, and shown either singly or in threes; (4) extended classes for Japanese varieties at any rate; and lastly, bunches of naturally grown flowers of varieties suitable for cutting. In this way those who admire huge blooms can have them, and the more æsthetic section gratify their taste at the same time.

I do not think that a moderate amount of pinching could be dispensed with or should be condemned. Some excellent varieties run up naturally to an absurd height if unstopped, and in many instances nice dwarf bushy specimens could not be produced without it.—B. C. R.

— As triumphs of cultural skill I always admire the large Chrysanthemum blooms seen on exhibition tables, and still more so the magnificent specimen plants at the shows, but as to beauty, the less said the better, for to my mind nothing could be more ugly and unnatural than the present system of exhibiting trained plants of Chrysanthemums. That it is absolutely necessary to give plants that have to be moved any distance an amount of support that causes them to have an appearance of stiffness, I admit, but I certainly fail to see any beauty or utility in twisting and contorting the stems until the plants more resemble an over-grown Mushroom than anything else. For general decoration such plants are utterly useless, while the amount of time requisite to train them into the orthodox style deters many a would-be exhibitor from entering the lists. I hope this discussion will do good in inducing someone to exhibit naturally trained plants at some of our great shows next autumn, and so break through what has become an almost universal system, and give the general public a chance of comparing these artificially trained plants with those of a more natural style even if they fail to find favour with the judges.—F. B., *Hants.*

Chrysanthemum cuttings.—An acquaintance of mine informed me a few days ago that some plants

he raised from cuttings obtained from an exhibitor of Chrysanthemums failed, to his great disappointment, and he fancied the failure might be traced to the plants having been subjected to a good deal of feeding. I am not sure there is anything in it, but it happens that a list of Chrysanthemums has just come to hand in which the practice of taking cuttings from highly-fed plants is condemned.—R. D.

SINGLE CHRYSANTHEMUMS.

As regards Chrysanthemums, there is no section or class that I admire more than another, as I have a general love for them all. I must not be expected to join in the chorus of "spoiling the Chrysanthemum." Exaggeration seldom makes converts, and however loud the cry may be raised of "mops on hop-poles," there will be no results so long as Chrysanthemum societies offer the liberal prizes they now do, and which can only be won with large flowers, not with coarse "mops." Such exhibits as these are passed by all good judges in favour of huge, but graceful blossoms, such as *Avalanche*, *Thunberg*, *Ralph Brocklebank*, *Fair Maid of Guernsey*, *Martha Harding*, *Mlle. Lacroix*, *Elaine*, and dozens of others of the Japanese section. As regards the much abused incurved section, they are, I think, very grand, and if exhibitors would but follow the just now prevalent epidemic, and "strike" against the use of tweezers and "dressing" in general, we should, I think, then hear little about "spoiling the Chrysanthemum." But now a few words as to the single varieties. I appreciate greatly the section as a whole. This is not entirely my own doing. My employer likes them and the ladies—almost without exception—admire them at first sight. Nearly all the varieties are sweet-scented, and all last a long time in good flower either on the plants or in a cut state, and the late season of flowering, till past Christmas, is perhaps the strongest reason of all why they deserve to be grown in large numbers. Some few of the varieties are of a rather straggling habit of growth, but this can to some extent be remedied by stopping or pinching out the points of the shoots. The bush form of growth is that which suits the section best, some plants that were struck at the end of February last being at the present time huge bushes 30 inches in width and about the same in height, and each plant is carrying from eighteen to forty large trusses of flower. Our collection is not large, and it contains but few of the best varieties when compared with the magnificent display in this section made by Mr. Molyneux at the recent Chrysanthemum conference at Chiswick.

The following are a few of our best varieties: *Miss Rose*, one of the earliest to bloom; the flowers are small, a couple of inches across, petals quite flat; colour pale rose, which as the flowers age becomes nearly white. The habit of growth is dense. It is the best variety for growing in bush form for conservatory decoration. *Jane* is a flower of the very opposite type; it is pure white, the petals slightly fluted or quilled and twisted in a most peculiar way, all falling sideways, after the fashion of a catherine wheel. We have had flowers of this variety quite 6 inches across. They are borne in large trusses of from five to nine flowers each, the central bloom being generally very large compared with the outer ones, though some of these measure quite 4 inches across. This variety and a small golden-coloured one named *Lady Burke* receive much attention from the ladies. The latter is in colour as golden as a *Buttercup*, and about the size of half-a-crown. It has a double row of flat petals that slightly reflex, and give to the trusses of flowers a sort of feathery appearance that compels admiration. Another good yellow flower is the variety *Canariense*. It is double the size of the preceding, and it is quill-petalled and very sweet. The plant is of straggling growth, and requires to be pinched frequently during the growing season to make a good plant of it, a process that makes it late in flower, but this is an advantage rather than otherwise, seeing that there are plenty of others that flower early. *Mrs. Langtry* belongs to the smaller flowered section, but the trusses are large and freely produced;

colour rosy purple, very strongly perfumed. *America* is the largest flowered variety I have yet seen. The colour is a rosy white, and changes with age to almost pure white; it has long drooping fluted petals; the trusses are well borne up above the foliage on extra stout stems, so that staking is not necessary. *Miss Gordon* in colour is light lilac and is what may be described as a "ragged" flower, because the petals all droop, and of form there is none, for the flowers hang about in every direction, yet are so freely produced as to make the variety worthy of inclusion in every collection. *White Perfection* is truly a perfect type of a single flower. The petals are broad, quite flat, and hold themselves as stiffly as if they had been made to do so by artificial means. *Nellie* is in colour a bright purple, but in every other respect I class it as the counterpart of *Mrs. Langtry*. The last I shall name is *King of the Yellows*, a massive flower, having a double line of wide stout petals. They are well thrown up above the foliage, and are produced in the greatest profusion; indeed, this latter is a trait that may justly be applied to all the single varieties, though, as a matter of course, some kinds are a little more so than others. In conclusion, let me advise all who are anxious to have good flowers at this season and at the smallest cost to grow single Chrysanthemums.

W. WILDSMITH.

CHRYSANTHEMUMS FOR MARKET.

THE statement recently made in THE GARDEN that only late blooms make remunerative prices is not quite correct. The grower for profit now has a long season, which commences in September and which may extend to February. It is with the Chrysanthemum as with everything grown for profit, good prices cannot be expected when markets are glutted, and this in ordinary years is seen to be the case from the beginning of November until the middle of the following month. Winter is not so far advanced but that the influence of autumn is still felt, and the blooms do not therefore last any great time in perfection, the consequence being that large quantities are every week poured into Covent Garden and other large markets. This year November came in with spring-like mildness, damping, owing to the misty weather, prevailed to an alarming extent, and it was simply a question of getting something for the blooms instead of seeing them rot on the plants. A peculiar and unfortunate combination of circumstances operated against Chrysanthemum growers this autumn. In many places, especially round London, a sharp touch of frost in September struck terror into the hearts of those who were half ruined by the disastrous frost of last year, and they hurried to get their plants in, casting all consideration of retarding the blooms on one side. Then came a month of abnormally fine weather and the plants pushed along at a rapid rate, so that in the south many exhibitors of this flower were at their wits' end to know how to keep the blooms back, having, moreover, to combat the damp atmosphere that in many instances destroyed the huge specimen blooms. Sharp though the September frost was, it did no serious harm to Chrysanthemums, only a few forward flowers of *Mme. Desgrange* being touched, and thus the indoor growers had to contend with an abnormally favourable time for outdoor blooms, which are grown by the acre in some market gardens. This already large amount of bloom was swelled by great importations from the Channel Islands, the growers there having, as might be expected, found how well their comparatively frost-free climate suits the best autumn blooming kinds. Then, again, the frost that did damage to tender plants was only partial; it left many districts untouched, and, strange to say, whilst *Dahlia*s were blooming and runner *Beans* still bearing well in the north, in most gardens here, twenty miles south of London, there was hardly an outdoor flower left. It is therefore easy to understand that mid-season Chrysanthemums were this year of less value than is usually the case.

The fact that the prices went up ten per cent.

or more, immediately after the sharp frosts lately experienced, shows what the outdoor supply of bloom must have been during the first three weeks in November. It must be admitted that Chrysanthemum growers during the last three years have had a bad time. Last year the losses from frost were simply heart-breaking, and the previous year quantities of plants were spoilt, or so much injured as to render them profitless; and now that this season they have been saved the bloom has not been worth much. A grower at Tottenham, with whom this flower is a most important item, had the majority of his late blooms open in the middle of November. They were worth nothing then, and he was trying to keep them as long as he could. But it is, of course, difficult to keep a bloom that is fully open by mid-November up to the middle of the following month; whereas flowers that open from the beginning of December will keep in good condition quite a month. My impression is that fertilisation has something to do with it. It is not likely that flowers only fully open late in December will get fertilised, and in addition to the absence of strong light and natural warmth, this may be one reason why they last so long in perfection. As I have before mentioned, the Chrysanthemum season commences much earlier, one may safely say six weeks sooner than formerly. *Mme. Desgrange* leads the way, and it is astonishing what a quantity of this flower, both in a cut state and in pots, is annually disposed of. It is really without a rival at that time of year, and the raiser of this wonderfully valuable Chrysanthemum deserves a gold medal, for I doubt if any flower raised during the last twenty years has been grown to the same extent. It is grown not only by those who supply the London markets, but by large and small florists, who formerly had some difficulty in satisfying the demand for really good white flowers at that time of year. It is grown by the acre by market gardeners within easy reach of London, in some instances being lifted and put under cover, in others reliance being put on a covering of some kind. This, however, proved but a broken reed last year. A grower near here had two acres covered with frigi domo, but last season and the year before the blooms were almost totally destroyed before any of them could be sent to market. There are several good October flowering kinds, but the grower who wishes to make the most of his glass will do well to concentrate his attention on *Elaine*, which is the queen of autumn-blooming Chrysanthemums. When this gets the best culture, blooms realise as much as those late kinds that are ready in December. I have known blooms of *Elaine* to make 6d. each in October in the London markets, but they were, of course, produced by plants that had been cultivated in a manner not much inferior to that followed in the case of plants grown for exhibition blooms. This comes in well before the general blooming time of the Chrysanthemum, and there is no other white variety that can compete with it. The growers of *Elaine* practically have the market to themselves, and if perchance a severe frost should, as last year, ruin open-air flowers of all kinds, a good houseful of *Elaine* represents money. Last autumn London growers made as much as 12s. per dozen blooms of this Chrysanthemum, and in our fickle climate, liable as we are to such autumnal visitations, there is always the chance of the value of such fine white flowers running up fifty per cent. in two or three days. To those who are not likely to grow Chrysanthemums in quantity, I would say let the month of November go, and grow nothing that cannot be kept until the following month. The great proportion of those fine incurved and Japanese kinds that are to be seen in such glory on the exhibition table should be left entirely alone. They are good in their way, but the needs of amateur growers and of those who grow for profit are quite distinct. I know that the midseason kinds are largely grown, otherwise the London markets would not be so well supplied with them, but those who do so make a great business of Chrysanthemum culture; they take the season all through, and generally have a stand in the market, thus getting full value for their produce by saving

intermediate profits. These kinds of Chrysanthemums must be produced in large quantities to pay, the profits being small, but taking one season with another they do pay; those who keep touch with the popular taste know what varieties are for the time being likely to be most in demand. It requires constant intercourse with the principal markets to be able to thus feel the pulse of the popular fancy, and the man who does not make his weekly visit to them had better leave the production of that class of flower to those who can accurately gauge the coming demand, for this is the only way by which the production of a low-priced flower can be made to pay even moderately well. These remarks do not apply to late blooms. The one great point is that white blooms are always wanted, and that the better and later they are the higher is their value. I venture to assert that the man who could plentifully produce Princess Teck or Elaine blooms of high quality at the end of January would soon put himself beyond the need of growing Chrysanthemums for a living. Confining these remarks within the bounds of practicability, there is no reason why such kinds as Princess Teck, Fair Maid of Guernsey, Boule de Neige, and Ethel should not be had in good condition at Christmas, and at that time the prices are good enough to make their culture fairly profitable. My advice is, be in advance or behind the general blooming time of the Chrysanthemum if you want to make its culture pay.—J. C., *Byfleet*.

— In answer to "C. L.'s" inquiry as to the above (THE GARDEN, Dec. 7, p. 534), the returns referred to (Nov. 23, p. 472) were made some seven or eight years ago, when competition was much less severe than now. In the instance given the bloom was disposed of at fair retail rates, not wholesale, the price averaging about 2d. or 3d. per bloom, the flowers being of only moderate size. A very different state of things exists now, and growers are often compelled to take whatever they can get for their produce, though they may be well aware that the sum realised is much below the actual cost of production. As a grower of Chrysanthemums for the market as well as retail trade, I should reply to the question with which "C. L.'s" article commences by a decided "No." Speaking generally, Chrysanthemum growing is very much overdone now, and unless one is favourably circumstanced as regards production, and possesses a thorough knowledge of the subject both as a grower and in regard to the requirements of the market, the chances of making any profit are very small. What a change from the time when fairly good blooms of Mrs. Rundle and other good white varieties were realising from 1s. to 2s. apiece in the market! Now one cannot get rid of them at 1s. a dozen.

Speaking generally, the only chance of making a profit is, as "C. L." says, by growing only early or late (but not too late) flowering kinds. An early batch of well-grown Mme. Desgrange usually pays fairly well, either as cut flowers or pot plants. I did very well out of the latter last year, easily making 6s. a dozen for well-bloomed plants in 6-inch pots, a very fair price, but not so good this season. Again, any nice fresh white, crimson, or clear yellow flowers (especially the former) will realise 3d. or 4d. and perhaps 6d. apiece just before Christmas, and, indeed, the last two weeks in the year are much the best for cut Chrysanthemums, the price being generally fairly remunerative.

The character of the season, again, makes a great difference in the market price of Chrysanthemum flowers. When an early frost occurs and cuts off all the outdoor plants, perhaps crippling the stock in pots of growers in exposed situations as well, those who are fortunate enough to preserve their flowers often do fairly well. But in a season like the one just past, when the open-air plants remain productive until late in November, prices go down with a run, and the indoor flowers must go for what they can bring. Some of the large market growers near here were selling a small armful of coloured blooms for 2d. or 3d., and a huge bunch of pure white flowers for 6d., all from under glass, in November last, and all that a friend of mine could get for a beautiful batch of Lady Selborne,

in 6-inch pots with a dozen to a score of blooms per plant, was 2s. a dozen.

The culture of Chrysanthemums necessitates a lot of labour, and therefore of expense. The plants must be grown on for eight or nine months at least; while, besides potting, staking, tying, housing, and watering, the large pots are expensive. The only alternative is to plant out, lift, and house the plants with balls, but this is often productive of ill-formed or imperfect blossoms.—B. C. R.

FLOWERS FOR EXHIBITION.

IGNOMINIOUS failure is supposed to be the lot of all who try to please everybody, but I hold this old truism does not apply to an intelligent Chrysanthemum grower who makes up his mind to break through the rule. As I shall attempt to demonstrate, there is no great difficulty in meeting the tastes of all who love flowers, and that, too, without the grower depriving himself of a little recreation, profitable or otherwise, in the shape of a few dozens or it may be hundreds of plants cultivated specially for producing show blooms. I also maintain that if gardeners generally would honestly attempt to meet the wishes of all whom they are called upon to consider in their arrangements, we should hear fewer complaints of the uselessness of trained plants, the too great height and fewness of blooms carried by plants intended to produce the finest examples of prize-winning flowers, of the pooriness of the ordinary conservatory plants, and the scarcity of cut blooms generally. It appears to be a prevailing idea that a would-be successful exhibitor of cut blooms must grow a great number of plants in order to have plenty of blooms or a sufficiency at one particular time. What I would term, without any disparagement intended, a professional exhibitor, that is to say, one who competes at numerous shows in various parts of the country or wherever good prizes are offered, doubtless finds it necessary to grow from 700 to 1000 disbudded and much-pampered plants, but the ordinary exhibitor ought to find from 200 to 300 plants ample. To prove this I have only to mention that a Taunton gardener with only about 300 plants to cut from was not only very successful at some of the principal shows in or near the metropolis, this being early in the season, but he also did well at local shows, finishing up with a grand exhibit of forty-eight blooms at Birmingham, where he was an exceedingly close second and secured a £15 prize. As it happens, many of the houses (principally vineries and Peach houses) where the plants to produce show blooms are grown are not wanted for any other purpose, and not unfrequently are not adapted for housing dwarfier plants. Let the exhibitor then be careful not to raise more tall plants than he has good room for, also using great judgment in his selection of varieties, on no account growing any that are known to be of little value, owing to the introduction of superior sorts, for exhibition.

In growing these tall plants, the blooms of which cannot be enjoyed, according to Mr. D. T. Fish, without the aid of a step-ladder, it might be imagined the gardener is pleasing himself only, but such is not the case. I have given them a fair trial and have since tried to do without them, and not a creature I am acquainted with was pleased with what I considered my self-abnegation. We must either grow some fine blooms or be thought behind the times. When our Chrysanthemums are in bloom it is an understood thing that all who care to see them can do so if they choose. We get a great variety of visitors, but when there were few or no large blooms to see much disappointment was expressed generally. They (the visitors) do not object to "craning their necks," and would readily ascend steps to closely examine their favourites. Tastes naturally differ considerably, but, as a rule, we can please them all. If incurred varieties are preferred, they can have either large or refined flowers in various shades and with no ugly eyes, and, as far as my experience goes, the rich yellow Jardin des Plantes pleased better than any other flower grown, the colour, however, not

the formation of the flower, being the attraction. The Japanese varieties naturally please the most, the various extraordinary forms and colours as well as great size all giving far more pleasure when seen on the plant than when shown on stands. For large vases suitable for front halls these big blooms are in great demand, while nothing attracts more admiration on the dining table than a judicious assortment of fully developed blooms in specimen glasses. For the latter purpose the demand is largely on the increase, many thousands of them being grown either for marketing or for house and table decoration by gardeners who never think of competing for prizes.

For conservatory decoration and for affording abundance of cut flowers, the preference ought to be given to more naturally grown plants than are often seen, the old-fashioned plan of stopping often to get a large number of shoots, each requiring a separate stake and yet producing comparatively small trusses of bloom, being even more objectionable than much disbudded plants. I draw the line altogether at formal trained specimens, these pleasing very few, however well they may be done, and proving most distasteful to everybody when only poorly grown. Perfectly trained plants, both tall and dwarf, may be considered indispensable at exhibitions, but they usually present a poor appearance in conservatories and greenhouses. There is no reason, however, why even these should not be grown if the owner of the garden is pleased with them. The grower of conservatory plants has an almost unlimited selection of varieties suitable for the purpose, and if he is wise room will be found for some of each section. Well grown and not much stopped, many of the incurved, and still more of the Japanese, branch and flower grandly; while for the front rows the beautiful Anemone-flowered, as well as the graceful single and the equally pleasing pompon varieties are simply invaluable. We find that most of the old Anemone-flowered, as distinguished from the Japanese Anemone varieties, as also the singles and pompons, can be potted up readily from the open ground. We shall have the charming single white Snowflake at its best for Christmas, and other varieties seem much later when potted up from the open ground. By adopting the plan of planting out a number of each section, some to flower where they are, and still more for lifting and flowering in various positions, there is much less danger of their being neglected in favour of the disbudded plants.

Our tall plants produce a considerable quantity of serviceable bloom after the first flowers are cut, but we do not depend exclusively on them for a late supply, but grow as many as circumstances will permit of Boule de Neige, Fleur de Marie, Lady Margaret, Golden Gem, Princess of Teck, Hero of Stoke Newington, Belle Paule, Carew Underwood, Fanny Bouchariat, Gloriosum, Moonlight, Grandiflorum, Ethel, Yellow Ethel, Meg Merrilies and Ralph Brocklebank especially for the mid-winter display. On the whole, I venture to think we manage to please everybody fairly well, and see no reason why others should not be equally as successful. W. IGGULDEN.

SHORT NOTES.—CHRYSANTHEMUMS.

Late Chrysanthemums.—A small gathering of late Chrysanthemums from Mr. Iggulden is welcome at the close of December. The flowers, which are of full size and characteristically coloured, were cut from side shoots. The varieties are Belle Paule, Baronne de Prailly, remarkably late for so early a variety; Carew Underwood, and Mr. H. Wellam.

Chrysanthemum Mme. Desgrange.—This is the best of all open-air varieties. I have grown it extensively for eight years and it has never failed to be most effective. I leave it out all the year round; the old stems are cut over in December when they have done flowering. The young growths are up and active in April and the whole of the roots are lifted, divided, and replanted. It begins to flower in June, and continues until November or later. It is never staked or tied up. It is invaluable in small gardens or pleasure grounds, and it is

particularly valuable to all who do not wish to be troubled in wintering too many of their summer flowering plants under glass.—J. MUIR, *Margam*.

FLOWER SHOWS AT THE ROYAL AQUARIUM.

I FOR one fully agree with "A Flower Lover" (p. 488) in his remarks upon the above subject. I consider it a standing disgrace to the National Chrysanthemum Society to hold their shows in such a building. The last time I went there I was so disgusted, that I determined never to go again unless actually obliged, and have not done so since. The hall was full of fog and smoke, which seemed to take the colour out of the flowers, while the general effect was entirely spoilt. The crowding, noise, and conditions generally are unfavourable in the extreme to the enjoyment that one expects to find at a flower show of any kind. I have often heard gentlemen's gardeners complain of their having to exhibit where the ladies of the family could not think of going. At the Crystal Palace the surroundings are admirably adapted for such displays. The abundant space, comparatively pure air, superior class of visitors, good music, and other attractions combine to render this perhaps the best place for a flower show in or near London, and I must say I always enjoy anything of the kind more there than anywhere else, except perhaps when held in a large and well-appointed garden in the country when the weather is warm and fine. But the Palace is always warm, dry, and pleasant; while the plants and flowers would suffer less in a week in the great glass-house at Sydenham than in a day at the Aquarium.

Flower shows generally are too frequently voted "dull and monotonous" by the public at large. I do not find them so myself; but as we want to interest "the million" in our flowers as much as we can, I think that more might, and should, be sometimes done to make them more generally attractive. For one thing they are frequently much too stereotyped, more novelty or variation in both materials and arrangement being highly desirable. Good music is always an attraction, but many people get away as soon as they can from hearing a third-rate band rattling through dance music and "popular" airs.

B. C. R.

Novel tree-staking.—The local boards have a strange way of planting trees that everyone should be careful not to follow, but a still funnier way of staking the trees to give them support. A specimen of their work in the staking of the trees may be seen in the main road at Chiswick. The trees have been planted about a year, and around each is a proper iron case to prevent injury to the stems by thoughtless youths and boys. But the authorities have taken a false step and put to each tree a square pole about 4 inches by 3 inches, and four times as thick as the young sapling. This pole of rough deal hides the stems of trees, disfigures the road, and hurts the roots through which it is driven. We suggest that the local boards or whoever is responsible for the planting of trees in the streets should have competent men to attend to such things, not unskilled labourers, whose ideas of planting are as crude as their knowledge of trees in general. It seems also that one way in which the local boards employ men in winter is to set them to prune the trees under their care. One unfortunate specimen near the Vestry Hall, Chiswick, was so vigorously and ignorantly top and root-pruned two winters ago, that it speedily died.

A natural frost register.—I have been in the habit for years of glancing at the leaves of a certain Rhododendron, and by use I have come to learn how much cold there exists within a degree or two from the angle of the leaf in relation to the stem. Anyone who cares may do the same. Of course, one tree must be pitched upon. Mine is a *R. ponticum*, and near a north-west bed-room window. I am not claiming much for this natural frost-gauge, but when one grows accustomed to its use it is certainly more convenient to look out of the window

at a tree than go out of doors on a frosty morning to read a thermometer. The leaves are more or less bent back according to the intensity of frost, and in order to learn the degree of cold represented for a little time, comparisons should be made with a given tree and the glass, though in time it will be learned without.—J. WOOD.

MARKET GARDEN NOTES.

CHINESE PRIMULAS.—These have been a drug in the London market for some time past, and in many instances the only way of making anything from them was by cutting the bloom. One large grower at Tottenham had in November several houses full of plants of the best white and red-fringed strains, that one would have thought would be sure to sell well. I was assured that there was absolutely no sale for them, and that he took one market day sixteen dozen to Covent Garden and did not get a bid for them. This is exceptional, but I think in any case it is unwise to time the blooming of the plant so that it comes into flower just when the Chrysanthemum season is in full swing, and when there is a liability of flowers coming in fairly plentifully from the open air. When people in towns can buy a good Chrysanthemum in a pot for 6d. and quite a handful of showy flowers for the same price, they are apt to overlook the more modest merits of such things as Primulas and Cyclamens. The Chinese Primrose is a winter and early spring flower; its time for appreciation arrives when the glory of the Chrysanthemum wanes. No doubt the wonderfully mild weather in November made a difference of a fortnight or more in the blooming of the forwardest plants, and it is seldom that we get such weather at that time of year. The fact, however, that Primulas are not really wanted when the full Chrysanthemum season is on should always be borne in mind by those who wish to make a paying price of their plants. Plants that are now coming into bloom are sure to sell fairly well, and just at Christmas and the new year there is so great a demand for white bloom, that good, well-flowered specimens of that colour are not likely to remain long on the grower's hands.

CHRYSANTHEMUM FAIR MAID OF GUERNSEY.—With the commendatory remarks that have lately been made on this variety I entirely agree. I cannot help thinking that it should under judicious culture be one of the most profitable Chrysanthemums the market grower can take in hand. As regards its effectiveness there can be no doubt that it is one of, if not the most showy white kind we have, but looking at it from the market grower's point of view, one cannot help being impressed with the fact that it yields in proportion to space occupied an exceptionally large number of really good marketable blooms. There is much difference in the room that the various varieties take up owing to the character of their foliage. Fair Maid has leaves so small that one wonders how they suffice to bring such a large flower to perfection, and the consequence is that the plants may be stood so close that they seem all bloom. I have some in 8-inch pots that carry about twenty blooms, each from 3 inches to 6 inches across, and which are just the right size for making up into good marketable bunches. Flowers of this size display no coarseness, and they are so pure in colour that the value of this Chrysanthemum is scarcely second to that of Princess Teck. I do not know how well this variety may be suited to the planting-out system, but next year I intend giving it a fair trial. All Chrysanthemums do not thrive well under this treatment, some of them making so few fibrous roots that the lifting in the autumn is attended with some risk.

TOMATOES.—Some growers assert that Tomatoes have not paid this year, but I should say that where this has been the case either the culture must have been at fault or the best kinds have not been grown. However well the old red may be suited for early work, it is quite superseded by the varieties of the Perfection type. A grower here made 5d. per lb. during the summer and early autumn, the price gradually rising until the best fruit now

makes 1s. per lb. With good crops such prices must pay, for a great weight can be taken off plants that have been well grown. It must, however, be admitted that this season has been more than usually favourable to growers of indoor Tomatoes, and I think it will be found that the latest crops have been by far the most remunerative. The disease and in some places the early frosts destroyed large breadths of outdoor plants, the fruit of which in good years reduces the prices to a low point. Free to a great extent from this competition and favoured with bright sunshine in September and a mild November, the latest fruits ripened up and were sent to market when there was nothing to compete with them. It is, however, certain that there is no chance of profitable returns if the fruit is not far in advance as regards quality of the foreign supplies. It is all very well to have quantity, but if this does not go hand in hand with quality, there is but little chance of a paying price being made. There is, moreover, no excuse for growing kinds that do not take well in the market. The Perfection varieties swell up their fruit to a great size, and if there are less in number, the aggregate weight is as much as when a larger number of smaller fruit is produced. J. C. B.

Stott's Monarch Rhubarb.—I have grown this variety for ten years. It is very productive and distinct. Its stalks are quite green, and attain a length of about 2½ feet. I have had them 16 inches in circumference. When the plants are grown widely apart or isolated, the leaves are often as much as 4 feet in diameter. I have not forced it, but for general use it is very valuable.—J. MUIR.

The Dwarf Furze (*U. nanus*).—I have been disappointed because several readers said this ought to be got in some of the nurseries, and I have not been able to find it. This is disappointing, as it is a pretty plant, quite distinct from the common Furze, and useful in other ways. Perhaps some reader may remember where there is a stock of it and kindly send me a note.—R.

Vegetation for sharp inclines.—Banks which are very perpendicular are not easily kept clothed with vegetation. Turf will succeed on them at certain times of the year; but in dry, hot weather the Grass is generally so much injured that it is unsightly for a long time. The best of all vegetation for such positions is Ivy, and the common English and Irish varieties are the most suitable. If planted in winter and established before the drought of summer affects them they will do well.—J. MUIR.

Making lawn tennis courts.—I have to make two lawn tennis courts side by side in the park. The ground slopes to the north and east, the north-east corner being about 2 feet lower than the south-west. Must the ground when finished be perfectly level? What is the exact measurement of full-sized courts and the space between, also the margin needed outside the courts?—SURREY.

Indian method of propagation.—The Indian method of propagation described by Mr. C. Maries in last week's GARDEN (p. 582) appears to be exactly the same process as the method of "air-layering" to which I invited attention in THE GARDEN of last Sept. 21 (p. 259).—WILLIAM MILLER.

Names of plants.—Bec.—1, *Thuja gigantea*; 2, *Juniperus chinensis*; 3, *Biota orientalis*; 4, *Retinospora obtusa*; 5, *R. plumosa aurea*; 6, *Biota* var.; send better specimen.—A. H.—(*Quercus Lucombeana*).

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WOODS & FORESTS.

AUTUMN LEAVES.

A FAINT characteristic odour of a not unpleasant nature rises from the fallen brown leaves, as one walks over their crisp rustling forms. From the boughs overhead they fall frequently, but gently to the earth, though scarcely a breath of air be stirring. A little while ago their now sere forms were green, and so vigorous that they withstood the strongest gusts. Whence this change? The only answer is that they have run the course of all living things; they have fulfilled their functions for the requisite period, and are now dead. They are no longer needed to perform their wonderful work of manufacturing food for the trees which bore them, and their chlorophyll—that marvellous substance which gives to all plants their green colour—has yielded to decay. It is during this process of decay that a certain colouring principle in the leaf produces, through oxidation, the many varying tints, ranging from pale yellow to deep red-brown, that render beautiful the time of autumn. This change, it is said, is mainly chemical in its nature, and can be readily imitated in the laboratory.

But previous to this process of change of colour, or proceeding concurrently with it, the death of the leaf takes place. The exact manner in which this occurs is not known, but it is generally believed that it is in this wise: The tissue of the leaf is built up of "cells" or tiny bladders, each of which is separated from its neighbour by a very delicate membrane, which forms its own boundary walls. When the leaf is still vigorous, the veins which ramify through it keep it constantly supplied with crude sap, which they draw from the soil, through other conductors in the older parts of the plant, with which the veins are in communication. Now, by a well-known law of physics, fluids of varying densities, when separated by a membrane, will pass through it; and as the crude sap brought into the leaf is always varying in density, it passes readily from one cell to another through their walls; but this is only during the period of activity. In deciduous trees, towards the autumn, the period of decay sets in, the delicate walls of the cells become covered by a deposit of earthy matters contained in the crude sap, until the whole tissue becomes choked and unable to perform its work, and the leaf dries up and dies. Meanwhile, according to the distinguished botanist Sachs, the starch and valuable earth salts, which form the food of the plant, pass out of the leaf to be stored up for use later on when the buds shoot. The leaf may then fall, or remain on the tree for some time, as in the Oak, or a leaf may fall before it reaches this condition when still green. For the death of the leaf and its changes of colour are quite independent of its fall. This is brought about by

what is termed an "articulation." Close to the base of the leaf-stalk, and just about where it joins with the stem, a circular line of cleavage forms right through the tissue, commencing at the exterior, and terminating at the little bundles of vessels and fibres which pass up almost centrally through the stalk until they spread out as the veins of the blade. This line of cleavage forms along a transverse layer of the cells of which the outer part of the stalk is composed, and the side of the cleavage next to the stem bearing the stalk becomes covered with a layer of a substance of a cork-like nature. The object of this layer is to prevent the evaporation of sap, or the soaking in of rain, and consequent frost-bite, and it forms a clean scar when the leaf drops. If some fallen leaves—say from a Horse Chestnut or an Ash—be examined, the terminations of their stalks will present no appearance of having been torn, whilst the scars on the twigs from which they have dropped will be found to be quite even, and their surfaces apparently continuous with the integument of the twig. The little dots observed on these scars are the broken ends of the bundles of fibres and vessels, and their arrangement and the outline of each scar are so regular in each species as to enable botanists to distinguish one tree from another when the leaves have fallen.

Even whilst in the vigour of its youth, the leaf is marked out for its fall; for a slight line may then be observed on the surface of the stalk, which is the beginning of the articulation. When once the articulation is complete, it needs but little to bring the leaf to the ground. The slightest puff of wind, a shower, or the dryness of one side of the leaf-stalk, by causing a twisting, or the pressure of the new leaf-bud, generally found growing in the angle between the leaf-stalk and the stem, will be sufficient to cause its fall. Or even the simple weight of the blade may be enough to rupture the slight connecting bundles of fibres and vessels, as when Thoreau saw from his cabin the leaves "falling by their own weight" in the woods around Concord. Sometimes, too, the leaves will suddenly fall in a shower in the late October or November mornings. This is caused by a thin layer of ice forming in the articulation during the night, and thawing in the morning sun.

The leaves of all plants, however, are not articulated. The articulation never occurs in Ferns, nor in plants with leaves that have parallel veins (monocotyledons), such as the Palm, as the leaves of these wither gradually on the stem. It is present in most plants with netted veins (dicotyledons), though there are exceptions, of which the Oak is one. The withered leaves of this tree may often be seen persisting into the next spring, and generally more plentifully on the younger trees. The object of this retention of the old leaves, it has been suggested, is to protect the young buds against

the wintry winds. That it subserves some purpose is very probable; and what more in accordance with the ways of Nature than that the decaying remains of one generation should cherish the young life of the next?—THEODORE W. DICKER, in *Field*.

Salix babylonica Salamoni.—This is a tree of extraordinary vigour, attaining large dimensions, which renders it advantageous for burning, particularly in bakehouses. It can also be recommended for its ornamental character, and is well adapted for an avenue. It possesses the advantage of thriving nearly anywhere, and accommodates itself perfectly to calcareous and dry soils. As an isolated tree, the beauty of its bearing, its abundant branches, and the thickness of its foliage are strong recommendations. Another quality is the length of time this Willow retains its leaves, which greatly increases its ornamental merit; whereas the greater number of trees which have frail leaves are stripped in September or October, those of the *S. b. Salamoni* only fall after the frosts commence.

A profitable timber tree.—The wild Black Cherry (*Prunus serotina*) grows rapidly, and its timber realises as high a price in many markets as Black Walnut. It is much more profitable than the Black Walnut, as many more trees can be grown to the acre. It is not so detrimental to other vegetation as the Black Walnut. Another great advantage the Cherry has over the Black Walnut is that it is ready for the cabinet-maker in less than half the time required for the Walnut, and to this may be added the advantage that it is more cheaply grown. One bushel of Cherry seeds will produce as many seedlings as 25 bushels of Walnuts, and the Cherry is more easily dug up and transplanted. In all this I would not be understood as saying one word against the Black Walnut as a timber tree. It is a very valuable tree, as is well known to everybody, but Black Walnut trees will not all make saw logs when planted 2 feet or 3 feet apart. The common-sense way would be to plant them at least 20 feet apart, and fill in with cheap, rapid-growing trees that could be cut out in time, leaving the whole space to the Walnuts, for it should be borne in mind that the Black Walnut sapling is of very little use. The Black Cherry is found from the Canadian lower provinces to Florida, and from the seaboard to Kansas and Nebraska. The Black Walnut has about the same range, both apparently "running out" in Northern Wisconsin and Minnesota. The Black Cherry will make a rapid growth on much poorer land than will the Black Walnut. It grows well on a light, sandy, gravelly loam, and succeeds best on dry land. Where the ground is naturally moist the Black Walnut will flourish and should be preferred.—R.





